BUILDING CODE OF THE CITY OF NEW YORK

Plus Reference Standards and Selected Rules and Regulations of the Department of Buildings

Local Law No. 76 Effective December 6, 1968
Includes Amendments to October 1, 2004

Michael R. Bloomberg
Mayor

Patricia J. Lancaster
Commissioner
Department of Buildings

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Commissioner
Department of Citywide Administrative Services

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Volume 1 of 2

New York City Department of Buildings
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VOLUME 1

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Plus Selected Rules of the Department of Buildings
LOCAL LAW NO. 76 Effective Dec. 6, 1968
INCLUDES AMENDMENTS To October 1, 2004

MICHAEL R. BLOOMBERG
MAYOR

PATRICIA J. LANCASTER, A.I.A.
Commissioner

PREFACE

The current Building Code was enacted by the City Council on October 22, 1968, and approved by the Mayor on November 6, 1968. It became effective on December 6, 1968, superseding the Building Code enacted in 1938. The "New Code" is based largely upon nationally accepted performance standards and specifications for materials and construction assemblies.

The present edition updates the Building Code to October 1, 2004.

The State Legislature, pursuant to Chapter 907 of the Laws of 1985, repealed and reenacted the Administrative Code of the City of New York to reflect changes in form, particularly a complete renumbering of the sections of the Code.

Accordingly, General Provisions, Licenses and Building Construction are contained in Chapter 1 of Title 26 and the Building Code is contained in Chapter 1 of Title 27. The old section numbers of the Building Code are shown in brackets, followed by the new section numbers. This serves as a convenience to architectural and engineering professionals and construction industry members familiar with the Code prior to this revision.

To facilitate the adoption of proven results of research and development in the dynamic field of construction, the Code provides that the Buildings Commissioner may adopt new standards or revise existing standards. In the past, this could only be accomplished by legislative action. Moreover, the Code further provides that equipment and materials may be accepted by the Department of Buildings based upon national reference standards and tests conducted by recognized national laboratories. Such acceptance previously required approval by the Board of Standards and Appeals.

Since 1968, there developed a need to respond to new situations or exigencies through the passage of local laws whose provisions were incorporated in the Building Code. Some of these included Local Law 5/73 (Fire Safety in Office Buildings); Local Law 41/78 (Fire Safety in Places of Public Assembly); Local Law 10/80 and Local Law 11/98 (Owners' Inspection of Building Facades); Local Law 10/81 (Owners' Inspection of Elevators); Local Law 16/84 (Fire Safety in Buildings, including Hotels); Local Law 10/99 (sprinkler protection of residential building).

Recent significant amendments to the Building Code include:

- **Padlock Law (Local Law 6/93)**
- **Sidewalk Sheds**
- **Elevators and Escalators**
- **Fees**
- **Registration of Expediters**
- **Boiler Inspections**
- **Consolidation of the Board of Standards and Appeals Equipment Section into the Materials & Equipment Acceptance Section of the Department of Buildings**
- **Cranes and Derricks**
- **Sprinklering of Residential Buildings (Local Law 10/99)**
- **Regulation of Outdoor Advertising (Local Law 14/01)**
- **Use of Mercury Gauges to Test Plumbing, Prohibited (Local Law 17/01)**
- **Awnings (Local Law 44/03)**
- **Carbon Monoxide Detectors (Local Law 07/04)**
- **Sprinklers, Exit Signs, and Photo-Luminescent Marking in High Rise Office Buildings and Other Prospective Changes to the Code relating to Fire Safety (Local Law 26/04)**
- **Mechanical Refrigeration (LL 32/04)**

For further information, readers may wish to refer to the published series of the Department of Buildings' Directives and Memorandums which are available at CityStore (NYC.gov/citystore) or visit the Department of Buildings website at NYC.gov/buildings for the latest policy and procedure notices.

Patricia J. Lancaster, AIA
Commissioner

EDITOR'S NOTE:
In addition to Chapter 907 of the state laws of 1985 mentioned in the preface above, the legislature enacted, effective September 1, 1986, Chapter 839 of the state laws of 1986, which made certain technical corrections and changes to the recodification.
Within the Reference Standards Appendix of this volume are references to specific sections in the Building Code. Standards enacted prior to the recodification of the Building Code refer to the code using the old section numbers. For your convenience, therefore, we have included a two-part conversion table which lists former to current and then current to former section numbers. In addition, the Table of Contents lists old and new major headings.

Editorial notes pointing out discrepancies between the former code and the recodified version not specifically indicated as changes, or references to laws that have amended the code since recodification, are indicated with asterisks and corresponding footnotes in bold italics at the following the section. Obvious errors (such as misspellings) are corrected and noted within the text with a [*sic*] following the particular word.

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BUILDING CODE AMENDMENTS

The following is a listing of the Local Laws amending the Building Code during the period from December 6, 1968 through October 1, 2004

For the date of the Mayor's approval of the Local Laws listed below, see "Dates of N.Y.C. Local Laws approved by the Mayor," in this index.

Title 26: Housing and Buildings

Item Amended		
Old Section Number	**New Section Number**	**Local Law(s)**
[641-4.0]	26-104	91-1989; 45-1984
[642-2.0]	112	107-1993
[643a-4.0]	118	48-1983; 45-1983
[8.0]	122	17-1982
[10.0(c)]	124(c)	107-1993
[11.0]	125	65-1997; 62-1991; 80-1985; 17-1982
[11.0(b)]	125(b)	80-1985; 17-1982
[11.0(c)]	125(c)	16-1984
[11.0(e)]	125(e)	27-1996
[11.0(g)]	125(g)	35-2004; 44-2003
	125.1	99-1991
[12.0(d)]	126(d)	35-2004; 44-2003
[12.1(a)]	126.1(a)	3-1998
[12.1(a)(e)]	126.1(a)(e)	65-1997; 80-1985
[12.2(a)(f)(g)(h)(i)(j)(k)]	126.2(a)(f)(g)(h)(i)(j)(k)	03-1998; 80-1985
[12.2(f)]	126.2(f)	02-2000
[12.3]	126.3	80-1985
[12.4 (10)]	126.4(10) (Repealed)	14-2001; 03-1998; 80-1985
[13.0]	127	23-1990
	127.1	23-1990
	127.2	06-1993
	127.3	14-2001
[14.0]	128	25-1984
[B26-1.0]	26-131	45-1969
[1.2]	133	55-1989; 63-1970
[1.3]	134	59-1996; 61-1970
[1.6]	137	51-2001; 91-1981
[1.7]	138	55-1989; 79-1981
[1.8]	139	73-1969
[2.0] - [2.3]	141 - 144	55-1989; 79-1981
[2.0(e)]	141(e)	10-1999
[2.0(h)(1)]	141(h)(1)	10-1999
[2.4]	145	79-1981
[2.5]	146	55-1989; 79-1981
[2.6]	147	55-1989; 91-1981
[2.6(a)(b)]	147(a)(b)	51-2001
[2.7]	148	55-1989; 79-1981
[2.8]	149	55-1989; 79-1981
[2.9]	150	55-1989
[2.9(a)]	150(a)	51-2001
	150.1	51-2001
[2.10] – [2.12]	151 - 153	55-1989; 79-1981
	153.1	55-1989
[3.2]	156	61-1970
[3.3]	157	45-1969
[4.0]	159	61-1970
[4.2] – [4.4]	161 – 163	61-1970
[4.3(a)(1)]	162(a)(1)	108-1993
[5.0]	166	73-1969
[5.3]	169	73-1969
[5.4]	170	91-1981
[5.5]	171	73-1969
[6.0]	172	45-1983
[6.8]	180	91-1981
[6.9(c)]	181(c)	63-1970
[7.2]	184	63-1970
[7.8]	190	91-1981
[7.9(c)]	191(c)	63-1970
[8.6]	198	91-1981
[8.7]	199	63-1970
[9.2]	202	61-1970
[9.3]	203	91-1981
[9.4]	204	65-1990
[C26-30.0]	26-210	05-1976
[31.0]	211	38-1990; 91-1981
[32.0]	212	56-1993; 38-1990; 40-1987; 35-1984;

Item Amended		
Old Section Number	**New Section Number**	**Local Law(s)**
		91-1981
[32.0(2)(5)]	212(2)(5)	109-1993
[32.0(2)(5)(7)(a)]	212(2)(5)(7)(a)	107-1993
	212.1	58-1988
	212.4	50-1988
[33.0]	213	62-1991; 48-1991; 91-1981
[33.0(b)(c)]	213(b)(c)	40-1987
[34.0]	214	53-1993; 72-1991; 54-1991; 38-1990; 25-1984
[34.0(a)(14)]	214(a)(14)	53-1993
[34.1]	214.1	55-1991; 34-1988; 76-1985
[35.0]	215	38-1990; 25-1984
[C26-82.5]	26-240	59-1996;

Item Amended		
Old Section Number	**New Section Number**	**Local Law(s)**
		05-1972
[84.0]	243	14-1989
[84.0(b)]	243(b)	59-1996
[Article 8-A]	Article 9	39-1972
[85.5]	246	41-1978
[85.5(a)(4)]	246(a)(4)	17-1982
[86.5]	248	33-1991; 17-1982
[86.5(f)]	248(f)	10-1981
[86.5(g)]	248(g)	16-1984; 17-1982
[86.5(g)(4)]	248(g)(4)	26-2004
[87.0]	249	23-1990
[87.5]	250	39-1972
[92.0]	252	33-1991; 45-1969
[92.0(a)]	252(a)	93-1996
Art.1 & 2 of Subchapter 4		14-2001

Title 27: Construction and Maintenance

Item Amended		
Old Section Number	**New Section Number**	**Local Law(s)**
[100.6]	27-106	32-2004; 41-1978
[103.0]	114	16-1984
[103.0(e)]	114(e)	45-1984
[103.0(h)]	114(h)	32-2004
[103.2]	116	06-1974
[103.3]	117	06-1974
[103.4]	118	16-1984
	118.1	65-1997
[103.6]	120	61-1969
[103.7]	121	06-1974
[103.8]	122	72-1977
[103.9]	123	79-1979
	123.1	58-1987
	123.2	10-1999
Table 4-1 (Residential J-2)		10-1999
[104.3(a)(b)]	126(a)(b)	51-2001
[105.3]	129	11-1998; 10-1980
[106.2]	131	49-1991
	131.1	49-1991
[106.3(a)]	132(a)	77-1972
[107.1]	134	39-1972
[108.2]	139	85-1973
[108.2(2)]	139(2)	22-2002; 65-1996
[108.3]	140	72-1991
	140.1	72-1991

Item Amended		
Old Section Number	**New Section Number**	**Local Law(s)**
[108.5]	142	30-1970
[108.7]	144	19-1983; 76-1985
[109.1]	147	39-1972
[109.3]	149	107-1993
[109.4]	150	76-1985
[109.7]	153	107-1993
[110.2(c)(3),(4)]	157(c)(3),(4)	85-1973
[110.2(c)(4)]	157(c)(4)	22-2002; 65-1996
[110.3]	158	33-1988
[110.5]	160	103-1989; 07-1974
[110.5(a)]	160(a)	65-1996
[111.2]	162	103-1989
[113.1]	167	19-1983
[113.2]	168	30-1970
[113.5]	171	73-1982
[114.4]	175	06-1997
[114.4(a)]	175(a)	51-2001; 30-1982
[114.4(b)]	175(b)	51-2001
[115.1]	177	14-2001
[115.2]	178	59-1996
[115.3]	179	63-1970
[116.1]	180	107-1993
[116.3]	182	06-1997
[116.3(g)(h)]	182(g)(h)	107-1993

Item Amended		
Old Section Number	**New Section Number**	**Local Law(s)**
[116.5(d)(1)]	184(d)(1)	32-2004
	184.1	06-1997
[118.1]	191	19-1983
[118.5]	195	77-1972
[118.6]	196	38-1990; 33-1988
[118.7]	197	11-1988
[118.8]	198	19-1983
[118.9]	198.1	76-1985
[118.10]	198.2	59-1985
[119.6]	204	65-1996; 70-1980
[120.4]	208	39-1972
[120.5]	209	39-1972
[121.1]	213	91-1989; 70-1980
[121.2]	214	70-1980
[121.2(b)]	214(b)	65-1996
[121.2(c)]	214(c)	16-1984
[121.4]	216	14-1989
[121.6]	218	12-1993
[121.7]	219	65-1996; 103-1989; 07-1974
[121.10]	222	73-1988
[121.10(b)]	222(b)	16-1984
[121.12]	224	45-1969
[123.1]	227	45-1983
[124.1]	228.1	16-1984
[125.1]	228.5	26-2004; 16-1984
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	27-228.7	109-1993
[C26-201.0]	27-232	22-2002; 27-1998; 107-1993; 49-1991; 58-1987; 16-1984; 30-1982; 41-1978; 28-1975; 80-1972; 39-1972; 05-1971; 73-1969
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Accessible Route		58-1987
Adaptable Dwelling Units		58-1987
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Gas Meter Piping		30-1982
Gas Meter Service		30-1982
Non-Combustible		80-1972
Definitions Added—		
Atrium		16-1984
Cabaret		41-1978
Elevator Vestibule		26-2004; 16-1984
Existing Building		16-1984
Existing High Rise Building		16-1984
Exit		26-2004
Fire Protection Plan		16-1984
Fire Safety Plan		16-1984
Gas Service Line Valve		30-1982
Gas Service Piping		30-1982
Group Home		28-1975
High Rise		16-1984
Low Rise		16-1984
Mall		16-1984
Office Building		26-2004
Outside Gas Service Line Valve		16-1984
Physical Disablility		58-1987
Place of Assembly		23-1990
Primary Entrances		58-1987
Public Areas		16-1984
Smoke Barriers		26-2004; 16-1984
Stage		41-1978
Usable Dwelling Units		58-1987
Valve		16-1984
[300.2]	27-235	39-1972
[301.3]	239	39-1972
[302.1(a)]	243(a)	30-1982
[302.2]	244	61-1969
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Table 3-4 Footnotes (e)(m)		26-2004
[305.4]	252	61-1969
[307.1]	254	23-1990
[308.1]	259	16-1984
[309.3]	262	39-1972
[313.3]	271	77-1988; 39-1972
[315.2]	281	12-1993
[400.1]	288	13-1975
[401.1]	291	58-1987
	291.1 – 292.5	58-1987

Item Amended		
Old Section Number	**New Section Number**	**Local Law(s)**
	292.6	65-1988; 58-1987
	292.7 – 292.20	58-1987
[403.1]	296	61-1969
[403.2(a)]	297(a)	52-1975
[404.1]	299	61-1969
[406.2]	306	05-1971
[407.2]	308	58-1987; 83-1973
[407.3, .4, .5, .6]	309 – 312	83-1973
[408.1(e)(f)]	313(e)(f)	08-1974
[408.3]	315	104-1993; 54-1970
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Table 4-2		45-1984; 16-1984
[409.0]	Article 10	13-1975
[409.1]	316	33-1988
	316.1	33-1988
[409.2]	317	58-1983; 33-1988
[409.3]	317.1	14-1989
[409.4]	317.2	14-1989; 33-1988; 58-1983
[502.2(f)]	324(f)	55-1976
[502.2(g)]	324(g)	26-2004
[502.5]	327	16-1984; 39-1972
[503.1(f)]	331(f)	39-1972
[503.2(f)]	332(f)	13-1987
[503.3]	333	13-1987; 39-1972
	335.1	13-1987
[503.5(d)(2), (3)]	338(d)(2), (3)	39-1972
[503.8(i)]	338(i)	45-1984
[504.1(c)]	339(c)	16-1984
[504.1(c)(6)(7)]	339(c)(6)(7)	86-1979
[504.5]	343	16-1984
[504.5(d)]	343(d)	26-2004
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[504.6]	344	84-1979
[504.7]	345	16-1984; 16-1987
[504.10(c)(1)]	348(c)(1)	16-1984
[504.12]	350	39-1972
[504.12(a)]	350(a)	59-1996
[504.13(d)]	351(d)	16-1984
[504.14]	352	80-1989
[504.15]	353	05-1973

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[504.16]	353.1	16-1984
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	353.3	26-2004
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[600.3]	356	54-1970
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[603.1(b)]	365(b)	61-1969
[603.2]	366	32-1971; 61-1969
[603.2(2)]	366(2)	32-1971
[603.2(3)]	366(3)	16-1984
[603.3]	367	16-1984
[604.1]	368	16-1984; 28-1975
[604.2]	369	16-1984
[604.2(g)(3)]	369(g)(3)	65-1980
[604.2(h)]	369(h)	70-1981; 61-1969
[604.2(i)]	369(i)	21-1972
[604.3(h)(3)]	370(h)(3)	21-1972; 54-1970
[604.3(h)(4)]	370(h)(4)	49-1975
[604.4(b)]	371(b)	81-1973; 21-1971
[604.4(c)]	371(c)	26-2004; 16-1984
[604.4(e)]	371(e)	58-1987; 48-1971
[604.4(g)]	371(g)	49-1975
[604.4(j)(1)(b)]	371(j)(1)(b)	14-1993; 05-1973; 54-1970
[604.4(j)(2)]	371(j)(2)	08-1971; 61-1969
[604.5(d)]	372(d)	39-1972
[604.8(b)]	375(b)	28-1975; 54-1970
[604.8(g)]	375(g)	39-1972
[604.8(h)]	375(h)	28-1975; 05-1971
[604.8(i)]	375(i)	61-1969
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Item Amended		
Old Section Number	**New Section Number**	**Local Law(s)**
[604.8(i)(1)(b)]	375(i)(1)(b)	28-1975; 05-1971
[604.8(i)(1)(e)(f)]	375(i)(1)(e)(f)	50-1971
[604.8(i)(1)(g)]	375(i)(1)(g)	08-1976; 50-1971
[604.8(i)(2)]	375(i)(2)	54-1970
[604.8(i)(4)]	375(i)(4)	61-1969
[604.8(i)(6)]	375(i)(6)	26-2004
[604.8(j)]	375(j)	31-1981
[604.8(k)]	375(k)	61-1969
	376.1	26-2004
[604.10(c)]	377(c)	58-1987
Table 6-4		39-1972
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[605.1(a)(e)]	381(a)(e)	16-1984
[605.1(d)]	381(d)	39-1972
[605.1(e)(1)]	381(e)(1)	59-1996
[605.2]	382	16-1984
[605.2(a)]	382(a)	59-1996
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[606.1]	383	26-2004; 61-1969
	383.1	26-2004
[606.2]	384	16-1984
[606.2(a)]	384(a)	59-1996
[606.2(c)]	384(c)	26-2004
[606.3]	385	61-1969
[607.1]	388	50-1973; 39-1972
[608.1]	390	16-1984; 05-1973
[608.2]	391	05-1973
[608.3]	392	05-1973
[608.4]	393	05-1973
[608.5]	394	45-1984
[608.6]	395	05-1973
[608.7]	396	16-1984; 05-1973
[609.1, .2, .3]	Article 10	16-1984
[610.1, .2, .3]	Article 11	16-1984
[C26-701.6]	27-405	39-1972
[704.6]	423	39-1972
[707.3]	440	68-1999; 70-1969
[709.6]	455	82-1973
	459.1	58-1987
	472.1	58-1987
[712.3]	481	103-1989
	483	58-1987
[713.0 (repealed)]		16-1984
[714.1]	488	06-1969
[714.6]	493	06-1969
	493.1	58-1987

Item Amended		
Old Section Number	**New Section Number**	**Local Law(s)**
Art. 17-A of Subchapter 7		03-1998
	508.6	02-2000; 03-1998
	508.7	10-1988
[717.1]	509	39-1972
[718.5(b)(1)]	514(b)(1)	39-1972
[719.1 – .4]	518 – 521	54-1970
[720.1 – .9]	Article 21	16-1984
[721.1 – .7]	Article 22	16-1984
[C26-800.1]	27-522	23-1990
[800.3]	524	39-1972
[801.1]	525	39-1972
	525.1	23-1990
[801.7(a)(5)]	531(a)(5)	39-1972
[801.7(a)(1)(h)]	531(a)(1)(h)	58-1987
[801.9]	533	39-1972
[801.17]	541	41-1978
[801.18]	542	41-1978
[802.2(b)(7)(b), (7)(d)]	546(b)(7)(b), (7)(d)	39-1972
[802.2(b)(8)(b)]	546(b)(8)(b)	39-1972
[802.2(9)]	546(9)	41-1978
[802.3(b)(2)(d)]	547(b)(2)(d)	41-1978
[804.1(a)(3)]	549(a)(3)	41-1978
[804.1(b)]	549(b)	41-1978
[C26-900.1]	27-550	13-1975; 76-1968
[904.0(a)(b)]	569(a)(b)	17-1995
[C26-1000.1]	27-580	13-1975
Table 10-2		17-1995
[1001.4]	594	17-1995
[1002.4(b)]	599(b)	51-1976
[1004.1]	603	65-1990
[1004.3]	605	65-1990
[1004.3(b)]	605(b)	39-1972
[1004.3(c)]	605(c)	62-1971
Table 10-3		65-1990
Table 10-3A		65-1990
[1004.4]	606	65-1990
[1004.5]	607	65-1990
[1004.5(a)(1)(2)]	607(a)(1)(2)	39-1972
[1004.6]	608	65-1990
[1004.7]	609	65-1990
	611.1	65-1990
[1004.10]	612	65-1990
[1004.11]	613	65-1990
	613.1, .2	65-1990
[1005.1(c)]	614(c)	26-2004
[C26-1100.1]	27-652	13-1975
[1101.2(c)]	663(c)	33-1971
[1101.3]	664	33-1971
[1102.3(a)]	670(a)	17-1995
[1106.7(c)(1)]	694(c)(1)	54-1970
[1112.1]	719	33-1971

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Old Section Number	**New Section Number**	**Local Law(s)**
[1112.2]	720	33-1971
[C26-1201.1]	27-731	13-1982
[1202.2]	733	61-1969
[1202.3]	734	61-1969
[1203.5]	739	61-1969
[1205.2, .3, .6, .7]	746, 747, 750, 751	61-1969
[1206.3(e)]	754(e)	08-1980
[1206.3(e)(3)]	754(e)(3)	26-2004
[1206.3(f)]	754(f)	26-2004
[1207.2]	758	61-1969
[1207.5]	761	90-1973
[1208.2(a)(1), (b)]	769(a)(1), (b)	38-1972
[1208.2(b)(4)]	769(b)(4)	14-1976
[1208.3(b)(4)]	770(b)(4)	05-1973
[C26-1300.1]	27-771	13-1975
[1300.6(c)]	776(c)	31-1981
[1300.7]	777	80-1973
[1300.7(d)]	777(d)	35-1975
[1300.8]	777.1	16-1984
[1300.8(a)(5)]	777.1(a)(5)	13-1975
[1300.9]	777.2	16-1984
[1301.2(a)]	779(a)	26-2004
[1301.4(c)]	781(c)	32-2004; 54-1970
[1304.3]	786	54-1970
[C26-1400.1]	27-787	13-1975
[1401.1]	793	62-1991
[1401.1(b)]	793(b)	10-1976
[1401.1(c)(1)(g)]	793(c)(1)(g)	45-1969
	826.01	80-1989
[1416.1]	827	70-1969
[1416.4(f)]	830(f)	26-2004
	848.01 - .12	80-1989
Table 14-1		80-1989
[C26-1500.7]	27-855	80-1989
[1501.1]	856	80-1989
[1501.6]	861	80-1989; 03-1976
[1501.8]	863	80-1989
	863.01	80-1989
Table 15-6.1		80-1989
[1501.9]	864	80-1989
[1501.12]	867	80-1989
	869.01 - .03	80-1989
[1502.2]	871	10-1976
Table 15-8		80-1989
[1502.5]	874	10-1976
[1503.1(d)]	875(d)	04-1976
[1504.1 – 1504.3]	879 – 881	80-1989
[1504.6]	884	80-1989
[C26-1600.6(e)]	901(e)	65-1996
[1600.6(e)(g)]	901(e)(g)	07-1974

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Old Section Number	**New Section Number**	**Local Law(s)**
[1600.6(f)]	901(f)	22-2002
[1600.6(k)]	901(k)	104-1993; 103-1989; 07-1974
[1600.6(v)]	901(v)	22-2002
[1600.6(z)(3)]	901(z)(3)	31-1981
[1600.6(aa)]	901(aa)	35-1975 13-1975
[1600.7(a)(b)]	902(a)(b)	17-2001
[1600.9]	904	30-1982
[1600.10]	905	30-1982
[1602.1]	909	65-1996
[1602.2]	910	65-1996
[1604.3]	915	22-2002
[1605.3]	918	39-1972
[1606.1]	919	51-2001
[1606.3]	921	30-1982
[1606.4]	922	18-1992; 30-1982
[1606.4(a)(1)(b)]	922(a)(1)(b)	17-2001
[1606.4(d)(1)(a)]	922(d)(1)(a)	17-2001
[1606.4(d)(4)]	922(d)(4)	17-2001
[C26-1700.1]	27-923	16-1987
[1700.7(a)]	929(a)	16-1984
[1700.7(c)]	929(c)	26-2002
	929.1	26-2004
[1701.1(a)(3)]	930(a)(3)	53-1970
Table 17-2		10-1999; 05-1973
Table 17-2 (line 4)		26-2002
[1702.1]	932	39-1972
[1702.1(a)(1)]	932(a)(1)	75-1972
[1702.1(b)]	932(b)	32-1978
[1702.5(a)]	936(a)	39-1972
[1702.11(c)]	942(c)	16-1984; 09-1974
[1702.11(c)(5)]	942(c)(5)	09-1974; 53-1970
[1702.14(b)]	945(b)	16-1984
[1702.14(d)]	945(d)	45-1984; 05-1973
[1702.15(b)(3)]	946(b)(3)	32-2004
[1702.16(b)(1)]	947(b)(1)	10-1999; 16-1984
[1703.1(c)(d)(1)(e)]	954(c)(d)(1)(e)	16-1984
[1703.1(d)]	954(d)	82-1973
[1703.1(i)]	954(i)	45-1984; 05-1973
[1703.1(j)]	954(j)	41-1978
[1703.1(k)(1)]	954(k)(1)	45-1984; 05-1973
[1703.1(l)(1)]	954(l)(1)	10-1999; 05-1973;

Item Amended		
Old Section Number	**New Section Number**	**Local Law(s)**
		61-1969
[1703.1(m) – (r)]	954(m) – (r)	45-1984; 05-1973
[1703.1(m)]	954(m)	10-1999
[1703.1(s)]	954(s)	41-1978
[1703.1(t)]	954(t)	10-1999; 16-1984
[1703.1(w)]	954(w)	10-1999
[1703.1(x)]	954(x)	45-1984
[1703.1(aa)]	954(aa)	26-2002
[1703.2]	955	10-1999; 45-1984; 05-1973
[1703.3(a)(b)]	956(a)(b)	10-1999
[1703.4(a)]	957(a)	10-1999; 45-1984; 05-1973
[1703.6(b)]	959(b)	45-1984; 05-1973
[1703.6(c)]	959(c)	10-1999
[1703.6(5)]	959(5)	10-1999
[1703.8(a)]	961(a)	16-1984
[1703.9(c)]	962(c)	26-2002
[1703.9(e)(4)(6)(8)(9)]	962(e)(4)(6)(8)(9)	10-1999
[1703.9(g)(h)(i)]	962(g)(h)(i)	16-1984
[1703.9(g)]	962(g)	10-1999
[1703.10]	963	10-1999
[1703.10(d)]	963(d)	16-1984
[1703.12]	965	10-1999
[1703.13(a)]	966(a)	16-1984
[1703.13(b)]	966(b)	10-1999
Table 17-2		10-1999
1704.1(a)(2)(5)(9)]	968(a)(2)(5)(9)	16-1984
[1704.1(10)]	968(10)	41-1978
[1704.1(b)]	968(b)	30-1982
[1704.3]	970	16-1984
[1704.5(e)]	972(e)	16-1987; 16-1984
[1704.6(a)(2)]	973(a)(2)	16-1987; 16-1984
[1704.8]	975	16-1987; 16-1984
[1705.0]	978	81-1989; 62-1981
[1705.2]	979	81-1989; 16-1984
[1705.4]	981	49-1991

Item Amended		
Old Section Number	**New Section Number**	**Local Law(s)**
Article 7 of Subchapter 17		07-2004
[C26-1800.6]	27-987	96-1985
[1800.6(c)]	987(c)	26-2004
[1800.7]	988	46-1975; 65-1969
[1800.8]	989	75-1984; 45-1984; 16-1984
[1800.12]	993	48-1975
[1801.3]	996	29-1973
[1801.4]	996.1	16-1984
[1801.5]	996.2	16-1984
[1802.2]	998	48-1991; 96-1985; 10-1981
[1802.4]	1000	48-1991
[1802.4(b)]	1000(b)	16-1984
[1803.4]	1004	39-1993
[1804.1]	1005	54-1970
[C26-1900.3(c)]	27-1009(c)	30-1978
[1900.3(d)]	1009(d)	45-1983
[1901.2]	1018	61-1987
[1901.3(b)(3)]	1019(b)(3)	71-1977
[1901.3(b)(4)]	1019(b)(4)	71-1977
[1901.4]	1020	45-1983
[1901.5]	1021	33-1991
[1901.5(a)(1)(a)]	1021(a)(1)(a)	93-1996
[1901.5(a)(5)]	1021(a)(5)	45-1983
[1901.5(a)(6)]	1021(a)(6)	61-1987
[1901.5(b)]	1021(b)	45-1983
[1901.5(g)]	1021(g)	61-1987
[1901.6]	1022	61-1987
[1901.6(a)(1)]	1022(a)(1)	53-1975
[1904.3(f)(1)]	1035(f)(1)	61-1987
[1905.2(a)(4)]	1037(a)(4)	73-1980
[1905.4(d)(1)]	1039(d)(1)	60-1977
[1905.4(h)]	1039(h)	16-1984
[1907.1(b)(2)	1042(b)(2)	54-1970
[1907.4(b)]	1045(b)	53-1975
[1909.1]	1054	73-1969
[1909.2]	1055	15-1993
[1909.3]	1056	73-1969
[1909.3(a)(5), (b)]	1056(a)(5), (b)	74-1984
[1909.4]	1057	73-1969
[1909.4(a)(5)]	1057(a)(5)	50-1973

BUILDING CODE AMENDMENTS

The following is a listing of the State Laws amending the Building Code during the period from December 6, 1968 through October 1, 2004

Item Amended		State	Effective
Old Section Number	New Section Number	Law(s)	Date(s)
—	26-126.5	Chapter 45 Laws of 2000	9/4/00
[C26-201.0]	27-232	Chapter 559 Laws of 1995	1/1/96
[1205.7]	27-751	Chapter 559 Laws of 1995	1/1/96

REFERENCE STANDARDS REVISIONS

The following is a listing of the revisions to the Reference Standards of the Building Code as approved by the Board of Standards and Appeals and Department of Buildings promulgations through October 1, 2004

Item Amended	Local Law(s)	Board of Standards and Appeals	Department of Buildings – Effective Dates
RS 2-1 List	13-1987	428-83-BCR; 705-80-BCR; 237-87-BCR; 135-88-BCR; 213-90-BCR	5/1/99; 6/1/96; 5/17/96; 3/14/96
RS 3 List		1341-88-BCR	
RS 3-1		1341-88-BCR	
RS 3-2		1341-88-BCR	
RS 3-3-Definitions:			
Group Homes,	39-1972		
Health Centers, Government operated	39-1972		
RS 4 List	58-1987; 33-1988		8/11/02; 5/21/01; 9/24/00; 8/21/99;
RS 4-4	13-1975; 58-1983; 33-1988	587-76-BCR	8/11/02; 5/21/01; 9/24/00; 8/21/99; 8/4/94
RS 4-5	13-1975; 58-1983; 33-1988	587-76-BCR	
RS 4-6	58-1987 (Amended)	886-89-BCR	
RS 5 List	16-1984; 13-1987	252-82-BCR; 435-85-BCR; 1076-86-BCR; 262-86 BCR; 236-87-BCR; 1343-88-BCR; 242-90-BCR	3/4/01
RS 5-1A,B,C,D,E,F		252-82-BCR; 435-85-BCR; 1076-86-BCR; 262-86-BCR; 236-87-BCR; 242-90-BCR	
RS 5-2		217-72-BCR; 1343-88-BCR	
RS 5-3		398-71-BCR; 308-81-BCR; 1343-88-BCR	
RS 5-4		71-79-BCR; 308-81-BCR; 1343-88-BCR	
RS 5-5		308-81-BCR; 218-72-BCR; 1343-88-BCR	

Item Amended	Local Law(s)	Board of Standards and Appeals	Department of Buildings – Effective Dates
RS 5-6 through 5-8		71-79-BCR; 308-81-BCR; 1343-88-BCR	
RS 5-10		219-72-BCR; 308-81-BCR; 1343-88-BCR	
RS 5-11		308-81-BCR; 1343-88-BCR	
RS 5-12		1343-88-BCR	
RS 5-13		308-81-BCR	
RS 5-14		308-81-BCR	
RS 5-16		353-72-BCR (Amended)	
RS 5-17	5-1973		
RS 5-18	84-1979		
RS 5-18 (5)(6)(7)			8/26/98
RS 5-19	16-1984	1343-88-BCR	
RS 5-20	16-1984	1343-88-BCR	
RS 5-21	13-1987	1343-88-BCR	3/4/01
RS 7 List		888-80-BCR	
RS 7-1		888-80-BCR	
RS 7-2		82-88-BCR	
RS 7-3 and 7-4		888-80-BCR	
RS 8 List		745-80-BCR; 739-86-BCR; 260-86-BCR	
RS 8-1		739-86-BCR; 260-86-BCR	
RS 9 List	17-1995	135-88-BCR	
RS 9-2 Notes a,b,c	39-1972		
RS 9-2			9/2/01
RS 9-3		135-88-BCR	
RS 9-4		135-88-BCR	
RS 9-5 (7)			9/2/01
RS 9-6	17-1995		
RS-10 List	17-1995; 65-1990	142-80-BCR; 510-79-BCR; 799-79-BCR; 51-80-BCR; 390-80-BCR; 714-80-BCR; 302-73-BCR; 208-85-BCR; 425-81-BCR; 738-86-BCR; 288-84-BCR; 1077-86-BCR; 493-80-BCR; 9-87-BCR; 302-71-BCR; 617-87 BCR; 455-89 BCR	9/2/01; 6/17/96
RS 10-1A(1.1) through (1.9)	54-1970	264-73-BCR; 747-72-BCR; 181-72-BCR	
RS 10-1A(1.1)	17-1995		
RS 10-1B	17-1995		
RS 10-2	17-1995	264-73-BCR	
RS 10-3	17-1995	1077-86-BCR	
RS 10-4	17-1995	1077-86-BCR; 455-89 BCR	
RS 10-5A		799-79-BCR; 1085-80-BCR 738-86-BCR; 617-87 BCR	6/17/96
RS 10-5B		617-87 BCR	6/17/96
RS 10-5C	17-1995		
RS 10-6		248-70-BCR; 302-73-BCR; 425-81-BCR; 455-89 BCR	
RS 10-6A		249-70-BCR	
RS 10-7 (Modifications Paragraph)	26-2004	9-87-BCR; 455-89 BCR	
RS 10-8		394-71 BCR; 510-79-BCR; 288-84-BCR; 455-89 BCR	5/17/96
RS 10-9		288-84-BCR; 208-85-BCR; 455-89 BCR	

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RS 10-9(10)	17-1995		
RS 10-10A			9/2/01
RS 10-10B			9/2/01
RS 10-11 through 10-12		455-89 BCR	
RS 10-13		394-71-BCR; 264-73-BCR; 511-79-BCR	5/17/96
RS 10-14		288-84-BCR; 208-84-BCR; 1077-86-BCR	
RS 10-16 and 10-17		887-80-BCR; 288-84-BCR; 1077-86-BCR	
RS 10-18	17-1995	512-79-BCR; 288-84-BCR	3/8/96
RS 10-19		390-80-BCR; 288-84-BCR; 455-89-BCR	
RS 10-20		512-79-BCR; 288-84-BCR; 455-89 BCR	
RS 10-21		887-80-BCR; 288-84-BCR	
RS 10-22		512-79 BCR; 288-84-BCR; 455-89 BCR	
RS 10-23		302-73-BCR; 493-80-BCR; 288-84-BCR	
RS 10-24A and 24B		493-80-BCR; 288-84-BCR; 455-89 BCR	
RS 10-25		288-84-BCR; 208-85-BCR; 455-89 BCR	
RS 10-26		302-73-BCR; 493-80-BCR; 288-84-BCR; 455-89 BCR	
RS 10-27		288-84-BCR; 208-85-BCR 455-89 BCR	
RS 10-28		512-79-BCR; 288-84-BCR; 455-89 BCR	
RS 10-29		288-84-BCR; 208-85-BCR; 455-89 BCR	
RS 10-30 through 10-38		390-80-BCR; 288-84-BCR; 455-89 BCR	
RS 10-39		390-80 BCR; 288-84 BCR;	
RS 10-40		390-80 BCR; 288-84 BCR; 455-89 BCR	
RS 10-41		302-73 BCR; 493-80 BCR; 288-84 BCR; 455-89 BCR	
RS 10-42		288-84 BCR; 208-85-BCR	
RS 10-44		887-80 BCR; 288-84-BCR; 455-89 BCR	
RS 10-46 through 10-48		390-80-BCR; 288-84-BCR; 455-89 BCR	
RS 10-49		1077-86-BCR	
RS 10-51		887-80-BCR; 288-84-BCR; 1077-86-BCR	
RS 10-52		887-80 BCR; 288-84 BCR; 1077-86 BCR; 455-89 BCR	
RS 10-53 through 10-55		288-84-BCR; 208-85-BCR; 455-89 BCR	
RS 10-56		208-85-BCR	
RS 10-57		288-84-BCR; 208-85-BCR; 455-89 BCR	
RS 10-58	17-1995		
RS 10-59		288-84-BCR; 208-85-BCR	
RS 10-61	65-1990	288-84-BCR; 208-85-BCR	
RS 10-62	65-1990		
RS 10-63	65-1990	288-84-BCR; 208-85-BCR	
RS 10-64	65-1990	288-84-BCR; 208-85-BCR	
RS 10-65		1077-86-BCR	
RS 10-66		302-73-BCR	
RS 10-67 & 10-68		455-89 BCR	

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RS 11 List		289-84-BCR; 1342-88-BCR	
RS 11-1 & 11-2		610-80-BCR; 289-84-BCR; 1342-88-BCR	
RS 11-3		610-80-BCR; 1342-88-BCR	
RS 11-3A		610-80-BCR	
RS 11-4 through 11-7		512-79-BCR; 610-80-BCR; 289-84-BCR; 1342-88-BCR	
RS 11-8		610-80-BCR; 289-84-BCR	
RS 12 List		290-84-BCR; 261-86-BCR; 243-90-BCR	
RS 12-1		253-82-BCR; 243-90-BCR	
RS 12-2		253-82-BCR; 290-84-BCR; 261-86-BC; 243-90-BCR;	
RS 12-3		253-82-BCR; 261-86-BCR; 243-90-BCR	
RS 12-4 & 12-5		253-82-BCR; 243-90-BCR	
RS 12-6		253-82-BCR; 261-86-BCR; 243-90-BCR	
RS 12-7		253-82-BCR; 243-90-BCR	
RS 12-8		253-82-BCR; 261-86-BCR; 243-90-BCR	
RS 12-9		253-82-BCR; 243-90-BCR	
RS 13 List	16-1984	913-82-BCR	5/4/02
RS 13-1	16-1984	17-87-BCR	5/4/02
RS 13-2		506-77-BCR	
RS 13-3		695-84-BCR; 814-85-BCR	
RS 13-4		723-72-BCR	5/4/02
RS 13-5		913-82-BCR	
RS 13-6	76-1972	913-82-BCR	
RS 13-7 through 13-11A	80-1973	913-82 BCR	
RS 13-11B		1101-79-BCR	
RS 13-12 through 13-16	80-1973	913-82-BCR	
RS 14 List	80-1989	916-82-BCR; 946-87-BCR	5/4/02
RS 14-1		938-80-BCR; 946-87-BCR	5/4/02
RS 14-2		916-82-BCR; 938-80-BCR; 946-87-BCR	
RS 14-3		938-80-BCR	
RS 14-4		916-82-BCR; 938-80-BCR; 917-87-BCR	
RS 14-5A		916-82-BCR; 938-80-BCR; 917-87-BCR	3/8/96
RS 14-5B		1045-83-BCR	
RS 14-6		916-82-BCR; 917-87-BCR	
RS 14-7		1045-83-BCR	
RS 14-8		938-80-BCR; 917-87-BCR	
RS 14-9		1045-83-BCR	
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RS 14-12		1045-83-BCR; 917-87-BCR	
RS 14-13 through 14-14		1045-83-BCR	
RS 14-18 through 14-22	80-1989		
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RS 15 List	80-1989	1050-83-BCR; 915-82-BCR; 939-80-BCR; 947-87-BCR	
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RS 17-3(8)(a)	16-1984		
RS 17-3(13)(c)(14)		149-75- BCR	
RS 17-3(13)(e) and (h)(2)(b)		149-75-BCR	
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RS 17-3(20)		515-75-BCR	
RS 17-3(20)(III)(E)	16-1984		
RS 17-3(20)(1V)(a)			1/9/02
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RS 17-3A(15)(e)	16-1984		
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Rule 901.2		1240-79-BCR	
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RS 18-5		11-91-BCR; 1156-80-BCR	1-16-03
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RS 18-8 Section (6)(g)(1)&(2)		1156-80-BCR	
RS 18-8 Section 13(a)&(b)		1156-80-BCR	
RS 18-9	65-1969	11-91-BCR; 1156-80-BCR	
RS 18-10		11-91-BCR; 934-84-BCR	
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DATES OF N.Y.C. LOCAL LAWS - APPROVED BY THE MAYOR

Local Law	Approved by the Mayor
Year of 1969	
6	February 20, 1969
45	August 12
61	December 4
65	December 22
70	December 29
73	December 29
Year of 1970	
29	June 30, 1970
30	July 10
53	November 2
54	November 17
61	December 3
63	December 15
Year of 1971	
5	January 7, 1971
8	January 22
21	May 27
32	June 23
33	June 23
48	June 29
50	October 20
51	November 19
62	November 19
75	December 22
Year of 1972	
5	January 18, 1972
6	January 18
21	March 28
38	May 18
39	May 18
75	November 6
76	November 6
77	November 6
80	November 21
Year of 1973	
5	January 18, 1973
28	July 2
29	July 2
50	September 21
58	October 15
63	October 25
80	December 28
81	December 28
82	December 28
83	December 28
84	December 28
85	December 28
90	December 28
Year of 1974	
4	May 6, 1974
6	May 16
7	May 16
8	May 16
9	May 16
Year of 1975	
11	March 31, 1975
13	March 31
14	March 31
15	April 23
24	June 2
26	June 2
28	June 2
31	July 11
32	July 11
35	July 28
46	September 11
48	October 7
49	October 7
50	October 7
52	October 29
53	October 29
Year of 1976	
3	February 10, 1976
4	February 10
5	February 10
8	March 1
10	March 1
14	March 1
18	March 15
50	October 12
51	October 12
55	November 1
63	December 10
65	December 23
Year of 1977	
60	September 2, 1977
67	September 30
69	September 30
71	October 6
72	October 6

Local Law	Approved by the Mayor
Year of 1978	
30	October 6, 1978
32	October 6
41	December 13
Year of 1979	
56	September 18, 1979
57	September 18
78	November 14
79	December 4
84	December 13
86	December 13
Year of 1980	
8	February 8, 1980
10	February 21
65	November 6
****70	December 3
73	December 15
Year of 1981	
10	February 9, 1981
21	March 18
31	March 27
62	July 27
70	August 31
79	October 21
91	December 31
Year of 1982	
12	March 5, 1982
13	March 5
17	March 30
30	June 15
73	November 10
Year of 1983	
19	May 31, 1983
***45	October 11
48	October 26
58	November 7
Year of 1984	
16	March 27, 1984
25	May 30
35	June 26
45	July 12
74	November 21
75	November 21
Year of 1985	
59	August 5, 1985
76	December 2
80	December 6
96	December 31
Year of 1986	
5	April 29, 1986
22	July 8
73	December 8
80	December 22
82	December 30
Year of 1987	
1	February 2, 1987
9	March 5
13	March 23
16	April 20
29	June 30
40	July 6
58	August 5
61	August 5
Year of 1988	
11	March 9, 1988
33	May 27
34	June 8
46	July 11
49	July 11
50	July 11
58	August 19
65	November 4
73	December 8
77	December 8
Year of 1989	
14	March 14, 1989
29	May 15
38	June 28
55	July 25
80	November 8
81	November 8
91	December 6
100	December 27
103	December 27
Year of 1990	
23	June 7, 1990
38	July 12
65	November 14
Year of 1991	
33	May 23, 1991
48	July 17
49	July 17
54	July 17
55	July 17
62	July 17
72	July 23
99	December 24

Local Law	Approved by the Mayor
Year of 1992	
18	March 9, 1992
Year of 1993	
6	January 22, 1993
12	January 22
13	January 22
14	February 9
15	February 9
39	May 28
53	June 30
56	June 30
104	December 28
107	December 28
108	December 28
109	December 28
Year of 1995	
17	February 21, 1995
74	September 21
89	December 19
Year of 1996	
27	March 18, 1996
59	July 9
65	July 12
86	November 4
93	December 12
Year of 1997	
6	February 12, 1997
65	August 19
71	September 11
Year of 1998	
3	January 14, 1998
10	March 13
11	March 13
27	July 7
Year of 1999	
10	March 24, 1999
68	November 22
Year of 2000	
2	February 4, 2000
Year of 2001	
2	January 5, 2001
14	March 19
17	March 30
51	August 8
64	December 10
Year of 2002	
22	July 29, 2002
26	September 4
Year of 2003	
44	July 14, 2003
Year of 2004	
7	May 5, 2004
*26	June 24
32	July 12
**35	July 12

Effective date October 22, 2004.
****In full force and effect on January, 14, 2004.***
*****This provision applies "....to any major building (as such term is defined in the department's rules and regulations relating to the filing of site safety programs and the definition of site safety coordinators published in the City Record on July 21, 1983) where construction of the superstructure had not progressed beyond the fifteenth floor as of the effective date of this law...."***
******** " This local law….shall be deemed to have been in full force and effect from the first day of January, nineteen hundred seventy-seven…"***

EFFECTIVE DATES OF STATE LAWS

State Law	Effective Date
Laws of 1995	
Chapter 559	January 1, 1996
Laws of 2000	
Chapter 45	September 4, 2000

EFFECTIVE DATES OF BOARD OF STANDARDS AND APPEALS

BSA	Effective Date	
170-69-BCR……..	July 10	1969
247-70-BCR.....	June 22	1970
248-70-BCR.....	June 22	
249-70-BCR.....	June 22	
260-70-BCR.....	July 1	
393-71-BCR; 394; 395; 396;.....		1971
397; 398.....	June 29	
454-71-BCR.....	December 21	
731-71-BCR.....	December 14	
177-72-BCR.....	April 18	1972
181-72-BCR.....	April 18	
217-72-BCR.....	April 25	
218-72-BCR.....	June 20	
219-72-BCR.....	April 25	
239-72-BCR.....	May 9	
353-72-BCR.....	June 27	
(Amended March 11, 1975).....		
723-72-BCR.....	December 12	
747-72-BCR.....	January 9	1973
264-73-BCR.....	June 14	
302-73-BCR.....	June 19	
339-73-BCR.....	July 17	
341-73-BCR.....	July 17	

BSA	Effective Date
49-74-BCR	March 12 1974
213-74-BCR	June 4
149-75-BCR	May 6 1975
515-75-BCR	December 2
587-76-BCR	July 27 1976
281-77-BCR	July 19 1977
369-77-BCR	July 19
479-77-BCR	September 7
506-77-BCR	September 20
935-78-BCR	November 28 1978
71-79-BCR	February 20 1979
72-79-BCR	March 13
510-79-BCR	June 12
511-79-BCR	June 12
512-79-BCR	June 12
571-79-BCR	June 26
799-79-BCR	September 8
1101-79-BCR	November 27
1240-79-BCR	February 25
51-80-BCR	February 19 1980
142-80-BCR	June 17
390-80-BCR	June 10
493-80-BCR	May13
610-80-BCR	June 10
664-80-BCR	June 24
693-80-BCR	July 8
705-80-BCR	October 21
714-80-BCR	July 22
745-80-BCR	July 22
750-80-BCR	October 21
887-80-BCR	November 5
888-80-BCR	November 5
938-80-BCR	November 5
939-80-BCR	October 14
1014-80-BCR	November 25
1085-80-BCR	December 9
1155-80-BCR	January 6 1981
1156-80-BCR	January 6
308-81-BCR	June 16
425-81-BCR	July 14
798-81-BCR	November 4
1084-81-BCR	February 2 1982
253-82-BCR	June 15
252-82-BCR	June 22
385-82-BCR	August 10
913-82-BCR	January 18 1983
915-82-BCR	January 18
916-82-BCR	January 18
98-83-BCR	March 1

BSA	Effective Date	
1155-80-BCR	May 10	
427-83-BCR	June 14	
428-83-BCR	June 14	
633-83-BCR	September 13	
1045-83-BCR	December 6	
1050-83-BCR	December 6	
288-84-BCR	June 5	1984
289-84-BCR	May 22	
290-84-BCR	May 22	
695-84-BCR	September 11	
934-84-BCR	December 18	
208-85-BCR	March 19	1985
435-85-BCR	May 21	
678-85-BCR	October 1	
814-85-BCR	October 29	
260-86-BCR	April 22	1986
261-86-BCR	April 22	
262-86-BCR	April 22	
738-86-BCR	September 16	
739-86-BCR	September 16	
1076-86-BCR	January 27	1987
1077-86-BCR	January 27	
9-87-BCR	February 10	
17-87-BCR	February 10	
236-87-BCR	March 31	
237-87-BCR	March 31	
617-87-BCR	July 8	
946-87-BCR	December 22	
947-87-BCR	December 22	
82-88-BCR	March 1	1988
135-88-BCR	March 1	
373-88-BCR	May 3	
1025-88-BCR	September 27	
1341-88-BCR	December 6	
1342-88-BCR	December 6	
1343-88-BCR	December 20	
455-89-BCR	June 27	1989
886-89-BCR	December 12	
111-90-BCR	May 1	1990
213-90-BCR	September 11	
234-90-BCR	September 11	
242-90-BCR	September 11	
243-90-BCR	September 11	
310-90-BCR	January 22	1991
11-91-BCR	March 12	

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Title 26, Housing and Buildings
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SUBCHAPTER 1 GENERAL PROVISIONS
SUBCHAPTER 2 LICENSES
SUBCHAPTER 3 BUILDING CONSTRUCTION
SUBCHAPTER 4 REGULATION OF OUTDOOR SIGNS

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TITLE 26
HOUSING AND BUILDINGS

CHAPTER 1
DEPARTMENT OF BUILDINGS

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SUBCHAPTER 1
GENERAL PROVISIONS

§[641-1.0] 26-101 Definitions.-For the purposes of this chapter:
1. The term "multiple dwelling" shall mean such dwelling as defined by section four of the multiple dwelling law;
2. The term "building" shall mean any building, structure, premises, or part thereof;
3. The term "service equipment" shall mean equipment, and all components thereof, which provide sanitation, power, light, heat, ventilation, air conditioning, refuse disposal, fire-fighting, transportation or other facilities for buildings.
4. The term "commissioner" shall mean the city commissioner

of buildings.
5. The term "department" shall mean the city department of buildings.

§[641-2.0] 26-102 Seal; judicial notice.-
The commissioner may design and adopt a seal for the department, and cause the same to be used in the authentication of the orders and proceedings of the department, and for such other purposes as he or she may prescribe. The courts shall take judicial notice of such seal, and of the signature of the commissioner and the deputy commissioners of such department.

§[641-3.0] 26-103 Records in department.-
The department shall keep records of every building in the city. Such records shall be kept in the manner and form prescribed by the commissioner.

****§[641-4.0] 26-104 Complaint book**. -The department shall keep a general complaint book, or several such books, in which may be entered any complaint made by any person in reference to any building. Such entry shall include the name and residence of the complainant, the name of the person complained of, the date of the entry of the complaint and any suggested remedies. Except for entries of names and residences of the complainants, such book shall be open to public examination during the office hours of the department, subject to such regulations as the commissioner may prescribe. The commissioner shall cause all complaints to be investigated.
***** Local Law 91-1989.***

§[641-5.0] 26-105 Taxpayers' requests for institution of actions.- Taxpayers' requests for institution of actions for liens upon buildings shall be presented to the department.

§[641-6.0] 26-106 Proofs, affidavits and oaths. –
Proofs, affidavits and examinations as to any matter arising in connection with the performance of any of the duties of the department may be taken by or before the commissioner, or a deputy commissioner, or such other person as the commissioner may designate; and such commissioner, deputy or other person may administer oaths in connection therewith.

§[641-7.0] 26-107 Cooperation of other departments.-
Upon request of the commissioner, it shall be the duty of all departments to cooperate with the department of buildings at all times, and to furnish to such department such information, reports and assistance as the commissioner may require.

§[641-8.0] 26-108 Reports from different institutions and agencies. -
a. All dispensaries and hospitals in the city shall make weekly statements to the department as to the cases of sickness received in such hospital or treated in such dispensary from each building. Such statement shall show the location of such building by street and number, the nature of the sickness treated, whether the patient was an adult or child and the date of the treatment.
b. The police department shall furnish to the department a weekly statement of the number of arrests of persons living in such buildings. Such statement shall show the location of such building, by street and number, the offense with which the person is charged, the age and name of the offender, and such other information as the department may require. The commissioner shall prescribe and furnish blank forms for making such statements.
c. Such department may require reports and information of such facts relative to the condition of persons residing in such buildings as the commissioner may deem useful in carrying out the duties of the department. Such reports also may be required from all dispensaries, hospitals, charitable or benevolent societies, infirmaries, prisons and schools, and from the managers, principals and officers thereof. The managers, principals and officers of such institutions shall give such information promptly and shall make such reports, verbally or in writing, as the commissioner may require.

§[641-9.0] 26-109 Annual report. -The annual report of the department shall be published in book form for public information. Such report shall contain the statistics kept by the department.

§[641-10.0] 26-110 Publication of statistics and other data.- The commissioner may provide for the publicity of the papers, files, reports, records and the proceedings of the department whenever he or she deems it necessary for the public good.

§[642-1.0] 26-111 Uniforms and badges.- The commissioner may provide or designate a suitable uniform to be worn by inspectors. He or she shall also provide a metal badge with a suitable inscription thereon, and shall require that such badge shall be worn by the inspectors, officers and other employees of the department.

***§[642-2.0] 26-112 Falsely impersonating an officer.-**
Any person who falsely represents himself or herself as an officer, inspector or employee of the department, or a not-for-profit corporation performing services on behalf of the department pursuant to article twenty-seven of subchapter one of chapter one of title twenty-seven of the code, or as acting under the authority of the department or of such not-for-profit corporation, or who without authority uses, wears or displays a shield or other insignia or emblem such as is worn by such officer, inspector or employee, shall be guilty of a misdemeanor.
****Local Law 107-1993.***

§[642-3.0] 26-113 Subordinates; discipline of.- The commissioner shall have power to punish any employee, for

neglect of duty, or omission to properly perform his or her duty, or for violation of rules, or neglect or disobedience of orders, or incapacity or absence without leave, by forfeiting or withholding compensation for a specified time, or by suspension from duty with or without pay for a period of not exceeding thirty days.

§[642-4.0] 26-114 Certain outside work, employment and financial interests prohibited. -It shall be unlawful for any officer or employee of the department to be engaged in conducting or carrying on business as an architect, civil engineer, structural engineer, sanitary engineer, carpenter, plumber, iron worker, mason or builder, or any other profession or business concerned with the construction, alteration or equipment of buildings. It shall also be unlawful for such employees to be engaged in the manufacture or sale of automatic sprinklers, fire extinguishing apparatus, fire protection devices, fire prevention devices, devices relating to the means or adequacy of exit from buildings, or articles entering into the construction or alteration of buildings, or to act as agent for any person engaged in the manufacture or sale of such articles, or own stock in any corporation engaged in the manufacture or sale of such articles.

§[643a-1.0] 26-115 Notices and orders.-
The commissioner shall have the power to issue notices and orders for enforcing compliance with any law, rule or regulation in respect to any matters under the jurisdiction of the department, and for remedying any condition found to exist in, on or about any building, enclosure or premises, in violation of any law, rule or regulation in respect to any such matters. Each such notice or order issued by the commissioner shall have his or her signature affixed thereto; but the commissioner may authorize any subordinate to affix such signature.

§[643a-2.0] 26-116 Contents of notices and orders.- All notices and orders issued by the commissioner shall, in addition to the statement of requirements, contain a description of the building, premises or property affected; and except for such orders as may be served pursuant to section three hundred twenty-six of the multiple dwelling law, the notice or order shall be addressed to the owner, lessee or occupant of the building, premises or property affected. It shall be unnecessary to designate such owner, occupant or lessee by name in the notice or order; but the premises shall be designated in the address so that the premises may readily be identified.

§[643a-3.0] 26-117 Service of notices and orders. - Except for such orders as may be served pursuant to section three hundred twenty-six of the multiple dwelling law, service of notices and orders issued by the commissioner may be made: (a) by delivery of a copy thereof personally to the owner, lessee or occupant of the building, premises or property affected thereby; or (b) by delivery of a copy thereof personally to any person of suitable age and discretion in charge or apparently in charge of such building, premises or property, or any building work being executed thereon; or (c) by posting a copy thereof in a conspicuous place upon such building, premises or property and mailing a copy thereof to the owner of such building, premises or property at his or her last known address, in which latter case the service shall be deemed to have been effected three days after the date of mailing.

§[643a-4.0] 26-118 Stop Work notices and orders.- Notwithstanding the provisions of sections 26-115 through 26-117 of this subchapter, a notice or order to stop work may be issued by the commissioner, or his or her authorized representative, at any time when it is found that building work is being executed in violation of the provisions of any law, rule or regulation enforceable by the department, or in a dangerous or unsafe manner.
Such notice or order may be given orally or in writing to the owner, lessee or occupant of the property involved, or to the agent of any of them, or to the person or persons executing the work and may require all persons in and about the building or premises to vacate the same forthwith, and also require such work to be done as, in the opinion of the commissioner, may be necessary to remove any danger therefrom. The police department shall, upon the request of the commissioner, assist the department in the enforcement of this section.
Conditions warranting issuance of a stop work order include but are not limited to, the failure to have a construction site safety coordinator present in the course of on-going construction at those sites where department rules and regulations require that a construction site safety coordinator be designated and present; the failure to erect a sidewalk shed (or portions thereof) as required by section 27-1021 of the code, or the removal of a sidewalk shed or portions thereof, when such sidewalk shed is still required pursuant to such section.
In addition to the penalties provided for in this subchapter, failure to comply with a stop work order shall be subject to the payment of a penalty in the sum of five hundred dollars for each day there is non-compliance, to be recovered in a civil action brought in the name of the commissioner; provided, however, this shall not apply to any work performed to remedy an unsafe or hazardous condition.

§[643a-5.0] 26-119 Lis pendens.- The commissioner, after issuing any notice or order, or in any subsequent action or proceeding, may also file a notice of lis pendens, consisting of a copy of the notice or order issued by the commissioner and a notice of the action or proceeding instituted or to be instituted thereon.

§[643a-6.0] 26-120 Enforcement proceedings. -
a. Upon the violation of any law, rule or regulation enforceable by the department, or the failure to comply

with any order issued by the commissioner thereunder, the commissioner may, in his or her discretion, request the corporation counsel to institute legal proceedings to restrain, correct or abate such violation, or to compel compliance with such order; and the corporation counsel shall thereupon institute such actions or proceedings as may be necessary and appropriate for such purposes.

b. Such actions and proceedings may be instituted by the corporation counsel in the name of the city in any court of civil jurisdiction in the city and shall be given preference over pending causes therein. In such actions or proceedings, the city may apply for restraining orders preliminary injunctions or other provisional remedies, with or without notice; and no undertakings shall be required as a condition to the granting or issuing of any such order, injunction or remedy, or by reason thereof.

c. In no case shall the department, or any officer or employee thereof, be liable for costs in any such action or proceeding; and officers and employees of the department, acting in good faith and without malice, shall be free from liability for acts done in any such action or proceeding.

d. Any judgment rendered in any such action or proceeding shall be and become a lien upon the premises involved and named in the complaint in such action or proceeding, the lien to date from the time of filing a notice of lis pendens in the office of the clerk of the county in which the premises is located, and to have priority before any mortgage or other lien existing prior to such filing, except tax and assessment liens.

§[643a-7.0] 26-121 Certificate of commissioner; presumptive evidence. -In any action or proceeding founded upon a claim by the commissioner that any law, rule or regulation enforceable by the department has been violated, or that a lawful order issued by him or her has not been complied with, a certificate in writing by the commissioner, or his authorized representative shall be presumptive evidence of any matter stated therein.

***§[643a-8.0] 26-122 Non-compliance with order and illegal places of assembly; punishment; penalty.-**Every person who owns or operates a place of assembly without a current permit or emergency lighting as required by law, or who shall fail to comply with an order issued by the commissioner except an order issued pursuant to section 26-126.2; or who shall knowingly violate any requirement of any notice or order of the commissioner, shall be guilty of a misdemeanor, and, upon conviction thereof, shall be punishable by a fine not to exceed five thousand dollars, or by imprisonment not to exceed six months, or both. Such person shall also be subject to the payment of a penalty of not more than five thousand dollars to be recovered in a civil action brought in the name of the city in any court of competent jurisdiction or in a proceeding before the environmental control board.

Local Law 80-1985, language juxtaposed per Ch. 907-1985.

§[643a-9.0] 26-123 Non-compliance with orders; execution of work by department. -Upon the failure to comply with any order of the commissioner within the time limited thereby, and subject to the provisions of article eight of subchapter three of this chapter, any work required to be executed by such order may be executed by the commissioner through the officers, agents or contractors of the department; and the city shall be reimbursed promptly for all costs and expenses of such work. Such costs and expenses shall become a lien upon the premises involved and named in the commissioners order, from the time of filing of a notice of lis pendens as provided in section 26-119 of this subchapter; and such lien shall be enforceable in accordance with the mechanics' lien laws applicable in the city.

***§[643a-10.0] 26-124 False statements in certificates, forms, written statements, applications, reports or certificates of correction. -**

a. Any person who shall knowingly make a false statement or who shall knowingly falsify or allow to be falsified any certificate, form, signed statement, application, report or certification of the correction of a violation required under the provisions of this code or any rule or regulation of any agency promulgated thereunder, shall be guilty of a misdemeanor and, upon conviction thereof, shall be punished by a fine of not less than one thousand dollars nor more than five thousand dollars, or by imprisonment not to exceed six months, or both.

b. Such person shall also be liable for a civil penalty of not less than one thousand dollars nor more than five thousand dollars which may be recovered in a proceeding before the environmental control board. In any such proceeding which relates to a false statement in a certification filed pursuant to section 26-126.2, if an inspection made within six months after the filing of the certification finds a condition constituting a violation which is the same as the condition described in the notice of violation with respect to which such certification was filed, there shall be a rebuttable presumption that the condition described in such notice of violation continued and is the same condition found in the inspection.

[†]c. The provisions of this section shall apply with respect to any certificate, form, signed statement, application or report submitted to a not-for-profit corporation performing services on behalf of the department pursuant to article twenty-seven of subchapter one of chapter one of title twenty-seven of the code.

Local Law 80-1985, language juxtaposed per Ch. 907-1985.

[†]***Local Law 107-1993.***

****§[643a-11.0] 26-125 Violations of building laws: punishments; penalty. -**

a. Except as otherwise provided in subdivisions b and f of

this section, section 26-126 or 26-248 of this title, every person who shall violate any of the provisions of any laws, rules or regulations enforceable by the department or who shall knowingly take part or assist in any such violation shall be guilty of an offense, and upon conviction thereof shall be punishable by a fine of not more than five thousand dollars. Such person shall also be subject to the payment of a penalty of not more than five thousand dollars to be recovered in a civil action brought in the name of the city in any court of record in the city.

b. Notwithstanding any other law, rule or regulation, and in addition to any other penalties provided in this code or elsewhere, any person who shall convert, or knowingly take part or assist in the conversion or permit the maintenance of the conversion of a residence, which is legally approved for occupancy as a one-family, or two-family dwelling, to a dwelling for occupancy by four or more families shall be guilty of a misdemeanor and upon conviction thereof shall be subject to imprisonment for a period not to exceed one year and by a fine for each dwelling unit added of not less than one thousand dollars nor more than five thousand dollars for the first offense, not less than two thousand five hundred dollars nor more than fifteen thousand dollars for a second offense and not less ten thousand dollars nor more than twenty thousand dollars for a third or subsequent offense.

c. In addition to the penalties provided in subdivision a of this section, any owner who shall fail to file a report pursuant to the provisions of section 27-228.5 or 27-1000 of the code shall be liable for a civil penalty of not less than twenty-five dollars nor more than one hundred dollars per day not to exceed one thousand dollars commencing with the date after which such report was required to be filed with the department and terminating on the date of the filing of such report with the department.

d. In addition to the penalties provided in subdivision a of this section, any owner who shall fail to file a report pursuant to the provisions of section 27-793 of this code shall be liable for a civil penalty of not less than twenty-five dollars nor more than fifty dollars per day, commencing with the day following the date on which such report was required to be filed with the department and terminating on the date of the filing of such report with the department, provided that the maximum amount of such penalty shall not exceed one thousand five hundred dollars for any report for a building greater than six stories and five hundred dollars for any report for a building of six stories or less.

*e. In addition to the penalties provided in subdivision a of this section and notwithstanding the provisions of subdivision d of this section, any owner who files a report pursuant to the provisions of section 27-793 of this code after the date such report was required to be filed with the department but who provides evidence in accordance with rules promulgated by the commissioner that the boiler was inspected in accordance with the provisions of subdivision b of section 27-793 of this code shall only be liable for a civil penalty of fifty dollars for any report for a building six stories or less and one hundred fifty dollars for any report for a building greater than six stories.

f. As an alternative to the penalties provided in subdivision b of this section, any person who violates the provisions of such subdivision may be subject to the payment of a civil penalty of one thousand dollars per day for each dwelling unit added, commencing on the date such notice of violation was issued and terminating on the date of the filing of a valid certification that the condition constituting the violation has been corrected or the date of final adjudication of the violation, whichever occurs first, to be recovered in a civil action brought in the name of the city in any court of record in the city or returnable to an administrative tribunal of competent jurisdiction. There shall be a rebuttable presumption that the violation continued to exist from the date of the issuance of a notice of violation until the date of adjudication or proof of correction to the satisfaction of the commissioner.

†g. (i) Notwithstanding any other provision of law, where a notice of violation or summons is issued on or after July fourteen, two thousand three for a violation of section 27-147 of this code or paragraph (a) of section 32-653 or paragraph (a) of section 42-542 of the zoning resolution, or any provision amending, replacing or supplementing such sections of the zoning resolution, for an awning in existence on such date, no penalty may be imposed, nor may injunctive relief be sought to restrain such violation, during the period commencing on such date and ending on the later of (A) July fourteen, two thousand five, and (B) the date established by the commissioner in accordance with paragraph (iii) of this subdivision as the date of the conclusion of a program of education of the public regarding amendments of section 32-653 or 42-542 of the zoning resolution or the replacement or supplementation of such sections. Where the person to whom the violation was issued cures such violation during such period, no penalty may subsequently be sought or imposed for such violation.

(ii) The provisions of paragraph i of this subdivision shall not apply where such awning creates an imminent threat to public health or safety.

(iii) The commissioner shall develop a program to educate the public regarding amendments, adopted after the enactment of the local law that added this paragraph, of section 32-653 or 42-542 of the zoning resolution or the replacement or supplementation of such sections. Such program shall be implemented as

soon as practicable following the adoption of such amendments, replacement or supplementation, and shall continue for a period of time deemed sufficient by the commissioner to provide reasonable notice to the public of the requirements imposed by such amendments, replacement or supplementation. The date of the conclusion of such program shall be established by the commissioner by rule which date shall be no later than November thirtieth, two thousand five.

*****Local Law 65-1997; Local 62-1991; Local Law 80-1985, language juxtaposed per Ch. 907-1985.***

****Local Law 27-1996.***

†Local Law 35-2004; Local Law 44-2003.

*****§26-125.1 Violation of building laws; punishment and penalties for illegal operation of cranes and derricks.-**

a. Any person who:

(1) shall operate a crane or derrick as such terms are defined in section 27-232 of this code without first having obtained a license required to operate such crane or derrick, except for learners operating such crane or derrick in the presence of and under the direct supervision of a licensed operator, pursuant to reference standard 19-2; or (2) is in charge of, in control of, or is either supervising or directing construction activities at a construction site, and who (i) either permits or authorizes the operation of a crane or derrick by a person who he or she either knows or should know does not have a license to operate such equipment, except for learners operating such crane or derrick in the presence of and under the direct supervision of a licensed operator, pursuant to reference standard 19-2; or (ii) either permits or authorizes the operation of a crane or derrick without having first obtained all necessary approvals and permits for the operation of the equipment, or for the work to be performed, shall be guilty of a class B misdemeanor and upon conviction thereof shall be subject to a civil penalty of not more than twenty-five thousand dollars in addition to a sentence not to exceed ninety days.

b. Any person who:

(1) shall operate a crane or derrick as such terms are defined in section 27-232 of this code without first having obtained a license required to operate such crane or derrick, except for learners operating such crane or derrick in the presence of and under the direct supervision of a licensed operator, pursuant to reference standard 19-2; (2) is in charge of, in control of, or is either supervising or directing construction activities at a construction site, and who (i) either permits or authorizes the operation of a crane or derrick by a person who he or she either knows or should know does not have a license to operate such equipment, except for learners operating such crane or derrick in the presence of and under the direct supervision of a licensed operator, pursuant to reference standard 19-2; or (ii) either permits or authorizes the operation of a crane or derrick without having first obtained all necessary approvals and permits for the operation of the equipment, or for the work to be performed, where such operation results in serious physical injury to another person or persons, as such term is defined in section 10.00 of the penal law, shall be guilty of a class A misdemeanor and upon conviction thereof shall be subject to a civil penalty of not more than one hundred thousand dollars in addition to a sentence not to exceed six months.

c. There shall be no liability under the provisions of this section for the operation of a crane or derrick by any person who has been duly licensed by the department to operate such crane or derrick, or by a learner who operates such crane or derricks in the presence of and under the direct supervision of such person, during the thirty calendar days subsequent to the expiration of such person's license; provided, however, that, for one year after the effective date of this section, there shall be no liability under the provisions of this section for the operation of a crane or derrick by any person who has been duly licensed by the department to operate such crane or derrick, or by a learner who operates such crane or derrick in the presence of and under the direct supervision of such person, during the one year period subsequent to the expiration of such person's license.

d. For purposes of this section, the terms "crane" and "derrick" shall have the meaning as ascribed by section 27-232 of this code.

******Local Law 99-1991.***

§[643a-12.0] 26-126 Violations of zoning resolutions. -

a. The owner, lessee, or occupant of any building in which a violation of the zoning resolution has been committed or shall exist, or the agent, architect, builder, contractor, or any other person who commits, takes part or assists in any such violation or who maintains any building in which any such violation shall exist, shall be guilty of a misdemeanor, and where the violation shall be for the construction, alteration, use or occupancy of any building, structure or area set forth within use groups five through eighteen inclusive in a zoning district where such use is not permitted, the person convicted thereof shall be punished by a fine of not less than two hundred fifty dollars nor more than one thousand dollars for the first offense, not less than five hundred dollars nor more than one thousand dollars for a second offense and five thousand dollars for a third, and all subsequent offenses, or for any such offense by imprisonment for not more than ninety days, or by both fine and imprisonment.

b. Any such person, having been served with an order

to remove any such violation, who shall fail to comply with such order within ten days after such service or who shall continue to violate any provision of the zoning resolution in the respect named in such order, shall be guilty of a misdemeanor.

c. In addition to the foregoing remedies, the city may maintain an action for an injunction to restrain any violation of such zoning resolution.

†d. (i) Notwithstanding any other provision of law, where a notice of violation or summons is issued on or after July fourteen, two thousand three for a violation of section 27-147 of this code or paragraph (a) of section 32-653 or paragraph (a) of section 42-542 of the zoning resolution, or any provision amending, replacing or supplementing such sections of the zoning resolution, for an awning in existence on such date, no penalty may be imposed, nor may injunctive relief be sought to restrain such violation, during the period commencing on such date and ending on the later of (A) July fourteen, two thousand five, and (B) the date established by the commissioner in accordance with paragraph (iii) of this subdivision as the date of the conclusion of a program of education of the public regarding amendments of section 32-653 or 42-542 of the zoning resolution or the replacement or supplementation of such sections. Where the person to whom the violation was issued cures such violation during such period, no penalty may subsequently be sought or imposed for such violation.

(ii) The provisions of paragraph i of this subdivision shall not apply where such awning creates an imminent threat to public health or safety.

(iii) The commissioner shall develop a program to educate the public regarding amendments, adopted after the enactment of the local law that added this paragraph, of section 32-653 or 42-542 of the zoning resolution or the replacement or supplementation of such sections. Such program shall be implemented as soon as practicable following the adoption of such amendments, replacement or supplementation, and shall continue for a period of time deemed sufficient by the commissioner to provide reasonable notice to the public of the requirements imposed by such amendments, replacement or supplementation. The date of the conclusion of such program shall be established by the commissioner by rule which date shall be no later than November thirtieth, two thousand five.

†Local Law 35-2004; Local Law 44-2003.

***§[643a-12.1] 26-126.1 Environmental control board; civil penalties. -**

a. In addition to or as an alternative to any of the remedies and penalties provided in subchapters one, two and three of chapter one of this title or chapter one of title twenty-seven any person who shall violate or fail to comply with any of the provisions of subchapters one, two and three of chapter one of this title or chapter one of title twenty-seven or the rules and regulations promulgated hereunder shall, except as otherwise specifically provided in subdivision c of section 26-126.2, be liable for a civil penalty which may be recovered in a proceeding before the environmental control board. Such proceeding shall be commenced by the service of a notice of violation returnable before the board. The provisions of sections 26-244, 26-246 and 26-248 relating to notification prior to the commencement of judicial proceedings shall not apply to the recovery of civil penalties in proceedings before the environmental control board.

Except as otherwise specifically provided, such civil penalty shall be determined in accordance with the following schedule:

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	First Violation		Second or Subsequent Violation by the respondent of the same provision of law, rule or regulation and, if the respondent is the owner, agent, lessee or other person in control of the premises with respect to which the violations occurred, at the same premises (all violations committed within an eighteen month period).	
	Minimum (Dollars)	Maximum (Dollars)	Minimum (Dollars)	Maximum (Dollars)
27-118.1……..	250	2,500	1,000	10,000
27-508.3(b)……..…….	0	300	350	1,000
Any Provision of subchapter 19 of chapter 1 of title 27…….	0	5,000	0	10,000
Any provisions of subchapers 1,2, and 3 of chapter 1 of this title and all other provisions of chapter 1 of title 27 or any provisions of the zoning resolution and related rules and regulations……...	0	2,500	0	10,000

(Reference to a section of the code is intended to include any rules and regulations related to such section).

b. For the purposes of the multiple offense schedule, if the respondent is the owner or agent of the building or structure with respect to which the violation occurred or a lessee of the entire building or structure, the term premises shall mean the entire building or structure. If the respondent is the lessee or person in control of a part of such building or structure, the term premises shall mean that part of such building or structure leased to or under the control of the respondent.

c. Notwithstanding any other provision of this section, if the respondent is the owner or agent of the building or structure with respect to which the violation occurred or a lessee of the entire building or structure, a prior violation by the same respondent shall not serve as a predicate for purposes of the multiple offense schedule set forth in this section if the prior violation or the violation for which penalties are to be imposed occurred within an area of the building or structure which, at the time of the violation, was leased to and under the control of a person other than the respondent, except that this provision shall not apply if both the prior violation and the violation for which penalties are to be imposed occurred within areas leased to and under the control of the same lessee. In any proceeding before the board, the burden of proof with respect to this exception shall be upon the respondent.

d. The commissioner may, by rule or regulation, establish a schedule of civil penalties providing a maximum penalty for the violation of each separate provision of law, rule or regulation based on the degree of seriousness of the violation. Such maximum penalties shall not exceed the maximum penalties for such violations set forth in this section.

e. In addition to the penalties set forth in subdivision a of this section: (i) any individual who shall violate or fail to comply with the provisions of section 27-118.1 of this code shall also be subject to the payment of a penalty of not less than fifty dollars nor more than one hundred dollars per day, for each dwelling unit added, commencing on the date such notice of violation was issued and terminating on the date of the filing of a certification that the condition constituting the violation has been corrected or the date of final adjudication of the violation by the environmental control board, whichever occurs first, and there shall be a rebuttable presumption that the violation continued to exist from the date of the issuance of the notice of violation until the date of the filing of the certification or final adjudication; and (ii) a third or subsequent violation of section 27-118.1 of this code by the same respondent and, if the respondent is the owner, agent, lessee or other person in control of the premises with respect to which the violation occurred at the same premises (all violations committed within an eighteen month period), shall result in a civil penalty of not less than five thousand dollars nor more than fifteen thousand dollars.

Local Law 3-1998; Local Law 65-1997; Local Law 80-1985, language juxtaposed per Ch. 907-1985.

** **§[643a-12.2] 26-126.2 Environmental control board proceedings; order to certify correction.**

***a. Except as otherwise provided in subdivision e, f, i and j of this section whenever the commissioner serves a notice of violation such notice shall include an order which requires the respondent to correct the condition constituting the violation and to file a certification with the department that the condition has been corrected. Such order shall require that the condition be corrected within thirty days from the date that the order is issued and that certification of the correction of the condition shall be filed with the department in a manner and [*sic*] form and within such further period of time as shall be established by rule or regulation of the department.

b. If the board finds, upon good cause shown, that the

respondent cannot correct the violation within the period specified in subdivision a, it may, with the concurrence of the commissioner, postpone the period for compliance with such order upon such terms and conditions and for such period of time as shall be appropriate under the circumstances.

c. For violations which are subject to the penalties for a first violation as set forth in section 26-126.1 of this title, if the respondent complies with the order issued pursuant to subdivision a of this section within the time set forth in such subdivision, there shall be no civil penalty for such first violation. Such violation may however serve as a predicate for purposes of the multiple offense schedule set forth in section 26-126.1 of this title.

d. In any proceeding before the environmental control board, if the board finds that the commissioner has failed to prove the violation charged, it shall notify the commissioner and the order requiring the respondent to correct the condition constituting the violation shall be deemed to be revoked.

e. Subdivisions a, b, c and d of this section shall not apply to environmental control board proceedings to impose penalties for violations of section 26-122 (except violations relating to the operation of an illegal place of assembly), section 26-124 and section 26-126.3 of this title or to impose penalties for any violation which the commissioner in his [or her]** discretion determines to be hazardous.

*****Copy in brackets not enacted but probably intended.***

*f. A notice of violation alleging a violation of subdivision a or b of section 27-508.3 of this code shall include an order (i) directing the respondent to correct the condition constituting the violation within thirty days from the date that the order is issued and to file a certification that the condition has been corrected with the department in a manner and form and within such further period of time as shall be established by rule of the department or (ii) directing a respondent who is a record owner of a premises on which a tobacco product advertisement is placed or maintained in violation of subdivision a of section 27-508.3 of this code but who has not posted or placed such advertisement or has not directed, caused or contracted for the posting or placing of such advertisement by a servant, agent, employee, contractor or other individual under such record owner's control, to notify, within thirty days from the date the notice of violation alleging a violation of subdivision a of section 27-508.3 of this code was issued, the person who posted or placed such advertisement or who directed, caused or contracted for the posting or placing of such advertisement, by certified mail of the notice of violation, and to send, by certified mail, a copy of such notification to the department. A record owner shall not be deemed to have directed, caused or contracted for the posting or placing of a tobacco product advertisement by a servant, agent, employee, contractor or other individual under such record owner's control unless the record owner retains the right to cause the content of an advertisement to be changed. A general "compliance with laws" provision in a lease or contract shall not constitute such a right for purposes of this subdivision. A notice of violation issued pursuant to subdivision a or b of section 27-508.3 of this code shall also contain a statement that any hearing for a third or subsequent violation of subdivision a or b of section 27-508.3 by a wholesale or retail dealer of cigarettes shall also constitute a hearing for the revocation of a license issued to such wholesale dealer pursuant to section 11-1303 of this code or to such retail dealer pursuant to section 20-202 of this code, where the wholesale or retail dealer of cigarettes is found to be in violation.

***g. Where the respondent receives a notice of violation of subdivision a or b of section 27-508.3 of this code and the respondent complies with item (i) of subdivision f of this section, there shall be no civil penalty for such violation; provided, however, where such violation is a first violation, such violation may serve as a predicate for purposes of the multiple offense schedule as set forth in section 26-126.1 of this chapter and for purposes of revoking a license pursuant to subdivision k of this section.

***h. Where the respondent receives a notice of violation of subdivision a of section 27-508.3 of this code and the respondent is a record owner of premises who complies with item (ii) of subdivision f of this section, the notice of violation issued to such record owner shall be dismissed and shall not serve as a predicate for purposes of the multiple offense schedule as set forth in section 26-126.1 of this chapter.

***i. Where a respondent receives a notice of violation alleging a violation of subdivision a or b of section 27-508.3 of this code, and such respondent establishes that the school building, playground, amusement arcade, child day care center, or youth center that is within one thousand feet of the respondent's building, structure or premises opened, or was authorized or licensed by, or received a permit from a city or state, or certified to the department as required pursuant to subdivision o of section 27-508.2 of this code after the date such respondent placed or caused to be placed, maintained or caused to be maintained the tobacco product advertisement that is the subject of the alleged violation on such respondent's building, structure or premises, then upon the respondent so establishing within thirty days of the date of issue of the notice of violation, the environmental control board shall grant an adjournment in contemplation of dismissal. Where the respondent corrects the condition constituting the violation and certifies such correction to the department (i) within ninety days of the issuance of such adjournment in contemplation of dismissal of a notice of violation of subdivision a of section 27-508.3 or (ii) within thirty days of the granting of such adjournment in contemplation of dismissal of a notice of violation of subdivision b of section 27-508.3, in a manner and form as shall be established by rule of the department, the notice of violation shall be dismissed and shall not serve

as a predicate for purposes of the multiple offense schedule as set forth in section 26-126.1 of this chapter or for purposes of revoking a license pursuant to subdivision k of this section.

***j. Where the respondent receives a notice of violation of section 27-508.5 of this code, the respondent shall be liable for a civil penalty as set forth in section 26-126.1 of this chapter and for purposes of revoking a license pursuant to subdivision k of this section.

*k. In addition to the penalties provided in subdivision f of this section, where a wholesale or retail dealer of cigarettes is found liable for a third or subsequent violation, within an eighteen-month period, the license issued to such wholesale dealer of cigarettes pursuant to section 11-1303 of this code, or to such retail dealer of cigarettes pursuant to section 20-202 of this code, shall be revoked.

***Local Law 3-1998.*

***Local Law 80-1985, language juxtaposed per Ch. 907-1985.*

*** Local Law 2-2000;Local Law 3-1998.***

*** §[643a-12.3] 26-126.3 Civil penalty for failure to certify the correction of a violation.** - a. Any person who shall fail to comply with an order of the commissioner issued pursuant to subdivision a of section 26-126.2 of this title within the time specified in such subdivision or within such further period of time as may be provided by the environmental control board pursuant to subdivision b of section 26-126.2 of this title, in addition to the penalties which may be imposed for the violation pursuant to section 26-126.1 of this title be liable for a civil penalty of not more than five thousand dollars for each violation for which there has been a failure to comply with such order. Such civil penalty may be recovered in a proceeding before the environmental control board.

b. For the purposes of this section, if the environmental control board finds that a respondent has knowingly made false statements relating to the correction of a violation in a certification filed pursuant to section 26-126.2 of this title such certification as to correction shall be null and void and the penalties set forth in this section may be imposed as if such false certification had not been filed with and accepted by the department.

Local Law 80-1985, language juxtaposed per Ch. 907-1985.

***§[643a-12.4] 26-126.4 Limitations on power of commissioner to designate administrative code provisions which may be enforced by the environmental control board.-** Notwithstanding any other provision of law, the commissioner may not designate the following provisions of the administrative code for enforcement by the environmental control board:

(1) Paragraph (6) or (7) of subdivision (c) of section 27-339.
(2) Subdivision (c) of section 27-353.
(3) Section 2-4 or 4-4 of building code reference standard RS13-1.
(4) Paragraph (12) of subdivision (f) of section 27-972.
(5) Paragraph (10) of subdivision (g) of section 27-972.
(6) Subdivision (c) of section 27-975.
(7) Subdivision (c) of section 27-989.
(8) Section 27-228.
(9) Any provision of the administrative code specified in section 15-232 of such code.

Ch. 349, Laws of 1990; Local Law 80-1985, language juxtaposed per Ch. 907-1985. Sub.10-Local Law 3-1998, repealed by Local Law 14-2001.

***26-126.5 Enforcement of environmental control board judgements against owners for certain building code violations. -**

a. Notwithstanding any provision of law to the contrary, an environmental control board judgement against an owner for a building code violation with respect to (i) a private dwelling, (ii) a wooden-framed single occupancy multiple dwelling, or (iii) a dwelling with a legal occupancy of three or fewer dwelling units shall constitute a tax lien on the property named in the violation with respect to which such judgement was rendered , as hereinafter provided.

b. Such liens shall be entered and enforced as follows:

(i) There shall be filed in the office of the department a record of all such unpaid judgements. Such records shall be kept by tax lot and block number and shall be acccessible to the public during business hours. An entry of a judgment on the records of the department shall constitute notice to all parties.

(ii) All such unpaid judgments shall constitute a lien upon the property named in the violation with respect to which such judgment was rendered when the amount thereof shall have been definitely computed as a statement of account by the department, and the department shall cause to be filed in the office of the city collector an entry of the account stated in the book in which such charges against the property are to be entered. Such lien shall have a priority over all other liens and encumbrances except for the lien of taxes and assessments. However, no lien created pursuant to this section shall be enforced against a subsequent purchaser in good faith or mortgagee in good faith unless the requirements of paragraph (i) of this subdivision are satisfied.

(iii) A notice thereof, stating the amount due and the nature of the charge, shall be mailed by the city collector within five days after such entry to the last known address of the person whose name appears on the records in the office of the city collector as being the owner or agent of the property or as the person designated by the owner to receive tax bills or , where no name appears, to the property , addressed to either the “owner” or the “agent’.

(iv) Such notice mailed by the city collector pursuant to this section shall have stamped or printed thereon a reference to this section.

(v) If such charge is not paid within thirty days from the date of entry, it shall be the duty of the city collector to receive interest thereon at the same rate as unpaid real property taxes, to be calculated to the date of payment from the date of entry.

(vi) Such charge and the interest thereon shall continue to be, until paid, a lien on the property. Any remedy or procedure available for the enforcement of tax liens against such property, including, but not limited to, any sale of a tax lien or any foreclosure of a tax lien, shall be available with respect to such tax lien. In addition, such tax lien may be satisfied in accordance with the provisions of section thirteen hundred fifty-four of the real property actions and proceedings law.
(vii) In any proceeding to enforce or discharge a lien created pursuant to this section, the validity of the lien shall not be subject to challenge based on the lawfulness of the judgment, except as provided in this section.
(viii) No such challenge may be made except by (1) the owner of the property or (2) a mortgagee or lienor whose mortgage or lien would, but for the provisions of this section, have priority over the department's lien.
c. Notwithstanding the foregoing provisions, no such judgement shall be entered and enforced as a tax lien against any property unless at the time of the issuance of the notice of violation a copy of such notice was also served on all mortgagees and lienors of record of such property by mail addressed to the recorded addresses of such mortgagees and lienors.
d. The procedures provided in this section for the enforcement of environmental control board judgements against owners shall be in addition to any other methods provided under any other provision of law for the enforcement of such judgements.
Chapter 45, Laws of 2000.

** **§[643a-13.0] 26-127 Dangerous buildings, places and things; nuisance; order to vacate building; expenses. -**
a. Whenever any building, excavation, business, pursuit, matter or thing, or the lot on which it is situated, or the plumbing, sewerage, drainage, light or ventilation thereof is, in the opinion of the commissioner, in a condition or in effect dangerous or detrimental to life or health, the commissioner may declare that the same, to the extent that he or she may specify, is a public nuisance and he or she may order the same to be removed, sealed, abated, suspended, altered or otherwise improved or purified. The commissioner may order or cause any excavation, building, sewer, plumbing, pipe, passage, ground, matter or thing or the lot on which it is situated to be purified, cleansed, disinfected, removed, altered, repaired or improved. Any building, structure, place or premises perilous to life or property by reason of the nature or condition of its contents, its use, the overcrowding of persons therein, defects in its construction, or deficiencies in fire alarm, or fire extinguishing equipment or fire escape equipment, or by reason of any condition in violation of law or order of the commissioner, is a public nuisance within the meaning of the code and the penal law. The commissioner is empowered to abate any such public nuisance.
b. In case any order to remedy a condition imminently perilous to life or property issued by the commissioner or the department is not complied with, or the commissioner certifies in writing than an emergency exists requiring such action, he or she may order and immediately cause any building, structure, place or premises (i) to be vacated; and, also, if the commissioner determines such action is necessary to the preservation of life and safety, (ii) to be sealed, secured and closed; provided, however, that the commissioner shall not order sealed, secured and closed any dwelling unit or other space lawfully used for residential purposes unless such dwelling unit or other space is sealed pursuant to article eight of subchapter three of chapter one of title twenty-six of the code.
c. All orders issued pursuant to this section shall be posted upon the premises. Immediately upon the posting of an order upon the premises, officers and employees of the police department, the department, and other authorized officers and employees of the city shall immediately act upon and enforce such order. The police department shall provide all reasonable assistance to the department and other authorized officers and employees necessary to carry out the provisions of this section.
d. For the purpose of this section, "sealed" and "sealed, secured and closed" shall mean the use of any means available to render the building, structure or part thereof inaccessible, including but not limited to the use of a padlock or cinder blocks.
e. (i) Any order to seal, secure and close issued pursuant to item (ii) of subdivision b of this section shall contain notice of the opportunity for a hearing with respect to such order to determine if the order was properly issued in accordance with the provisions of this section. Such hearing shall be conducted by the commissioner, or in the commissioner's discretion, by the office of administrative trials and hearings or the environmental control board. If the matter is referred to such office or board, the hearing officer shall submit his or her findings of fact and a recommended decision to the commissioner. The hearing shall be held within three business days after the receipt of the written request of an owner, lessor, lessee, or mortgagee for such hearing and the commissioner shall render a decision within three business days after such hearing is concluded.
(ii) Any order issued pursuant to this section shall be served in accordance with section 26-117 of the code and, in addition, shall be mailed to the record owner of such premises and any record mortgagee of such premises at the address for such person as set forth in the recorded instrument and to the person designated as owner or agent of the building or designated to receive real property tax or water bills for the building at the address for such person contained in one of the files compiled by the department of finance for the purpose of the assessment or collection of real property taxes and water charges or in the file compiled by the department of finance from real property transfer forms filed with the city register upon the sale or transfer of real property. A copy shall also be

filed with the county clerk of the county in which such premises are located. Such filing shall be notice of the order to any subsequent owner and such owner shall be subject to such order

f. An order issued pursuant to this section shall not be rescinded unless the owner, lessor, lessee or mortgagee seeking such rescission provides assurance, in a form satisfactory to the commissioner, that the conditions which caused the issuance of such order have been corrected and will not reoccur. If such order is rescinded, upon the request of the owner, lessor, lessee or mortgagee, the commissioner shall provide a certified copy of such rescission, which may be filed with the county clerk of the county in which such premises are located.

g. Expenses of enforcing orders. The expenses attending the execution of any and all orders duly made by the department shall respectively be a several and joint personal charge against each of the owners or part owners, and each of the lessees and occupants of the building, structure, enclosure, place or premises to which such order relates, and in respect to which such expenses were incurred; and also against every person or body who was by law or contract bound to do that in regard to such building, structure, enclosure, place or premises which such order requires. Such expenses shall also be a lien on all rent and compensation due, or to grow due, for the use of any building, structure, place or premises, or any part thereof, to which such order relates, and in respect to which such expenses were incurred.

h. The commissioner shall give written notice of the closing of any building, structure, enclosure, place or premises pursuant to this section, and any subsequent actions taken with respect thereto, as soon as practicable, to (i) the borough president of the borough within which the closing has occurred; (ii) the council member representing the district within which the closing has occurred; and (iii) the local community board. On January first of each year, the commissioner shall submit a report to the council, setting forth the number of closings made in the previous year, the locations of such closings, and the nature and use of the premises closed. The commissioner shall, in addition, as soon as practicable after a building, structure, enclosure, place or premises has been closed, make and publish a report of said closing in a manner calculated to quickly notify the local community in which such closing occurred. The commissioner shall also make and publish a report of any premises reopened pursuant to his or her permission under this section. Failure to comply with this subdivision shall not invalidate any action taken by the commissioner pursuant to this section.

** ***Local Law 23-1990.***

* **§26-127.1 Penalties for violation of order to vacate and order to seal, secure and close; access to premises.-**

a. Any person who violates the provisions of a vacate order issued pursuant to section 26-127 of this code shall be liable for a civil penalty of not more than twenty-five thousand dollars and an additional civil penalty of not more than one thousand dollars for each day the violation continues.

b. Except as authorized by the commissioner, any person who removes or causes to be removed the seal from any premises sealed in accordance with an order of the commissioner or his or her designee shall be guilty of a misdemeanor punishable by imprisonment for no more than one year or a fine not to exceed fifty thousand dollars, or both such fine and imprisonment. Such person shall also be subject to a civil penalty not to exceed fifty thousand dollars.

c. The commissioner shall allow access to the premises to an owner, or a lessor, lessee or mortgagee, in accordance with the terms of the parties' lease or mortgage agreement, upon the following conditions: (i) the submission of a written affirmation, satisfactory to the commissioner, that such person or persons will commence or cause to be commenced without delay all work necessary to correct the conditions stated in the vacate order or otherwise to make the premises meet all applicable laws, rules and regulations and will complete such work within a period of time and in a manner to be approved by the commissioner; (ii) the submission of an affirmation or other proof satisfactory to the commissioner describing the steps that have been taken and will be taken in the future to ensure that the premises will be used or operated in a lawful manner and specifying such lawful use; (iii) if a license, permit or certificate of occupancy is necessary for such lawful use, the submission of a written affirmation or other proof, satisfactory to the commissioner, describing the steps that have been taken and will be taken in the future to ensure that such premises will be used or operated in compliance with any law requiring such license, permit or certificate of occupancy; and (iv) if the premises are leased and the person making the affirmations described in items (i), (ii) and (iii) is not such lessee, the commissioner may also require any authorized person seeking access pursuant to this subdivision to submit an affirmation or other proof that proceedings to enable such person to take actions necessary to ensure compliance with the affirmations submitted by such authorized person pursuant to items (i), (ii) and (iii) have been commenced.

d. Any person who makes a material false statement in any document submitted pursuant to subdivision c of this section which statement he or she knows or has reason to know will be relied upon by the commissioner in determining whether he or she will allow access to the premises shall be liable for a civil penalty of not more than fifty thousand dollars.

e. Notwithstanding any other law, rule, or regulation, any person, corporation, partnership, association or any other legal entity who permits a building, structure, enclosure, place or premises, or any part thereof, to be unlawfully occupied or used in contravention of an order of the

commissioner pursuant to section 26-127, or who negligently fails to prevent or prohibit such unlawful occupancy or use, shall be liable for a civil penalty of not more than one million dollars, if any other person suffers serious physical injury, as defined in section ten of the penal law, or death in the building, structure, place or premises or any part thereof subject to such order as a result of such unlawful occupancy or use. If more than one person suffers serious physical injury or death, such penalty shall be recoverable for each person suffering injury or death. Such penalty shall be recovered in a civil action brought by the corporation counsel in the name of the city in any court of competent jurisdiction. In determining the amount of the civil penalty to be imposed the court shall consider:

(i) The extent and severity of injury to persons and property caused by the violation;

(ii) The history of violations by the defendant at such premises, or any other premises, of laws, rules or regulations enforced by the department;

(iii) The degree of willfulness, recklessness, or negligence displayed by the defendant in committing the subject violation;

(iv) The defendant's financial resources; and

(v) The defendant's good faith efforts to cure the subject violation, including efforts to obtain entry or possession of the premises in order to do so.

In the event that any person seriously injured or the family of any person [*sic*] who has died as the result of any unlawful occupancy or use described in this subdivision is unable to collect a judgment recovered in a civil action for personal injury or wrongful death against a defendant who has violated this subdivision because of the insolvency of such defendant, the city may, in its discretion, pay to such injured person or the family of such deceased person an amount, as hereinafter provided, collected from such defendant in an action relating to the same injury or death commenced by the corporation counsel against such defendant pursuant to this subdivision. Payments pursuant to this subdivision shall be made as a matter of grace and shall be in such amounts and in accordance with such standards and procedures as shall be established by the mayor, provided, however, that any payment made pursuant to this subdivision shall be in an amount not exceeding out-of-pocket expenses, including indebtedness reasonably incurred for medical or other services necessary as a result of the injury upon which such action is based; loss of earnings or support resulting from such injury; burial expenses not exceeding two thousand five hundred dollars of a person who died as a result of such unlawful occupancy or use described in this subdivision; and the unreimbursed cost of repair or replacement of articles of essential personal property lost, damaged or destroyed as a direct result of such unlawful occupancy or use. In no event shall the payment made to any person exceed the amount of such person's uncollected judgment for personal injury or wrongful death and in no event shall the total amount paid to any number of persons with such uncollected judgments against a single defendant exceed the actual amount collected by the city from such defendant in an action under this subdivision.

**** Local Law 23-1990.***

****§26-127.2 Violations of the zoning resolution in residential districts; public nuisance; order of closure.-**

a. Any building or part thereof that is located in a residential district, which is occupied for a commercial or manufacturing use in violation of the zoning resolution without a valid certificate of occupancy, is hereby declared to be a public nuisance.

b. If a building or part thereof in which such a nuisance occurs is not occupied primarily as a residence, the commissioner may, in addition to or as an alternative to any other remedy under any other provision of law, after notice and the opportunity for a hearing in accordance with section, order the closing of such building or part thereof to the extent necessary to abate the nuisance.

c. A notice of hearing with respect to an order of closure shall be served on the owner and mortgagee of record of such building or part thereof and on the person alleged to be occupying such building or part thereof for commercial or manufacturing use in the following manner:

(1) service may be made on the owner by delivering such notice to the owner or to an agent of the owner or to a person of suitable age and discretion at the residence or place of business of the owner or, if upon reasonable application such delivery cannot be completed, by affixing such notice in a conspicuous place at the owner's place of business or residence or by placing it under the entrance door at either of such locations or by delivering such notice to a person employed by the owner to work at or to manage or maintain the premises at which the nuisance is located and, in all instances except personal delivery upon such owner by mailing the notice of hearing as follows:

(i) to the person registered with the department of housing preservation and development as the owner or agent of the premises, at the address filed with such department in compliance with article two of subchapter four of chapter two of title twenty-seven of the administrative code; or

(ii) to the person designated as owner of the building or designated to receive real property tax or water bills for the building at the address for such person contained in one of the files compiled by the department of finance for the purpose of the assessment or collection of real property taxes and water charges or in the file compiled by the department of finance from real property transfer forms filed with the city register upon the sale or transfer of real property; or

(iii) to the person in whose name the real estate affected by the order of the commissioner is recorded in the office of the city register or the county clerk as the case may be at the address set forth on the recorded instrument.

(2) service may be made on an owner that is a corporation pursuant to section three hundred six of the business

corporation law; however, service upon a corporation shall be deemed to have been completed forty-five days following service upon the secretary of state;
(3) service may be made upon mortgagees of record by mailing such notice to the mortgagees at the address set forth on the recorded instrument;
(4) service may be made upon an occupant (i) by delivering such notice to the occupant or to a person employed by the occupant to work at or to manage or maintain the premises at which the nuisance is located; or (ii) by affixing such notice to the premises at which the nuisance is located in a conspicuous place or by placing a copy under the entrance door of such premises and mailing a copy of such notice to the occupant at such premises; (iii) and in all instances except personal delivery upon such occupant, by mailing the notice of hearing to the occupant at the premises at which the nuisance is located.
(5) proof of service pursuant to paragraphs (1), (2), (3), and (4) of this subdivision shall be filed with commissioner.
d. Such hearing shall be conducted by the office of administrative trials and hearings. The administrative law judge assigned to hear the matter shall submit his or her proposed findings of fact and recommended decision to the commissioner. If based on such recommended decision, proposed findings of fact, and the record of the hearing the commissioner determines that the building or part thereof is located in a residential district and that it has been occupied for a commercial or manufacturing use in violation of the zoning resolution without a valid certificate of occupancy, he or she may issue an order of closure. Such order shall not bar legally required ingress or egress for residential occupancy of parts of the building, which are not subject to the order of closure.
e. At such hearing it shall not be a defense that the owner, occupant, lessor, lessee, mortgagee, or other person having an interest in the property lacked knowledge of or did not acquiesce or participate in the commercial or manufacturing use of such property.
f. A closure ordered by the commissioner pursuant to this section shall not constitute an act of possession, ownership, or control by the city over the closed premises.
g. An order of closure shall be posted at the building or part thereof, which is the subject of such order, and shall be mailed to the record owner of such premises, and any record mortgagee at the address for such person set forth in the recorded instrument, and to the person designated as owner or agent of the building or designated to receive real property tax or water bills for the building at the address for such person contained in one of the files compiled by the department of finance for the purpose of the assessment or collection of real property taxes and water charges or in the file compiled by the department of finance from real property transfer forms filed with the city register upon the sale or transfer of real property. A copy shall also be filed with county clerk or register of the county in which such premises are located. Such filing shall be notice of the order to any subsequent owner and such owner shall be subject to such order.
h. On the tenth business day after the posting of such order and upon the written directive of the commissioner, police officers and authorized employees of the department shall act upon and enforce such order by sealing, padlocking, or otherwise preventing access to the premises in a manner that will not bar legally required ingress or egress for residential occupancy of parts of the building that are not subject to the closure order.
i. If at any time after the issuance of such order, the owner, mortgagee, or other person having an interest in the property provides assurance, in a form satisfactory to the commissioner, that the commercial or manufacturing use of the premises has been discontinued and will not reoccur, or such owner, mortgagee, or other person establishes that the premises may be lawfully occupied for such manufacturing or commercial use, the commissioner shall rescind the closure order. If such order is rescinded, the commissioner shall, upon request of such owner, mortgagee, or other person, provide a copy of such rescission, [*sic*] which may be filed with the county clerk or register of the county in which such premises are located.
j. It shall be a misdemeanor for any person to use or occupy or to permit any other person to use or occupy any building or part thereof that has been sealed, padlocked, or otherwise closed pursuant to an order of the commissioner. Mutilation or removal of a posted order of the commissioner shall be punishable by a fine of not more than two hundred fifty dollars or by imprisonment not exceeding fifteen days, or both, provided such order contains therein a notice of penalty.
k. Intentional disobedience or resistance to any provision of an order issued by the commissioner pursuant to this section, in addition to any other punishment prescribed by law, shall be punished by a fine of not more than one thousand dollars, or by imprisonment not exceeding six months, or both.
*****Local Law 6-1993.***

*****26-127.3 Illegal outdoor signs; public nuisance.-**
a. A sign with a surface area greater than two hundred square feet that is erected, maintained, attached, affixed, painted on, or in any other manner represented on a building or premises in violation of the zoning resolution, the administrative code or rules adopted pursuant thereto is hereby declared to be a public nuisance. The commissioner may, after notice and hearing, order the removal of such illegal sign or its sign structure or both, as hereinafter provided.
b. The commissioner shall serve a notice of hearing with regard to the proposed nuisance abatement on the owner and mortgagee of record of the building or premises and other persons having a recorded interest in the property in the manner provided in subdivision c of section 26-127.2 of this code for the service of an order of closure. If the sign is under the control of an outdoor advertising company, as defined in section 26-259 of the code, and an address for such company is reasonably

ascertainable, the notice shall also be served on such outdoor advertising company by mail to the last known address for such company or, if such company is registered in accordance with section 26-260 of the code, at the address provided to the department by the registrant.

c. The office of administrative trials and hearings shall conduct the hearing. The administrative law judge assigned to hear the matter shall submit his or her proposed findings of fact and recommended disposition to the commissioner. If based on such recommended disposition, proposed findings of fact and the record of the hearing the commissioner determines (i) that the sign has a surface area greater than two hundred square feet and, (ii) that the sign has been erected, maintained, attached, affixed, painted on, or in any other manner represented on the building or premises in violation of the zoning resolution, the administrative code or rules adopted pursuant thereto, he or she may order the removal of the illegal sign or its sign structure or both.

d. At such hearing it shall not be a defense that an owner or other person having an interest in the property lacked knowledge of or did not participate in the erection or maintenance of the illegal sign.

e. The commissioner's order of removal shall be posted, mailed and filed in the manner provided in subdivision g of section 26-127.2 of this code for an order of closure.

f. On or after the tenth business day after the posting of such order and upon the written directive of the Commissioner, police officers and authorized representatives of the department shall act upon and enforce such order by removing, covering, painting over or otherwise rendering ineffective the illegal sign or its sign structure or both. Such work shall at all times be performed by a licensed sign hanger where required by law. Nothing in this section shall be construed to prohibit an owner or other person having an interest in the property from removing or causing the removal of an illegal sign or its sign structure prior to the arrival of such enforcement officers. On and after the posting of such removal order, no further permits for signs shall be issued for such building or premises pursuant to section 26-253 or sections 27-147, 27-148 and article sixteen of sub-chapter one of title twenty-seven of this code and, if the sign structure is not removed, no further display shall be exhibited on such sign structure unless and until the commissioner rescinds such order. The commissioner may rescind the order if the owner or other person having an interest in the building or premises provides assurance in a form satisfactory to the commissioner that all signs erected or maintained at such building or premises will be in compliance with the zoning resolution, the administrative code or rules adopted pursuant to such provisions. If such order is rescinded, the commissioner shall, upon request of such owner, mortgagee or other person, provide a certified copy of such rescission which may be filed with the county clerk or register of the county in which such building or premises is located.

g. The costs and expenses for painting over, covering, rendering ineffective or for the removal and storage of such sign and its sign structure may be recovered from the owner of the premises or, if the illegal sign is under the control of an outdoor advertising company and notice was served on such company in accordance with subdivision b of this section, from such outdoor advertising company. Such amounts may be recovered by the city in an action or proceeding in any court of appropriate jurisdiction and, with respect to amounts owed by an outdoor advertising company, by drawing upon any bond posted by such company pursuant to section 26-260 of this code. Nothing in this subdivision shall be construed to limit the ability of an owner to seek recovery of such costs and expenses from any other party.

h. In addition, such costs and expenses shall constitute a lien on the land and building on which the sign was located which may be entered and enforced pursuant to section 26-128 of this code in the same manner as an unpaid fee.

i. The commissioner shall adopt rules to provide for the storage and disposal of any sign or sign structure removed pursuant to this section. If the identity and address of the owner of such property is reasonably ascertainable, notice of the removal shall be sent to the owner within a reasonable period of time after the removal. If such property is not claimed within thirty days after its removal it shall be deemed to be abandoned and may be sold at a public auction after having been advertised in the City Record and the proceeds paid into the general fund or if the commissioner determines that the property is not saleable, he or she may turn over such property to the department of sanitation for disposal. Property removed pursuant to this section shall be released to the owner or other person lawfully entitled to possession upon payment of the costs of removal and storage as set forth in the rules of the department and any fines or civil penalties imposed for the violation or, if an action or proceeding for the violation is pending in court or before the environmental control board, upon the posting of a bond or other form of security acceptable to the department in an amount which will secure the payment of such costs and any fines or civil penalties which may be imposed for the violation.

j. For the purposes of this section the terms "sign" and "surface area", in reference to a sign, shall be as defined under section 12-10 of the zoning resolution.

k. An order of the commissioner issued pursuant to subdivision c of this section shall be a final determination of the commissioner for purposes of review pursuant to article seventy-eight of the civil practice law and rules. Notwithstanding any inconsistent provision of paragraph (a) of subdivision six of section six hundred sixty-six of the New York city charter, such order shall not be subject to review by the board of standards and appeals.

******Local Law 14-2001.***

§[643a-14.0] 26-128 Liens on premises for inspection, reinspection, examination, service or permit fees.-

a. Any unpaid fee for an inspection, reinspection, examination or service performed by the department, and all permits issued by the department, pursuant to law shall constitute a lien upon the land and buildings upon or in respect to which such inspection, reinspection, examination or service was performed or permit issued, as hereinafter provided.

b. There shall be filed in the office of the department a record of all fees for inspections, reinspections, examinations or services performed and all permits issued by or on behalf of the department. Such records shall be kept on a building by building basis and shall be accessible to the public during business hours. An entry of a fee on the records of the department shall constitute notice to all parties.

c. All such unpaid fees shall constitute a lien upon the land and building upon, or in respect to which, such inspection, reinspection, examination or service was performed or permit issued when the amount thereof shall have been definitely computed as a statement of account by the department and the department shall cause to be filed in the office of the city collector an entry of the account stated in the book in which such charges against the premises are to be entered. Such lien shall have a priority over all other liens and encumbrances except for the lien of taxes and assessments. However, no lien created pursuant to this section shall be enforced against a subsequent purchaser in good faith or mortgagee in good faith unless the requirements of subdivision b of this section are satisfied.

d. A notice thereof, stating the amount due and the nature of the charge, shall be mailed by the city collector, within five days after such entry, to the last known address of the person whose name appears on the records in the office of the city collector as being the owner or agent or as the person designated by the owner to receive tax bills or, where no name appears, to the premises, addressed to either the owner or the agent.

e. If such charge is not paid within thirty days from the date of entry, it shall be the duty of the city collector to receive interest thereon at the rate of fifteen percent per annum, to be calculated to the date of payment from the date of entry.

f. Such charge and the interest thereon shall continue to be, until paid, a lien on the premises. Such lien shall be a tax lien within the meaning of sections 11-319 and 11-401 of the code and may be sold, enforced or foreclosed in the manner provided in chapter three or four of title eleven of such code or may be satisfied in accordance with the provisions of section thirteen hundred fifty-four of the real property actions and proceedings law.

g. Such notice mailed by the city collector pursuant to this section shall have stamped or printed thereon a reference to this section.

h. In any proceedings to enforce or discharge a lien created pursuant to this section the validity of the lien shall not be subject to challenge based on:

(1) The lawfulness of the inspection, reinspection, examination, service or permit, or

(2) The propriety and accuracy of the fee for which a lien is claimed, except as provided in this section.

i. No such challenge may be made except by (1) the owner of the property, or (2) a mortgagee or lienor whose mortgage or lien would, but for the provisions of this section, have priority over the department's lien.

§[644-1.0] 26-129 Record of applications.-

Each borough superintendent shall keep a record of all applications presented to him or her concerning, affecting or relating to the construction, alteration or removal of buildings. Such record shall include the date of the filing of each such application; the name and address of the applicant; the name and address of the owner of the land on which the building mentioned in such application is situated; the names and addresses of the architect and builder employed thereon; a designation of the premises by street number, or by any means sufficient to identify the same:* statement of the nature and proposed use of such building; and a brief statement of the nature of the application, together with a memorandum of the decision of the borough superintendent upon such application and the date of the rendition of such decision. The books containing such records are hereby declared to be public records, and shall be open to inspection at all reasonable times.

***Colon enacted; semicolon probably intended**.

§[644-2.0] 26-130 Borough superintendents to furnish tax department with copies of permits.-Whenever any permit shall be granted by the commissioner or any borough superintendent for the erection or alteration of any building or for the installation or alteration of any service equipment therein, a copy of such permit shall be furnished by the commissioner or such superintendent to the department of finance within five days after the issuance of such permit.

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SUBCHAPTER 2
LICENSES

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ARTICLE 1
GENERAL PROVISIONS

§[26-1.0] 26-131 General license requirements.-It

shall be unlawful, on and after December sixth, nineteen hundred sixty-eight, for any person to engage in or carry on in the city any business, trade or calling regulated by this subchapter, without having first obtained a license therefor from the commissioner in accordance with and subject to the provisions of this subchapter, except that any certificates of qualification or licenses issued for any such business, trade or calling issued by the department, or by any other city department or agency, prior to December sixth, nineteen hundred sixty-eight, shall continue to remain in full force and effect until the expiration or termination thereof in accordance with the terms thereof, unless sooner revoked or suspended for cause as hereinafter provided.

§[26-1.1] 26-132 Application for license.-
All applications for licenses shall be submitted on forms furnished by the department, and shall be accompanied by the required fee, as hereinafter provided. Each application for a license shall set forth the name, residence address and business address of the applicant, and such information and supporting data concerning his or her qualifications for the license as the commissioner may require.

*** §[26-1.2] 26-133 Qualifications of applicant**. -All applicants for licenses shall be at least eighteen years of age, shall be able to read and write the English language, shall be of good moral character, and shall meet the qualifications prescribed for the particular license, as hereinafter provided.
***Local Law 55-1989**.

****§[26-1.3] 26-134 Examination of applicant.-**Every applicant for a license shall be examined as to his or her fitness and qualifications therefore [*sic*] in accordance with rules and regulations adopted and promulgated by the commissioner under and pursuant to the provisions of chapter forty-five of the charter. The commissioner may require the applicant to submit to an oral, written and practical examination or any or all of said examinations; and such examinations and investigations required to determine the fitness and qualifications of said applicant shall, upon the request of the commissioner, be conducted by the department of citywide administrative services, which shall certify the results thereof, pursuant to the provisions of section eight hundred eighteen of the charter.
****Local Law 59-1996.***

§[26-1.4] 26-135 Exemptions from examination.- Notwithstanding the provisions of section 26-134 of this subchapter, the commissioner shall have the power to exempt from examination any person who, prior to December sixth, nineteen hundred sixty-eight, held a license or was otherwise qualified under the provisions of the code theretofore in effect.

§[26-1.5] 26-136 Issuance of license.-
The commissioner shall issue a license to each applicant who shall have submitted satisfactory evidence of his or her qualifications, and shall have satisfactorily passed all required examinations to determine his or her fitness and qualifications, provided that no license shall be issued unless and until the applicant shall have paid the required fee therefor and complied with such other and further requirements for the particular license as may be hereinafter provided. All licenses issued by the commissioner shall have his or her signature affixed thereto; but the commissioner may authorize any subordinate to affix such signature.

***** §[26-1.6] 26-137 Term of license; renewal.-**
All licenses, except for plumbing licenses and fire suppression piping contractor licenses, issued by the commissioner under the provisions of this subchapter shall expire one year from the date of issuance thereof, and may be renewed annually, provided that application for renewal of the license is made thirty calendar days prior to the expiration date of the license. A plumbing license and a fire suppression piping contractor license shall expire two years from the date of issuance thereof, and may be renewed every two years thereafter, provided that application for renewal of the license is made between thirty and sixty calendar days prior to its expiration date. All applications for renewal of a license shall be accompanied by the required renewal fee. If application for renewal is not made as provided above, the commissioner may, nevertheless, renew the license provided the applicant pays an additional fee of five dollars, except as otherwise provided in this subchapter, and provided further that the applicant satisfies the commissioner as to his or her qualifications.
******Local Law 51-2001.***

*** §[26-1.7] 26-138 Use of license.-**
a. No holder of a license issued under this subchapter shall authorize, consent to or permit the use of his or her license by or on behalf of any other person, and subject to the provisions of section 26-131 of this subchapter, no person who has not qualified and obtained a license under this subchapter shall hold himself or herself out to the public as licensed or as the holder of a license issued under this subchapter, either directly or indirectly, by means of signs, sign cards, metal plates, stationery, or in any other manner whatsoever.
b. Except for plumbing licenses, and fire suppression piping contractor licenses, nothing herein contained, however, shall be construed to prohibit the use of a license by the holder thereof for or on behalf of a partnership, corporation or other business association, provided that at least one member of the partnership or at least one officer of the corporation is licensed for the same business, trade or calling, and that all work performed

by such partnership or corporation is performed by or under the direct supervision of such license holder or holders.

c. For plumbing licenses, nothing herein contained, however, shall be construed to prohibit the use of a license by the holder thereof for or on behalf of a partnership, corporation or other business association, provided that fifty-one percent or more of the control or voting capital stock of such partnership, corporation, or other business association is owned by one or more holders of licenses for the same business trade or calling and that all work performed by such partnership, corporation or other business association is performed by or under the direct and continuing supervision of such license holder or holders. For plumbing licenses, however, where previous to the effective date of this code, a company, corporation, partnership or other business association or its predecessor has been doing plumbing work, it may continue to do so in any one or more of said business forms without complying with the foregoing, if application is made to the department previous to six months after the effective date of this subdivision as amended and necessary evidence shall be furnished within one year of such effective date, when such company, corporation, partnership or other business association or its predecessor has employed an average of ten or more journeymen plumbers doing plumbing work for at least five days a week for a period of ten years or more, such period need not be consecutive but must have occurred within a period of twenty years and provided, however, that such plumbing business must continue to have all plumbing work conducted under the management and direction of a licensed master plumber employed by such plumbing business and that said licensed master plumber is not otherwise interested in, associated with or employed by any other plumbing business operating in this city except as a joint venture in which the said master plumber's employer is one of the joint venturers.

d. For fire suppression piping contractor licenses, nothing herein contained, however, shall be construed to prohibit the use of a license by the holder thereof for or on behalf of a partnership, corporation or other business association, provided that fifty-one percent or more of the control or voting capital stock of such partnership, corporation, or other business association is owned by one or more holders of licenses for the same business trade or calling and that all work performed by such partnership, corporation or other business association is performed by or under the direct and continuing supervision of such license holder or holders. For fire suppression piping contractor licenses, however, where previous to the effective date of this subdivision, a company, corporation, partnership or other business association or its predecessor has been doing fire suppression piping contractor work, it may continue to do so in any one or more of said business forms without complying with the foregoing, if application is made to the department previous to six months after the effective date of this subdivision and necessary evidence shall be furnished within one year of such effective date when such company, corporation, partnership or other business association [*sic*] or its predecessor has employed an average of ten or more journeymen doing fire suppression piping contractor for at least five days a week for a period of ten years or more, such period need not be consecutive but must have occurred within a period of twenty years and provided, however, that such fire suppression piping contractor business must continue to have all fire suppression piping contractor work conducted under the management and direction of a licensed master fire suppression piping contractor employed by such fire suppression piping contractor business and that said licensed master fire suppression piping contractor is not otherwise interested in, associated with or employed by any other fire suppression piping contractor business operating in this city except as a joint venture in which the said master fire suppression piping contractor's employer is one of the joint venturers.
Local Law 55-1989.

§[B26-1.8] 26-139 Revocation of licenses.-The commissioner shall have power to revoke or suspend any license upon proof of fraud, deceit, collusion or misrepresentation on the part of the holder in obtaining the license or any renewal thereof, or upon proof of violation of or failure to comply with the provisions of the building code and other applicable laws, rules or regulations relating to the business, trade or calling of the licensee, provided that the commissioner shall not revoke or suspend any license for any cause, unless and until the holder shall have been given at least five calendar days' prior notice in writing and an opportunity to be heard. However, notwithstanding the foregoing, when the public safety may be imminently jeopardized the commissioner shall have the power, pending a hearing and determination of charges, to forthwith suspend any license for a period not exceeding five working days.

§[B26-1.9] 26-140 Violations and penalties.-Any person who shall violate any of the provisions of this subchapter shall be guilty of a misdemeanor and upon conviction thereof, shall be punishable by a fine not to exceed five hundred dollars, or by imprisonment for a period not to exceed six months, or both. Such person shall also be subject to the payment of a penalty of not more than two hundred fifty dollars, to be recovered in a civil action brought in the name of the city in any court of record in the city.

ARTICLE 2
*MASTER PLUMBER LICENSE; MASTER FIRE SUPPRESSION PIPING CONTRACTOR LICENSE

*** §[B26-2.0] 26-141 Definitions.-**For the purposes of this article:

a. "Board" means the license board established pursuant

to section 26-144 of this article.
b. "Certificate" means the certificate of competence as a master plumber or master fire suppression piping contractor issued by the commissioner to an individual who satisfies the requirements of this subchapter for certification as a master plumber or a master fire suppression piping contractor.
c. "Direct and continuing supervision" means responsible control exercised by a licensed master plumber or a licensed master fire suppression piping contractor, either personally or through one or more levels of competent supervision, over those persons in the direct employ of the licensed individual, partnership, corporation or other business association as authorized by the code performing the actual work of installing, maintaining, repairing, modifying, extending or altering plumbing or gas piping, or the actual work as permitted by the class of license held by the licensee for which such licensee assumes full responsibility. Such control shall be evidenced by such licensee's signature and seal upon any required statements, applications and/or permits.
d. "Direct employ" means that an individual performing the actual work of installing, maintaining, repairing, modifying, extending or altering plumbing or gas piping is an employee of the licensed master plumber, partnership, corporation or other business association as authorized by the code, having responsibility for such work, or an individual performing the actual work of installing, maintaining, repairing, modifying, extending or altering any fire suppression piping system or any part thereof as permitted by the class of license held by the licensee is an employee of the licensed master fire suppression piping contractor, partnership, corporation or other business association as authorized by this code having responsibility for such work. The employer shall not be restricted in the employer's right to use those employees in the employer's work force with proper and necessary training to perform the required work. Such employment shall be evidenced by payroll records such as social security payments, income tax withholding or the disbursement of other funds as required by law for the benefit of such employee.
**e. "Licensed master plumber" means an individual, partnership, corporation or other business association authorized under the provisions of this subchapter to install, maintain, repair, modify, extend or alter plumbing, standpipe where a sprinkler is not or is not now being connected, domestic water, connections to the domestic water, combination domestic water and reserve standpipe supply tank, up to and including the roof tank check valve, gas piping or any piping system referred to in subchapter sixteen of chapter one of title twenty-seven of the code and in reference standard RS-16 and up to thirty sprinkler heads off the domestic water in any one building in the city of New York which has satisfied the provisions of this subchapter for operation pursuant to a plate, certificate issued to an individual and seal.
f. "Licensed master fire suppression piping contractor" means an individual, partnership, corporation or other business association authorized under the provisions of this subchapter to install, maintain, repair, modify, extend or alter a fire suppression piping system in the city of New York who has satisfied the provisions of this subchapter for operation pursuant to a plate, certificate issued to an individual and seal.
g. "Plate" means a licensed master plumber or licensed master fire suppression piping contractor plate issued by the commissioner to an individual who has satisfied the provisions of this subchapter for certification and license as a master plumber or master fire suppression piping contractor. The plate shall permit the individual to perform the work and services permitted within the provisions of this subchapter.
h. "Fire suppression piping system" means any system including any and all equipment and materials in connection therewith with the exception of any electrical components which must be installed by a licensed electrician pursuant to this code, the purpose of which is to control, to contain, to suppress or to extinguish fire and shall include:
**1. the systems, materials and equipment described or referred to in articles one through four of subchapter seventeen of chapter one of title twenty-seven of the code and in reference standards RS 17-1, RS 17-2, RS 17-2A and RS 17-2B of the code, with the exception of any electrical components which must be installed by a licensed electrician pursuant to this code, which systems, materials or equipment shall include any standpipe system to which a sprinkler system is or is now being connected; provided, however, that such systems, materials or equipment shall not include any systems, materials or equipment specified in subdivision e of this section, with the exception of up to thirty sprinkler heads off the domestic water in any one building; or
2. any dry, liquid or gaseous chemical fire containment, suppression, control or extinguishment system or any other device or means of control, suppression, containment or extinguishment of fire, with the exception of any electrical components which must be installed by a licensed electrician pursuant to this code, but not including portable fire extinguishers.
i. "Combined standpipe system" means a standpipe to which a sprinkler system is connected or is now being connected, as shown by drawings approved by the department.
j. All other words mean the same as the definitions provided in section 27-232 of the code.
Local Law 55-1989.
****Local Law 10-1999.***

***§[B26-2.1] 26-142 Requirement of license.-**

a. It shall be unlawful for any person:
1. (a) to install, maintain, repair, modify, extend or alter a plumbing standpipe where a sprinkler is not or is not now being connected, domestic water, connections to the domestic water, combination domestic water and standpipe supply tank, up to and including the roof tank

check valve, gas piping or any piping system referred to in subchapter sixteen of chapter one of title twenty-seven of the code and in reference standard RS-16 and up to twenty sprinkler heads off the domestic water in any one building, in the city of New York unless such person is a licensed master plumber, partnership, corporation or other business association as permitted by this code and unless such work is performed under the direct and continuing supervision of a licensed master plumber;

(b.) to install, maintain, repair, modify, extend or alter any fire suppression piping system in the city of New York unless such person is a licensed master fire suppression piping contractor, partnership, corporation or other business association as permitted by this code and unless such work is performed under the direct and continuing supervision of a licensed master fire suppression piping contractor; or

2. (a.) to use the title licensed master plumber, master plumber, or any other title in such manner as to convey the impression that such person is a licensed master plumber unless such person is licensed in accordance with provisions of this subchapter;

(b.) to use the title licensed master fire suppression piping contractor, master fire suppression piping contractor, or any other title in such manner as to convey the impression that such person is a licensed master fire suppression piping contractor unless such person is licensed in accordance with the provisions of this subchapter.

b. A certificate of competence as a master plumber or master fire suppression piping contractor shall be issued only to an individual.

c. There shall be three classes of licenses for master fire suppression piping contractors which are as follows:

1. Class A. The holder of a class A master fire suppression piping contractor license is authorized to perform any work in connection with any and all fire suppression piping systems as defined in paragraphs one and two of subdivision h of section 26-141.

2. Class B. The holder of a class B master fire suppression piping contractor license is authorized to perform any work in connection with any and all fire suppression piping systems as defined in paragraph one of subdivision h of section 26-141.

3. Class C. The holder of a class C master fire suppression piping contractor license is authorized to perform any work in connection with any and all fire suppression piping systems as defined in paragraph two of subdivision h of section 26-141.

d. 1. No individual, corporation, partnership or other business association shall install, maintain, repair, modify, extend or alter a plumbing, standpipe where a sprinkler is not or is not now being connected, domestic water, connections to the domestic water, combination domestic water and reserve standpipe supply tank, up to and including the roof tank check valve, gas piping or any piping system referred to in subchapter sixteen of chapter one of title twenty-seven of the code and in reference standard RS-16 and up to twenty sprinkler heads off the domestic water in any one building in the city of New York or employ a name incorporating the term plumber or plumbing or any modification or derivative of such terms unless such individual has been issued a plate or, a corporation, partnership or other business association is operating pursuant to a plate authorizing the conduct of a plumbing contracting business in the city of New York.

2. No individual, corporation, partnership or other business association shall install, maintain, repair,

extend or alter a fire suppression piping system, or any part thereof, in the city of New York or employ a name incorporating the term fire suppression piping or any modification or derivative of such term unless such individual has been issued a plate or, a corporation, partnership or other business association is operating pursuant to a plate authorizing the conduct of a fire suppression piping contracting business in the city of New York except as otherwise provided by this subdivision.

e. 1. No individual, corporation, partnership or other business association shall conduct a plumbing contracting business in the city of New York, unless:

(a) no less than fifty-one percent of the control or voting capital stock of such entity is owned by one or more individuals who are licensed master plumbers except as otherwise provided; and

(b) all plumbing or gas piping work performed by such entity is performed by or under the direct and continuing supervision of a licensed master plumber; and

(c) The person in charge of such work is a licensed master plumber; and

(d) the persons actually performing such work are in the direct employ of such licensed master plumber, partnership, corporation or other business association as authorized by the code.

2. No individual, corporation, partnership or other business association shall conduct any fire suppression piping contracting business in the city of New York unless:

(a) no less than fifty-one percent of the control or voting capital stock of such entity is owned by one or more individuals who are licensed master fire suppression piping contractors except as otherwise provided; and

(b) all work in connection with a fire suppression piping system performed by such entity is performed by or under the direct and continuing supervision of a licensed master fire suppression [*sic*] piping contractor; and

(c) the person in charge of such work is a licensed master fire suppression piping contractor; and

(d) the persons actually performing such work are in the direct employ of such licensed master fire suppression piping contractor, partnership, corporation or other business association as authorized by the code.

**** Local Law 55-1989.***

**** §[B26-2.2] 26-143 Exemption.-**The provisions of

section 26-142 of this subchapter shall not apply to minor plumbing alterations or ordinary plumbing repairs, as defined and delimited by sections 27-124, 27-125 and 27-126 of the code, or to the installation or alteration of gas service piping and gas meter piping, including meters, valves, regulators or related equipment, when such work is to be performed, serviced and maintained by utility corporations subject to the jurisdiction of the public service commission nor shall the provisions of section 26-142 apply to minor alterations, ordinary repairs and maintenance of a fire suppression piping system.
***Local Law 55-1989.*

*** §[B26-2.3] 26-144 License board.-**
a. The commissioner shall appoint annually each member of a license board, to investigate and report, at the request of the commissioner, on all proposed suspensions or revocations of license, make recommendations regarding the surveillance of the practices of licensed master plumbers and licensed master fire suppression piping contractors, and the policing of the activities of unlicensed practitioners, and engage in such other functions as herein provided. The commissioner may, for cause shown, remove any member of the license board and shall fill any vacancy therein. Such board shall consist of :
1. Two officers or employees of the department representing the commissioner.
2. Five individuals who are licensed master plumbers at least four of whom shall be selected from nominees of the New York City contracting plumbing association whose members perform the largest dollar value of work within the city and one of whom shall be the holder of a class A or class B master fire suppression piping contractor license.
3. Two individuals who are licensed master fire suppression piping contractors both of whom shall hold a class A license and shall be selected from nominees of the New York city sprinkler/fire suppression piping contractors association whose members perform the largest dollar value of work within the city.
4. A professional engineer having at least five years' experience in the design of plumbing systems.
5. A registered architect.
6. A professional engineer who is a full member of the society of fire protection engineers.
7. A resident of the city.
8. Two officers or employees of the fire department representing the fire commissioner.
b. One of the members of the board who is an officer or employee of the department representing the commissioner shall serve as chairperson and all members shall serve without compensation. Eight members including the chairperson, who shall be entitled to vote, shall constitute a quorum of the board for the transaction of business. All actions shall be conducted by majority vote except as otherwise provided.
c. The commissioner may request the license board to investigate and hear any or all written complaints against anyone allegedly acting in violation of the provisions of this subchapter and to report to the commissioner its findings and recommendations. It shall keep minutes of its proceedings and hearings and records of its investigations. Upon the holding of any hearing, the chairperson of the board presiding at such hearing may administer oaths, and the board may issue and cause to be served subpoenas requiring the attendance of witnesses and the production of books and papers pertinent to any hearing held by it upon written complaint. Such subpoenas shall by** signed by the chairperson and the fees and mileage paid to witnesses upon the service of such subpoenas shall be those prescribed by law. The board shall meet at least once a month except during the months of July and August, and at such other times upon call of the chairperson.
d. The license board may request the commissioner to appoint duly authorized representatives to conduct investigations and other activities incidental to the functions of the license board. Such appointees shall be non-voting members of the committee to which they are appointed, and may include personnel who are not department employees who shall serve without compensation. In addition the commissioner may designate such employees of the department as he or she deems necessary to the service and support of the license board.
e. The license board shall make recommendations to the commissioner regarding plumbing and fire suppression piping practices and code applications.
f. The license board shall make recommendations to the commissioner regarding plumbing and fire suppression piping regulations and legislation.
***Local Law 55-1989.*
****As enacted but "be" probably intended.*

§[B26-2.4] 26-145 Certificate application.-All applications for a certificate shall be subject to the provisions of section 26-132 of this subchapter; and all applicants for a certificate shall comply with and be subject to the provisions of sections 26-133, 26-134 and 26-135 of this subchapter.

***§[B26-2.5] 26-146 Certificate qualifications.-**In addition to meeting the general qualifications prescribed in section 26-133 of this subchapter:
a. all applicants for a master plumber certificate shall submit satisfactory proof establishing that the applicant :
1. has had at least seven years' prior experience in the design and installation of plumbing systems in the United States; or
2. has received a bachelors' degree in engineering or appropriate engineering technology from a college or university registered by the state department of education and has had at least three years prior experience in the design and installation of plumbing systems in the United States.
b. all applicants for a master fire suppression piping contractor certificate shall submit satisfactory proof establishing that the applicant:

1. has had at least seven years' prior experience in the design and installation of fire suppression piping systems or four years in the design and installation of plumbing systems and three years in the design and installation of fire suppression piping systems in the United States, for the class of license for which application is made; or
2. has received a bachelors' degree in engineering or appropriate engineering technology from a college or university registered by the state department of education and has had at least three years' prior experience in the design and installation of fire suppression piping systems in the United States, for the class of license for which application is made.

c. Applicants who were engaged in plumbing or fire suppression piping work as above provided, prior to entering the armed services of the United States shall be permitted to credit their time in the service as experience in the plumbing or fire suppression piping business, as above provided; but such service credit shall not exceed one-third of the time required for experience in this section.
Local Law 55-1989.

* **§[B26-2.6] 26-147 License fees.-** a. The fee for obtaining a certificate shall be two hundred dollars; and the biennial renewal fee to maintain the certificate shall be one hundred dollars.

b. The fee for obtaining a plate shall be seventy-five dollars, and fifty dollars for a seal. If the plate or seal is lost, and an affidavit is submitted establishing such fact, a new plate or seal shall be issued by the commissioner upon application and payment of a fee of one hundred dollars for a plate and seventy-five dollars for a seal. The biennial renewal fee to retain such plate and seal shall be one hundred and fifty dollars. Such plate or seal shall remain the property of the city of New York. If application for renewal is not made between thirty and sixty calendar days prior to the expiration date of the license, the applicant shall be required to pay an additional fee of fifty dollars.
Local Law 55-1989; Local Law 51-2001.

***§[B26-2.7] 26-148 Certificate of competence; plate; seal.-** a. A certificate of competence shall be issued by the commissioner to an applicant who satisfactorily complies with the experience and examination requirements of this subchapter for a certificate, upon payment of a specified fee. Such certificate shall contain the full name of the individual and a certificate number, and shall be signed by the commissioner.

b. The issuance of a certificate shall constitute evidence that the person named therein is qualified to obtain a plate and seal while the certificate is valid. The certificate shall entitle the applicant to obtain a plate and seal from the commissioner upon approval of an application showing compliance with the requirements of this subchapter and upon the payment of the specified fees. The holder of a certificate shall not be entitled to perform work or hold him or herself out to perform work as a licensed master plumber or licensed master fire suppression piping contractor until such plate and seal have been obtained.

c. The holder of a certificate shall obtain a plate and seal upon establishing either:

1. a plumbing contracting business conforming to the requirements of this subchapter and any rules and regulations promulgated by the commissioner. No holder of a certificate shall enter into any contractual agreement to install or alter any plumbing, gas piping, or any piping system referred to in reference standard RS-16, other than an employment agreement with a licensed master plumber, partnership, corporation or other business association as authorized by this code, other than on behalf of an employer holding such plate and seal, unless and until he or she shall have obtained a plate and seal.
2. a fire suppression piping contracting business conforming to the requirements of this subchapter and any rules and regulations promulgated by the commissioner. No holder of a certificate shall enter into any contractual agreement to install or alter any fire suppression piping system other than employment agreement with a licensed master fire suppression piping contractor, partnership, corporation or other business association as authorized by this code, other than on behalf of an employer holding such plate and seal, unless and until he or she shall have obtained a plate and seal.

d. The plate and seal shall contain the full name of the holder of the certificate with the words "licensed plumber" or "licensed master fire suppression piping contractor-Class A, B or C", and the license number. The plate shall set forth the business organization which is operating pursuant to the plate. The plate shall be prominently and conspicuously displayed at the place of business registered with the department.

e. Prior to the issuance of any plate or seal, or renewal thereof, the applicant shall file with the department a liability bond and a property damage bond, or in lieu thereof, policies of insurance. The minimum amount of the bonds or insurance policies shall be subject to the approval of the commissioner, conditioned upon the observance of all applicable laws, rules and regulations governing the licensed activities and upon the payment of any judgment awarded for bodily injury, death or damage to or destruction of property occurring in the performance of any regulated work by or under the supervision of such licensee. Each bond or policy of insurance shall contain a provision for continuing liability notwithstanding any recovery thereunder. In addition, prior to the issuance of any plate or seal, or any renewal thereof, the applicant shall file with the department satisfactory evidence of compliance with the workers' compensation law and the disability benefits law.

f. All business vehicles, advertising and stationery used in connection with work or services requiring:

1. a master plumber license shall display prominently the full name of the licensee, the words “N.Y.C.licensed plumber”, and the licensee's plate number and business

address. If the business is conducted under a trade name, or by a partnership or corporation, the trade name, partnership or corporate name shall be placed immediately above the full name or names of the certified master plumber or master plumbers to whom the plate was issued.

2. a master fire suppression piping contractor license shall display prominently the full name of the licensee, the words "N.Y.C. licensed master fire suppression piping contractor-class A, B, or C," and the licensees plate number and business address. If the business is conducted under a trade name, or by a partnership or corporation, the trade name, partnership or corporate name shall be placed immediately above the full name or names of the certified master fire suppression piping contractor or contractors to whom the plate was issued.

g. If a licensed master plumber or licensed master fire suppression piping contractor withdraws from a partnership, corporation, or other business association operating pursuant to such plate, the right of such business to perform the work and service requiring such license shall lapse if the provisions of this subchapter are no longer satisfied.

h. Not more than one plate and seal shall be issued to the holder of a certificate, and upon such individual's death or retirement from performing work and services, or upon the revocation or suspension of his or her certificate, his or her plate and seal shall immediately be surrendered to the commissioner. Nothing contained herein shall be construed to prevent the legal representative of a deceased plate and seal holder, with the consent of the commissioner, from retaining such plate and seal for the purpose of completing all unfinished work of such deceased licensee for which plans have been approved and a permit issued, provided such work is performed by or under the direct and continuing supervision of a licensed master plumber or licensed master fire suppression piping contractor as appropriate and is completed within one year from the date of the death of the original licensee.

i. The licensed master plumber or licensed master fire suppression piping contractor, partnership, corporation or other business association as authorized by the code, shall maintain a place of business within the city of New York at the time of issuance of the plate and during the life thereof which is in conformance with the zoning regulations and the rules and regulations of the commissioner and which complies in other respects with the building code. The licensee shall promptly notify the commissioner of any change of address of his or her place of business within thirty calendar days of such change.

j. 1. An individual who is a licensed master plumber whose interest or ownership in a corporation, partnership or other business association constitutes any portion of the fifty-one per cent interest or control required by this subchapter shall be prohibited from possessing an interest or ownership in more than one other plumbing corporation, partnership or other business association at his or her established place of business, where such interest or ownership would constitute any portion of the fifty-one per cent interest or control required by this subchapter. Both corporations, partnerships or other business associations in which the individual who is a licensed master plumber has an interest shall be located at the same place of business. For the purposes of this subdivision, where two or more individuals who are licensed master plumbers possess an interest or ownership in any corporation, partnership or other business association which together represents more than fifty-one per cent of the interest or control of such entity, all of such licensees shall be deemed to possess a portion of the fifty-one percent interest or control required by this subchapter.

2. An individual who is a licensed master fire suppression piping contractor whose interest or ownership in a corporation, partnership or other business association constitutes any portion of the fifty-one per cent interest or control required by this subchapter shall be prohibited from possessing an interest or ownership in more that one other fire suppression piping corporation, partnership or other business association, at his or her established place of business, where such interest or ownership would constitute any portion of the fifty-one per cent interest or control required by this subchapter. Both corporations, partnerships or other business associations in which the individual who is a licensed master fire suppression piping contractor has an interest shall be located at the same place of business. For the purposes of this subdivision, where two or more individuals who are licensed master fire suppression piping contractors possess an interest or ownership in any corporation, partnership or other business association which together represents more than fifty-one per cent of the interest or control of such entity, all of such licensees shall be deemed to possess a portion of the fifty-one per cent interest or control required by this subchapter.

k. Nothing contained in this section shall be construed to prevent an individual, corporation, partnership or other business association authorized under the provisions of this subchapter from entering into a joint venture of limited duration for a particular project with another business entity similarly authorized.

Local Law 55-1989.

***§[B26-2.8] 26-149 Business operation, licensed master plumbers/licensed master fire suppression piping contractors.-**

a. The master plumber or fire suppression piping contractor, so licensed, shall conduct his or her business to provide direct and continuing supervision in accordance with the provisions of this subchapter.

b. All documents which are required to be filed with any department or agency of the city of New York shall bear the stamp of the seal as well as the signature of such licensee. The licensed master plumber or licensed master fire suppression piping contractor performing the work and services of the licensee shall personally sign all

applications and other documents required to be filed pursuant to the code.
c. All certificates of competence and all plates shall be recorded by the commissioner as provided in section 26-153 of this subchapter.
**** Local Law 55-1989.***

***§[B26-2.9] 26-150 Expiration and renewal of license.-**
a. All certificates of competence, plates and seals shall expire on the two-year anniversary date of the issuance of the certificate, plate and seal. Application for the biennial renewal of certificates, plates and seals shall be made between thirty and sixty days prior to the expiration/anniversary date. The failure of an individual to renew such certificate, plate and seal prior to the expiration/anniversary date shall have the effect of cancellation of the certificate, plate and seal. If a certificate, plate and seal is canceled, the individual shall apply for a new certificate, plate and seal.
b. Failure to apply for renewal of a certificate prior to its expiration shall not deprive the holder of the right of renewal during the ensuing year, except that the fee for such renewal after thirty days prior to the expiration date shall be one hundred dollars instead of fifty dollars.
c. If a holder of a certificate fails to renew his or her certificate for a period up to five years, reinstatement during that period shall occur upon the payment of a fee of fifty dollars for each year or part thereof after the expiration date.
d. If a holder of a certificate fails to renew his or her certificate for a period in excess of five years, the commissioner may require such person to submit to reexamination or to provide evidence of retained proficiency. In addition, the holder shall pay a fee of fifty dollars for each year or part thereof after the expiration date.
e. If a holder of a certificate has held a certificate of competency for five years without a plate and seal, then said person shall submit an affidavit satisfactory to the commissioner stating that over the five year period the individual has been engaged in the design and installation of :
1. Plumbing systems in the United States; or
2. Fire suppression piping systems in the United States.
****Local Law 55-1989; Local Law 51-2001.***

****§26-150.1 Renewals of Master Plumber and Fire Suppression Piping Contractor Licenses.-** A certificate of competence, plate and seal for a licensed master plumber and for a licensed fire suppression contractor shall be renewed provided that the certificate holder shall have satisfactorily completed a seven hour continuing education course approved by the department within two years prior to the renewal date. The content of the course and the qualifications of providers of the course shall be approved by the department in accordance with the rules of the department.

*****Local Law 51-2001.***

* **§[B26-2.10] 26-151 Suspension; revocation of license.-**
a. The commissioner shall have the power to suspend or revoke a certificate of competence and/or a licensee's plate and seal and/or to impose a fine not to exceed five thousand dollars for each finding and/or to order any licensed master plumber or licensed master fire suppression piping contractor to repair damage resulting from any act or omission enumerated in paragraph two of this subdivision upon the recommendation of the board after a hearing and finding of any one or more of the following:
(1) fraud or deceit in obtaining a certificate, plate or seal; or
(2) gross negligence, incompetence or misconduct relating to the business, trade or calling of the person who is licensed or certified; or
(3) fraudulent dealings; or
(4) failure to comply with the code or any order, regulation or requirement lawfully made by the commissioner; or
(5) failure to comply with any order, regulation or requirement lawfully made by the commissioner of environmental protection or commissioner of transportation pertaining to water services, house connections or street openings which relate to requirements of this subchapter or made by the fire commissioner relating to fire suppression piping matters; or
(6) a practice of failing timely to perform or complete contracts relating to home improvements as defined by section 20-386 of the code or a practice of abandoning contracts on residential buildings containing four dwelling units or less.
(7) poor moral character that adversely reflects on his or her fitness to conduct a plumbing or fire suppression piping contracting business.
b. The chairperson may request three individuals, at least two of whom shall be members of the board, to act as a hearing panel with the approval of the board. The panel shall conduct such hearing and issue a report and recommendation to the board in lieu of the hearing under subdivision a of this section; provided, however, that after such panel has issued a report and recommendation, the board may conduct such further proceedings with respect to the referenced matter as it deems advisable.
c. Any person claiming to have been injured by the fraud, deceit, negligence, incompetence or other misconduct of any person who is licensed or certified may prefer charges against such licensee before the board.
d. All charges and/or specifications shall be submitted by the commissioner in writing to the board or panel. Such charges, and/or specifications, unless dismissed without hearing by the commissioner as unfounded or trivial, shall be heard and determined by the board, with a recommendation to the commissioner.
e. The chairperson shall determine the time and place of such hearing. A copy of the charges and/or specifications, together with a notice of the time and place of hearing,

shall be served upon the accused personally or by certified or registered mail return receipt requested and by ordinary mail at least ten days before the day fixed for the hearing.
f. At such hearing, the accused shall have the right to appear personally, to be represented by counsel, to cross-examine witnesses, and to produce evidence and witnesses in his or her defense.
g. If a majority of the members of the board or hearing panel, as applicable, vote in favor of finding the accused guilty, the board or hearing panel may recommend the revocation or suspension of the certificate, plate and seal of the accused or such other action as it shall deem appropriate.
h. The fees required for the reinstatement of a certificate, plate and seal after suspension or revocation shall be the same as those required to obtain an original certificate, plate and seal. If reinstatement of the certificate, plate and seal, is not requested within thirty days of the lifting of the suspension or revocation, then appropriate late fees shall be imposed.
i. Nothing in this section shall deprive the commissioner of the power to refer an individual upon whom sanctions have been or may be imposed in accordance with this section to any governmental entity, including but not limited to any court of competent jurisdiction, for appropriate action.
Local Law 55-1989.

*** §[B26-2.11] 26-152 Practice without license and other violations; penalties; actions for penalties.-**
a. Any person not authorized to perform the work and services of a licensed master plumber or licensed master fire suppression piping contractor in accordance with the provisions of this subchapter or any person filing or attempting to file a licensed master plumber or licensed master fire suppression piping contractor's statement or other document on behalf of another, or representing himself or herself as another, or giving false or forged evidence of any kind to the commissioner or any other city official, or otherwise violating any of the provisions of this subchapter, shall be subject to a penalty of not less than five hundred dollars nor more than five thousand dollars for the first offense, and not less than one thousand dollars nor more than five thousand dollars for each and every subsequent offense, upon findings after administrative hearings by the board.
Local Law 55-1989.

***§[B26-2.12] 26-153 Publication of a roster of licensees.-**
a. The commissioner shall publish a complete roster of master plumber licensees and of master fire suppression piping contracting licensees in the City Record. Each roster shall be published biennially, with a supplement published in each alternate year.
b. Each roster shall contain an alphabetical listing of all holders of a certificate of competence. It shall also include the holders' certificate number as well as the business name and address of his or her employer. An additional list with the same information shall be printed in numerical order by certificate number.
c. Each roster shall also contain an alphabetical listing of corporations, partnerships, business associations and individuals authorized to engage in the plumbing contracting or fire suppression piping business within the city. Next to each business name shall be the name or names of the holders of licensed master plumber or licensed master fire suppression piping contractor plates, plate and seal numbers and business addresses.
d. Each supplement shall contain all the information described in subdivisions b and c of this section.
Local Law 55-1989.

*** §26-153.1 Waiver of examinations.-**
a. Any individual who, on or after the effective date of this section shall meet the following qualifications and who, within six months after the effective date of this section shall make application to the department of buildings for a master fire suppression piping contractor license, and within one year shall furnish all necessary evidence, shall be issued a certificate for the particular class for which he or she is qualified without taking the examination for such certificate required by this article, however all other provisions of this article, including but not limited to those governing the fire suppression piping contractor certificate shall apply to those individuals covered by this section.
1. class A-Any individual who, during the seven consecutive years immediately preceding his or her application for a master fire suppression piping contractor certificate-class A, has been engaged in the business of designing and installing fire suppression piping systems, as defined in paragraphs one and two of subdivision h of section 26-141, primarily in the city of New York.
2. class B-Any individual who, during the seven consecutive years immediately preceding his or her applicationfor a master fire suppression piping contractor certificate-class B, has been engaged in the business of designing and installing fire suppression piping systems, as defined in paragraph one of subdivision h of section 26-141, primarily in the city of New York.
3. class C-Any individual who, during the seven consecutive years immediately preceding his or her application for a master fire suppression piping contractor certificate-class C, has been engaged in the business of designing and installing fire suppression piping systems, as defined in paragraph two of subdivision h of section 26-141, but not including any dry chemical system, primarily in the city of New York; or any individual who qualifies under paragraph two of this subdivision may qualify under this paragraph upon the successful completion of an approved course in the design of carbon dioxide and dry, liquid or gaseous chemical extinguishing systems.
b. The department of buildings shall determine whether

an individual has been engaged in the business of designing and installing fire suppression piping systems. The following factors may be considered:
1. department of buildings records (i.e. permits, filings, plans, etc.).
2. self employment or employment by a piping contractor engaged in such business.
3. knowledge of applicable law, rules, regulations, directives and memorandums, and recognized national standards.
Local Law 55-1989.

ARTICLE 3 WELDER LICENSE

§[B26-3.0] 26-154 Requirement of license.-It shall be unlawful to perform manual welding work on any structural member of any building in the city on and after December sixth, nineteen hundred sixty-eight, unless such work is performed by a person licensed as a welder under the provisions of this article, or a person qualified or licensed as a welder prior to December sixth, nineteen hundred sixty-eight, as provided in section 26-131 of this subchapter.

§[B26-3.1] 26-155 License applications.-All applications for a welder license shall be subject to the provisions of section 26-132 of this subchapter; and all applicants for a welder license shall comply with and be subject to the provisions of sections 26-133, 26-134 and 26-135 of this subchapter.

§[B26-3.2] 26-156 License qualifications.-In addition to the general qualifications prescribed in section 26-133 of this subchapter, all applicants for a welder license shall submit satisfactory proof of the applicant's fitness to make structural welds, including his or her ability to pass operator qualification tests.

§[B26-3.3] 26-157 License fees.-The fee for a welder license shall be ten dollars; and the annual renewal fee shall be five dollars.

§[B26-3.4] 26-158 License conditions.-All welder licenses shall be conditioned upon and subject to the provisions of sections 26-136 through 26-139 of this subchapter.

ARTICLE 4
HIGH-PRESSURE BOILER OPERATING ENGINEER AND PORTABLE HIGH-PRESSURE BOILER OPERATING ENGINEER LICENSES

§[B26-4.0] 26-159 Requirement of license.-
a It shall be unlawful, on and after December sixth, nineteen hundred sixty eight to operate any high-pressure steam boiler for any purpose whatsoever in the city or in connection with any vessel on the waters in and around the city not subject to the jurisdiction of the United States government, unless such boiler is operated by or under the supervision and in the presence of a person having the requisite high-pressure boiler operating engineer license under the provisions of this article, or a person licensed as a high-pressure boiler operating engineer prior to December sixth, nineteen hundred sixty-eight, as provided in section 26-131 of this subchapter.
b. Notwithstanding subdivision a of this section, it shall be unlawful, on and after December third, nineteen hundred seventy to operate a portable high-pressure steam boiler for any purpose whatsoever in the city, unless such boiler is operated by or under the supervision and in the presence of a person licensed as a portable high-pressure boiler operating engineer.

§[B26-4.1] 26-160 Definition.-For the purposes of this article, a high-pressure boiler shall be defined as a boiler that carries a pressure of more than fifteen pounds of steam per square inch and is rated in excess of ten hp. or if such boiler produces hot water at a pressure of one hundred sixty psi or at a temperature over two hundred fifty degrees F.

§[B26-4.2] 26-161 License applications.-All applications for high-pressure boiler operating engineer and portable high-pressure boiler engineer licenses shall be subject to the provisions of section 26-132 of this subchapter; and all applicants for high-pressure boiler operating engineer and portable high-pressure boiler operating engineer licenses shall comply with and be subject to the provisions of sections 26-133, 26-134 and 26-135 of this subchapter.

§[B26-4.3] 26-162 License qualifications.-
a. In addition to the general qualifications prescribed in section 26-133 of this subchapter an applicant for a high-pressure boiler operating engineer license shall submit satisfactory proof establishing that he or she:
* (1) Has been employed as a fireman, oiler, general assistant, journeyman, boiler-maker or a machinist to a licensed high-pressure boiler operating engineer in a building or buildings in the city of New York for a period of five years of the seven years immediately preceding the date of his or her application, provided however, that, in lieu of the experience requirement contained in this paragraph, an applicant for a high-pressure boiler operating engineer license who is employed in a fossil fuel production plant located in the Rockaway Peninsula area of Queens county may submit satisfactory proof establishing that he or she has obtained at least five years experience within the seven years immediately preceding the date of his or her application which shall include at least two years of experience obtained during employment under the supervision of a licensed high pressure boiler operating engineer in a steam generating plant located outside of the city of New York but within the state of New York that is owned and operated by a licensed public

utility, and shall also include a separate period of at least three years of experience obtained during employment as a fireman, oiler, general assistant, journeyman, boiler-maker or any comparable position [*sic*] as approved by the commissioner, in such steam generating plant; or

(2) Has received the degree of mechanical engineer from a school or college recognized by the university of the state of New York and has had one year's experience in the operation and maintenance of high-pressure boilers under the supervision of a licensed high-pressure boiler operating engineer in the city of New York within the seven years immediately preceding the date of his or her application; or

(3) Has been a holder for a period of at least four years of a certificate as engineer issued by a board of examining engineers duly established and qualified pursuant to the laws of the United States or any state or territory thereof, or a certificate as a marine engineer issued by the United States Coast Guard and has had one year's experience in the city of New York in the operation and maintenance of stationary high-pressure boiler plants under the supervision of a licensed high-pressure boiler operating engineer within the seven years immediately preceding the date of his or her application; provided that the applicant shall have filed with his or her application his or her own signed statement that he or she is the person named in said certificate together with the supporting signed statements by three licensed high-pressure boiler operating engineers employed in the city of New York at the time of making of such signed statements; or

(4) Has had direct supervision, care, operation and maintenance of a steam generating plant of a governmental building, having boilers of 150 or more hp., for a period of five years immediately preceding the date of his or her application and has had in addition one year's experience on high-pressure boilers under the direct supervision of a licensed high-pressure boiler operating engineer in the city of New York, within the seven years immediately preceding the date of his or her application; or

(5) Has successfully completed as a registered apprentice an approved training program recognized by New York state apprenticeship council of at least two years and has had at least three years, experience in the city of New York in the operation and maintenance of high-pressure boilers under the supervision of a licensed high-pressure boiler operating engineer within the seven years immediately preceding the date of his or her application.

b. In addition to the general qualifications prescribed in section 26-133 of this subchapter, an applicant for a portable high-pressure boiler operating engineer's license shall submit satisfactory proof establishing that he or she:

(1) Has been the holder of a basic license as a hoisting machine operator as provided in article five of this subchapter for a period of three years immediately preceding the date of his or her application; and

(2) Has served as a fireman, oiler or assistant engineer on portable high-pressure boilers under the supervision of a licensed portable high-pressure boiler operating engineer in the city for a period of three years of the seven years immediately preceding the date of his or her application. However, two of the three years of the aforesaid required experience may be obtained outside the city of New York as a fireman, oiler, assistant engineer or engineer on portable high-pressure boilers.

Local Law 108-1993.

§[B26-4.4] 26-163 License fees.-The fee for a high-pressure boiler operating engineer license or a portable high-pressure boiler operating engineer license shall be twenty-five dollars; and the annual renewal fee shall be fifteen dollars. The renewal fee for a portable high-pressure boiler operating engineer license shall include the renewal fee for a hoisting machine operator license, as provided in subdivision d of section 26-170 of this subchapter without any additional fee. If application for renewal is not made within thirty calendar days prior to the expiration date of the license, the applicant shall be required to pay an additional fee of ten dollars.

§[B26-4.5] 26-164 License conditions.-All high-pressure boiler operating engineer licenses and all portable high-pressure boiler operating engineer licenses shall be conditioned upon and subject to the provisions of sections 26-136 through 26-139 of this subchapter.

§[B26-4.6] 26-165 Licensing of existing operating engineers.- Any person who has been performing the duties of an operating engineer on a high temperature hot water plant whose experience as such has been for a period of three years immediately preceding the enactment of this code shall be entitled to a high- pressure boiler operating engineer license without complying with the herein above provisions upon satisfying the commissioner that such applicant possesses the aforesaid experience.

ARTICLE 5
HOISTING MACHINE OPERATOR LICENSE

§[B26-5.0] 26-166 Requirement of license.-It shall be unlawful for any persons to take charge of or operate any power operated hoisting machine used for hoisting purposes or cableways under the jurisdiction of the department, except power operated scaffolds and window washing machines, unless such person is licensed under the provisions of this article, or a holder of a certificate of qualification as a hoisting machine operator prior to December twenty-ninth, nineteen hundred sixty-nine, as provided in section 26-131 of this subchapter. The commissioner may, by rule and regulation, exempt operators of mobile cranes of limited size and capacity from the requirements of this section.

§[B26-5.1] 26-167 License applications.-
All applications for a hoisting machine operator license shall be subject to the provisions of section 26-132 of this subchapter; and all applicants for a hoisting machine operator license shall comply with and be subject to the provisions of sections 26-133, 26-134 and 26-135 of this subchapter.

§[B26-5.2] 26-168 Classification of licenses.-Such licenses shall be classified as follows:
(a) Basic license to operate cranes, derricks and cableways, excluding power operated cranes with booms, including jibs and other extensions, which exceed two hundred feet in length and truck mounted tower cranes which exceed two hundred feet in height.
(b) Endorsement on basic license to include the operation of hoisting machinery without limitation or restriction.
(c) Special hoisting machine operator license to operate a specified class of hoisting machine of limited size and capacity. The equipment under this subdivision shall also include the operation of truck cranes with telescopic, hydraulic or folding booms, including jibs and any other extensions to the boom, not exceeding one hundred thirty-five feet in length with a manufacturer's rated capacity of three tons or less used exclusively for the erection, maintenance or removal of signs. Special hoisting machine operators shall be exempt from the provisions of subdivisions (a) and (b) of this section.

§[B26-5.3] 26-169 License qualifications.-
(a) The general qualifications prescribed in section 26-133 of this subchapter shall be applicable for a hoisting machine operator license and a special hoisting machine operator license. In addition, all applicants for a hoisting machine operator license shall have had at least two years' prior appropriate experience and all applicants for a special hoisting machine operator license shall have the qualifications as prescribed in subdivision (c) of this section.
(b) (1) The commissioner shall issue a basic license to a hoisting machine operator who is the holder of a valid certificate of qualification on December twenty-ninth, nineteen hundred sixty-nine, provided application for such license is made prior to the expiration of said certificate of qualification.
(2) The commissioner shall endorse such license to include the operation of hoisting machinery without limitation or restriction to a holder of a valid certificate of qualification on December twenty-ninth, nineteen hundred sixty-nine, provided application for such endorsement is made prior to the expiration of said certificate and he or she submits proof of satisfactory experience in the operation of cranes with booms, including jibs and other extensions, exceeding two hundred feet in length or truck mounted tower cranes exceeding two hundred feet in height.
(3) The commissioner shall endorse such license to include the operation of hoisting machinery without limitation or restriction to a holder of a valid certificate of qualification on December twenty-ninth, nineteen hundred sixty-nine, provided that the applicant shall satisfactorily demonstrate by operation that he or she is competent to operate a crane with a boom, including jibs and other extensions, exceeding two hundred feet in length or truck mounted tower crane exceeding two hundred feet in height.
(c) Notwithstanding the provisions of section 26-134 of this subchapter, the commissioner shall issue a special hoisting machine operator license to an applicant who shall have had at least two years' full time paid experience and who makes application by December twenty-ninth, nineteen hundred seventy, or has satisfactorily passed a practical examination in the operation of equipment for which such license is to be issued.

§[B26-5.4] 26-170 License fees.-The fee for a license shall be as follows:
(a) Ten dollars for a license, as described in paragraphs one and two of subdivision (b) of section 26-169 of this subchapter.
(b) Twenty-five dollars for a license as provided in subdivision c of section 26-168 of this subchapter.
(c) Fifty dollars for a license as provided in subdivisions (a) and (b) of section 26-168 and paragraphs one and three of subdivision (b) of section 26-169 of this subchapter.
(d) Ten dollars for the annual renewal of any license.

§[B26-5.5] 26-171 License conditions.-All licenses shall be conditioned upon and subject to the provisions of sections 26-136 through 26-139 of this subchapter.

ARTICLE 6
RIGGER LICENSE

§[B26-6.0] 26-172 Requirement of license.-It shall be unlawful to hoist or lower any article on the outside of any building in the city of New York on and after December sixth, nineteen hundred sixty-eight, unless such work is performed by or under the supervision of a person licensed as a rigger under the provisions of this article, or a person qualified or licensed as a rigger prior to such date as provided in section 26-131 of this subchapter. The provisions of this article shall apply to the erection or dismantling of a tower crane or a climber crane on a building and to the use of a derrick in their removal, except that such erection or dismantling may be performed by or under the direct supervision of a person licensed by the city for such purpose in accordance with rules and regulations promulgated by the department.

§[B26-6.1] 26-173 Exemptions.-The provisions of this article shall not apply to the hoisting or lowering of signs

if the person so doing possesses a license as a sign hanger, as provided in article seven of this subchapter, or to the hoisting or lowering of any building materials or equipment, other than boilers and tanks, in the course of the construction or alteration of any building or structure.

§[B26-6.2] 26-174 Classification of rigger licenses.- Such licenses shall be classified as follows:
(a) **Master rigger license**.-Licenses the holder thereof to hoist or lower any article, irrespective of weight, on the outside of any building.
(b) **Special rigger license**.-Licenses the holder thereof to hoist or lower any article, not exceeding one thousand two hundred pounds in weight, on the outside of any building.

§[B26-6.3] 26-175 License applications.-All applications for rigger licenses shall be subject to the provisions of section 26-132 of this subchapter; and all applicants for such licenses shall comply with and be subject to the provisions of sections 26-133, 26-134 and 26-135 of this subchapter.

§[B26-6.4] 26-176 Master rigger qualifications.-In addition to the general qualifications prescribed in section 26-133 of this subchapter, all applicants for a master rigger license shall submit satisfactory proof establishing that the applicant has had at least 5 years' practical experience in the hoisting and rigging business; and the applicant shall also have knowledge of and be able to explain the risks incident to such business and precautions to be taken in connection therewith, safe loads [*sic*] and computation thereof, types of rigging, size and strength of ropes, cables, blocks, poles, derricks, sheerlegs and other tools used in connection with such business.

§[B26-6.5] 26-177 Special rigger qualifications.-In addition to the general qualifications prescribed in section 26-133 of this subchapter, all applicants for a special rigger license shall submit satisfactory proof establishing that the applicant has had at least one year's practical experience in the hoisting and rigging business; and the applicant shall also have knowledge of and be able to explain the risks incident to such business and precautions to be taken in connection therewith.

§[B26-6.6] 26-178 Bond requirements.-
a. Prior to the issuance of any master rigger license, the applicant shall file with the department a liability bond in the form of a personal bond with at least two sureties, approved by the commissioner, or a corporate surety bond, or policy of insurance, in a solvent and responsible company authorized to do business in this state, approved by the commissioner, in the sum of fifty thousand dollars conditioned for the payment of any judgment recovered against such rigger for the death of or for injury to any person caused in the operation, maintenance or use of any rigging equipment or while engaged in any rigging operation. Such bond or policy may limit the liability of the surety or insurer on any one judgment to the sum of fifty thousand dollars for bodily injury or death, and on all judgments recovered upon claims arising out of the same transaction or transactions connected with the same subject of action, to the sum of one hundred thousand dollars, to be apportioned ratably among the judgment creditors, according to the amount of their respective judgments; and such bond or policy of insurance shall contain a provision for continuing liability thereunder, notwithstanding any recovery thereon.
b. Prior to the issuance of any master rigger license the applicant shall also file with the department a property damage bond in the form of a personal bond with at least two sureties, approved by the commissioner, or a corporate surety bond, or a policy of insurance, in a solvent and responsible company authorized to do business in this state, approved by the commissioner, in the sum of ten thousand dollars, conditioned for the payment of any judgment recovered against such rigger for damage to, or destruction of, property caused in the operation, maintenance or use of any rigging equipment or while engaged in any rigging operation. Such bond or policy of insurance shall contain a provision for a continuing liability thereunder, notwithstanding any recovery thereon.
c. Prior to the issuance of any special rigger license, the applicant shall file with the department a liability bond similar to that required of a master rigger, except that the limits thereof shall be ten thousand dollars and twenty thousand dollars, respectively, and shall also file with the department a property damage bond similar to that required of a master rigger, except that the limit thereof shall be one thousand dollars.

§[B26-6.7] 26-179 Workers' compensation.-Prior to the issuance of any rigger license, and any renewal thereof, the applicant shall file with the department satisfactory evidence of compliance with the provisions of the state workers' compensation law.

§[B26-6.8] 26-180 License fees.-The fee for a master rigger license shall be one hundred fifty dollars; and the annual renewal fee shall be one hundred dollars. The fee for a special rigger license shall be thirty dollars; and the annual renewal fee shall be twenty-five dollars. If application for renewal is not made within thirty calendar days prior to the expiration date of the license, the applicant shall be required to pay an additional fee of twenty dollars.

§[B26-6.9] 26-181 License conditions.-
a. All rigger licenses shall be conditioned upon and subject to the provisions of sections 26-136 through 26-139 of this subchapter. In addition, every licensed rigger shall, while rigging operations are in progress, have placed conspicuously on the job two metal plates or wooden signs not less than eighteen inches by twenty-four

inches in size, displaying the word "danger" in letters not less than six inches high, and marked with the rigger's name, address, type of rigger license and license number.
b. Every licensed master rigger shall display prominently to the public on the place where his or her business is conducted, a metal plate or sign marked with the words "master rigger" and his or her license number immediately thereunder.
c. The holder of a rigger license shall at the time of issuance of the license and during the life thereof, have an established place of business within the city of New York. The licensee shall notify the commissioner of any change of address of his or her place of business.

ARTICLE 7
SIGN HANGER LICENSES

§[B26-7.0] 26-182 Requirement of license.-It shall be unlawful to hoist or lower or to hang or attach any sign upon or on the outside of any building in the city after December sixth, nineteen hundred sixty-eight, unless such work is performed by or under the supervision of a person licensed as a sign hanger under the provisions of this article, or a person qualified or licensed as a sign hanger prior to December sixth, nineteen hundred sixty-eight, as provided in section 26-131 of this subchapter.

§[B26-7.1] 26-183 Classification of sign hanger licenses.-
Such licenses shall be classified as follows:
(a) Master sign hanger license.-Licenses the holder thereof to hoist or lower or to hang or attach any sign, irrespective of weight, upon or on the outside of any building**.**
(b) Special sign hanger license.-Licenses the holder thereof to hoist or lower or to hang or attach any sign, not exceeding one hundred fifty square feet in area, measured on one side only, nor exceeding one thousand two hundred pounds in weight, upon or on the outside of any building.

§[B26-7.2] 26-184 Exemptions.-The provisions of this subchapter shall not apply (a) to signs not exceeding seventy-five square feet in area, measured on one side only, nor exceeding twenty-five pounds in weight; or (b) to signs supported directly on the ground; or (c) to directional signs; or (d) to temporary signs erected during the construction or alteration of a building and related to such work; or (e) to the erection or placing of any signs by employees of the city, any city department or other governmental agency.

§[B26-7.3] 26-185 License applications.-All applications for sign hanger licenses shall be subject to the provisions of section 26-132 of this subchapter; and all applicants for such licenses shall comply with and be subject to the provisions of sections 26-133, 26-134 and 26-135 of this subchapter.

§[B26-7.4] 26-186 Master sign hanger qualifications.-In addition to the general qualifications prescribed in section 26-133 of this subchapter, all applicants for a master sign hanger license shall submit satisfactory proof establishing that the applicant has had at least five years practical experience in sign hanging during the period of seven years immediately preceding the date of his or her license application; and the applicant shall also have a knowledge of and ability to read plans and specifications relating to sign construction and erection, including supporting framework and other supports, and a knowledge of the problems and practices of sign construction and hanging and be familiar with the equipment and tools used in sign hanging.

§[B26-7.5] 26-187 Special sign hanger qualifications.-In addition to the general qualifications prescribed in section 26-133 of this subchapter, all applicants for a special sign hanger license shall submit satisfactory proof establishing that the applicant has had at least three years' practical experience in sign hanging during the period of five years immediately preceding the date of the license application; and the applicant shall also have a knowledge and ability to read plans and specifications relating to sign construction and erection, including supporting framework and other supports, and a knowledge of the problems and practices of sign construction and hanging and be familiar with the equipment and tools used in sign hanging.

§[B26-7.6] 26-188 Bond requirements.-
a. Prior to the issuance of any sign hanger license, the applicant shall file with the department a liability bond in the form of a personal bond with at least two sureties, approved by the commissioner, or a corporate surety bond, or policy of insurance, in a solvent and responsible company authorized to do business in this state, approved by the commissioner, in the sum of fifty thousand dollars conditioned for the payment of any judgment recovered against such sign hanger for the death of or for injury to any person caused in the operation, maintenance or use of any sign hanging equipment or while engaged in any sign hanging operation. Such bond or policy may limit the liability of the surety or insurer on any one judgment to the sum of fifty thousand dollars for bodily injury or death, and on all judgments recovered upon claims arising out of the same transaction or transactions connected with the same subject of action, to the sum of one hundred thousand dollars, to be apportioned ratably among the judgment creditors, according to the amount of their respective judgments; and such bond or policy of insurance shall contain a provision for continuing liability thereunder, notwithstanding any recovery thereon.
b. Prior to the issuance of any sign hanger license, the applicant shall also file with the department a property

damage bond in the form of a personal bond with at least two sureties, approved by the commissioner, or a corporate surety bond, or a policy of insurance, in a solvent and responsible company authorized to do business in this state, approved by the commissioner, in the sum of ten thousand dollars, conditioned for the payment of any judgment recovered against sign hanger for damage to, or destruction of, property caused in the operation, maintenance or use of any sign hanging equipment or while engaged in any sign hanging operation. Such bond or policy of insurance shall contain a provision for a continuing liability thereunder, notwithstanding any recovery thereon.

§[B26-7.7] 26-189 Workers' compensation.-Prior to the issuance of any sign hanger license, and any renewal thereof, the applicant shall file with the department satisfactory evidence of compliance with the provisions of the state workers' compensation law.

§[B26-7.8] 26-190 License fees.-The fee for a master sign hanger license shall be one hundred dollars and the annual renewal fee for such license shall be fifty-five dollars; the fee for a special sign hanger license shall be seventy-five dollars, and the annual renewal fee shall be forty dollars. If application for renewal is not made within thirty calendar days prior to the expiration date of the license, the applicant shall be required to pay an additional fee of thirty dollars.

§[B26-7.9] 26-191 License conditions.-
a. All sign hanger licenses shall be conditioned upon and subject to the provisions of sections 26-136 through 26-139 of this subchapter. In addition, every licensed sign hanger shall, while sign hanging operations are in progress, have placed conspicuously on the job two metal plates or wooden signs not less than eighteen inches by twenty-four inches in size, displaying the word "danger" in letters not less than six inches high, and marked with the sign hanger's name, address, type of "sign hanger" license and license number.
b. Every licensed sign hanger shall display prominently to the public on the place where his or her business is conducted, a metal plate or sign marked with the words "sign hanger" and his or her license number immediately thereunder.
c. The holder of a sign hanger license shall at the time of issuance of the license and during the life thereof, have an established place of business within the city of New York. The licensee shall notify the commissioner of any change of address of his or her place of business.

ARTICLE 8
OIL-BURNING EQUIPMENT INSTALLER LICENSE

§[B26-8.0] 26-192 Requirement of license.-It shall be unlawful to install oil-burning equipment in the city on and after December sixth, nineteen hundred sixty-eight, unless such work is performed by or under the supervision of a person licensed as an oil-burning equipment installer under the provisions of this article, or a person qualified or licensed as an oil-burning equipment installer prior to December sixth, nineteen hundred sixty-eight, as provided in section 26-131 of this subchapter.

§[B26-8.1] 26-193 Classification of oil-burning equipment installer licenses.-
Such licenses shall be classified as follows:
(a) Class A oil-burning equipment installer license.-Licenses the holder thereof to install any type of oil-burning equipment, as an independent contractor with full responsibility for the manner in which the work is done, and for the material and equipment used, and for the control and supervision of the persons employed on the work.
(b) Class B oil-burning equipment installer license.-Licenses the holder thereof to install oil-burning equipment for the use of domestic fuel oils from number one fuel oil and including number four fuel oil (as classified in the current commercial standards published by the United States department of commerce), as an independent contractor with full responsibility for the manner in which the work is done, for the materials and equipment used, and for the control and supervision of the persons employed on the work.

§[B26-8.2] 26-194 License applications.-
All applications for oil-burning equipment installer licenses shall be subject to the provisions of section 26-132 of this subchapter; and all applicants for such licenses shall comply with and be subject to the provisions of sections 26-133, 26-134 and 26-135 of this subchapter.

§[B26-8.3] 26-195 Class A oil-burning equipment installer qualifications.-In addition to the general qualifications prescribed in section 26-133 of this subchapter, all applicants for a class A oil-burning equipment installer license shall submit satisfactory proof establishing that the applicant has had at least four years' practical experience in the installation of oil-burning equipment under the supervision of a qualified or licensed oil-burning equipment installer in the city, including at least one years experience in the installation of oil-burning equipment for the use of number five and number six fuel oils.

§[B26-8.4] 26-196 Class B oil-burning equipment installer qualifications.-In addition to the general qualifications prescribed in section 26-133 of this subchapter, all applicants for a class B oil-burning equipment installer license shall submit satisfactory proof establishing that the applicant has had at least three years' practical experience in the installation of oil-burning equipment under the supervision of a qualified

or licensed oil-burning equipment installer in the city.

§[B26-8.5] 26-197 Bond requirement.-Prior to the issuance of any oil-burning equipment installer license, the applicant shall file with the department a bond conditioned for the payment of any loss or damage suffered by any person by reason of failure to install such equipment in accordance with the provisions of the code, the building code, the air pollution code or other applicable laws and regulations relating to oil-burning equipment. Such bond shall be in the amount of two thousand five hundred dollars and shall be approved by the commissioner as to sufficiency of sureties.

§[B26-8.6] 26-198 License fees.-The fee for an oil-burning equipment installer license shall be seventy-five dollars; and the annual renewal fee shall be fifty dollars. If application for renewal is not made within thirty calendar days prior to the expiration date of the license, the applicant shall be required to pay an additional fee of thirty dollars.

§[B26-8.7] 26-199 License conditions.-a. All oil-burning equipment installer licenses shall be conditioned upon and subject to the provisions of sections 26-136 through 26-139 of this subchapter.

b. The holder of an oil-burning equipment installer license shall, at the time of issuance of the license and during the life thereof, have an established place of business within the city of New York. The licensee shall notify the commissioner of any change of address of his or her place of business.

ARTICLE 9
CONCRETE TESTING LABORATORY LICENSE

§[B26-9.0] 26-200 Requirement of license.-It shall be unlawful, on and after December sixth, nineteen hundred sixty-eight, for any person to engage in or carry on the business or calling of a concrete testing laboratory in the city, without having first obtained a license therefor from the commissioner, except as provided in section 26-131 of this subchapter.

§[B26-9.1] 26-201 License applications.-All applications for a concrete testing laboratory license shall be submitted on forms furnished by the department, and shall be accompanied by the required fee, as hereinafter provided. Each application for such license shall set forth the name and business address of the applicant, and such information and supporting data concerning his or her equipment and qualifications as the commissioner may require. If the applicant is a partnership or a corporation, the application shall be executed by a member of the partnership or by an officer of the corporation.

§[B26-9.2] 26-202 License qualifications.-All applicants for such license shall maintain a laboratory within fifty miles of the city, and shall submit satisfactory proof establishing that his, her or its business is conducted by qualified personnel in accordance with procedures, safety requirements and professional standards adopted and promulgated by the commissioner under and pursuant to the provisions of subdivision b of section eleven hundred five of the charter. An investigation of the applicant's place of business equipment and personnel shall be made by the department prior to the issuance of any such license.

§[B26-9.3] 26-203 License fees.-The fee for a concrete testing laboratory license shall be one hundred dollars; and the annual renewal fee shall be fifty dollars. If application for renewal is not made within thirty calendar days prior to the expiration date of the license, the applicant shall be required to pay an additional fee of thirty dollars.

***§[B26-9.4] 26-204 License conditions.-**

(a) All concrete testing laboratory licenses shall be conditioned upon and subject to the provisions of sections 26-136 through 26-139 of this subchapter; and all concrete testing laboratories licensed under the provisions of this article, or qualified or licensed prior to December sixth, nineteen hundred sixty-eight, as provided in section 26-131 of this subchapter, shall certify the truth and accuracy of all reports filed or required to be filed by any such laboratory under the provisions of the building code or other applicable building laws and regulations.

(b) Each laboratory shall have in responsible charge a director who shall be a registered architect or licensed professional engineer and who shall personally supervise all technical functions of the laboratory relating to testing of concrete and concrete materials.

Local Law 65-1990.

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BUILDING CONSTRUCTION

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ARTICLE 1
GENERAL PROVISIONS

§[C26-10.0] 26-205 Matters covered.—All matters affecting or relating to the construction, alteration, repair, demolition, removal, maintenance, occupancy and use of new and existing buildings in the city, including the erection, installation, alteration, repair, maintenance, use and operation of signs and service equipment used in or in connection therewith, are presumptively provided for in this subchapter and in the building code of the city. This subchapter does not presumptively provide for matters that are contained in the charter, the labor law, the multiple dwelling law, subchapters one and two of this chapter and chapter two of title twenty-seven, the zoning resolution, or the general city law; nor does this subchapter apply to structures on waterfront property used in conjunction with and in the furtherance of waterfront commerce and/or

navigation, or to bridges, tunnels or subways, or to structures appurtenant thereto.

§[C26-11.0] 26-206 All new work to conform.-
All building work performed in the city on and after December sixth, nineteen hundred sixty-eight, shall conform to the provisions of this subchapter except that any work for which an application for a permit was filed prior to December sixth, nineteen hundred sixty-eight, and any work for which an application for a permit is filed within twelve months after the effective date of this subchapter, may be performed, at the option of the owner, in its entirety either in accordance with and subject to the requirements of this subchapter or in accordance with and subject to the requirements of the building laws and regulations previously in force in the city, provided that such work is commenced within twelve months after the date of issuance of a permit therefor and is continuously carried on to completion. This section shall not apply to the requirements of article ten of subchapter nineteen of title twenty-seven of the code which shall become effective December twenty-ninth, nineteen hundred sixty-nine.

ARTICLE 2 PERMITS

§[C26-20.0] 26-207 Requirement of permit.-
It shall be unlawful, on and after December sixth, nineteen hundred sixty-eight, to construct, alter, repair, demolish, or remove any building in the city, or to erect, install, alter, repair, or use or operate any signs or service equipment in or in connection therewith, unless and until a written permit therefor shall have been issued by the commissioner in accordance with the requirements of this subchapter and the requirements of the building code, subject to such exceptions and exemptions as may be therein provided.

§[C26-21.0] 26-208 Approval of plans.-
Whenever plans are required to be filed in connection with an application for a permit, as provided in the building code, all such plans shall be approved by the commissioner prior to the commencement of any work thereunder. All plans and all applications for approval thereof, shall comply with the requirements of the building code, subject to such exceptions and exemptions as may be therein provided; and all elevations on plans shall be referred to the United States coast and geodetic survey mean sea level datum of nineteen hundred twenty-nine, which is hereby established as the city datum.

§[C26-22.0] 26-209 Signature to permit.—Every permit issued by the commissioner shall have his or her signature affixed thereto; but the commissioner may authorize any subordinate to affix such signature.

ARTICLE 3 FEES

§[C26-30.0] 26-210 Requirement of fee.—No work permit or equipment use permit, when required by the provisions of the building code, shall be issued, and no plans or other statement describing building work, when required by the provisions of the building code, shall be approved, unless and until the required fee or fees therefor shall have been paid to the department in accordance with the provisions of this article, except that no fees shall be payable for work permits, equipment use permits or places of assembly permits if the owner of the building or property affected is a corporation or association organized and operated exclusively for religious, charitable or educational purposes, or for one or more such purposes, no part of the earnings of which enures to the benefits of any private shareholder or individual, and provided that the property affected is to be used exclusively by such corporation or association for one or more of such purposes.

***§[C26-31.0] 26-211 Fee for approval of plans and work permits.-**
The fees required to be paid under this section, and under section 26-212 of this article, are for the filing and processing of applications for the approval of plans or other statement describing building work, the filing and processing of permit applications, the issuance or renewal of work permits, the inspection of building work, and the issuance of certificates of occupancy. Fifty percent of the total fee for the work permit, but not less than one hundred dollars, or the total fee for the work permit where such fee is less than one hundred dollars, shall be paid by or on behalf of the owner or lessee of the building premises or property affected and shall accompany the first application for the approval of plans or other statement describing the building work when submitted prior to submission of the permit application; and the whole or remainder of the total fee shall be paid before the work permit may be issued. A fee of one hundred dollars shall be paid with an application for renewal of a work permit. Foundation work, plumbing work, sign and service equipment work are included in the term "building" whenever plans for such work are required to be filed with construction or alteration plans; otherwise, separate fees shall be applied and collected for such work in accordance with the provisions of this section and section 26-212 of this article.
Local Law 38-1990.

***§[C26-32.0] 26-212 Computation of fees for work permits.-**
Fees for work permits shall be computed as hereinafter provided:
****1. New buildings**.—The fees for permits to construct new buildings and open air stadia shall be computed as follows:
(a) Except as otherwise provided in paragraph (b),

twenty-five cents and fifty-three one hundredths of a cent (25.53¢) per square foot or fraction thereof, of the total floor area of the new building, but not less than one hundred dollars per structure.

(b) For a one, two or three family dwelling eleven cents and sixty-three one hundredths of a cent (11.63¢) per square foot, or fraction thereof, of the total floor area of the new building, but not less than one hundred dollars per structure.

(c) One hundred dollars for a garage for not more than three cars when such garage is accessory to a one, two or three family dwelling on the same plot when plans for such garages are filed with the application and plans for the one, two or three family dwellings to which it is accessory.

(d) One hundred dollars for the first two thousand dollars, or fraction thereof, of the cost of the structure; twenty dollars for each additional one thousand dollars, or fraction thereof, of cost to five thousand dollars of the structure; ten dollars and thirty cents for each additional one thousand dollars, or fraction thereof, of the structure cost over five thousand dollars for structures such as radio aerial towers and masts, tank structures, fire escapes and other structures to which fees may not be readily applied under the foregoing provisions. Applications for elevator work submitted separately, seventy dollars.

******Local Law 56-1993; Local Law 38-1990.***

****2. Building alterations.—**The fees for permits to alter buildings shall be computed as follows:

(a) For a one-family, two-family or three-family dwelling, one hundred dollars for the first five thousand dollars or fraction thereof, of the cost of alteration; not including the cost for the installation or alteration of any plumbing or plumbing system or fire suppression piping system; and five dollars and fifteen cents per one thousand dollars, or fraction thereof, of such cost of alterations in excess of five thousand dollars.

(b) For any building not described in paragraph (a) of this subdivision, one hundred dollars for the first three thousand dollars, or fraction thereof, of the cost of alteration; not including the cost for the installation or alteration of any plumbing or plumbing system or fire suppression piping system; twenty dollars per one thousand dollars, or fraction thereof, of the next two thousand dollars of such cost; and ten dollars and thirty cents per one thousand dollars, or fraction thereof, of such cost of alterations in excess of five thousand dollars.

*****Local Law 109-1993; Local Law 107-1993; Local Law 56-1993; Local Law 38-1990; Local Law 40-1987, applies to permits applied for and inspections performed on and after July 6, 1987.***

***3. Foundation, open spaces, etc.—**The fees for foundations and earth work permits, and for permits with respect to open spaces without roof, whether enclosed or unenclosed on sites, such as parking lots, gasoline or oil selling stations, storage yards, sales or exhibition or show spaces used for generally similar purposes shall be computed as follows: (a) ten dollars for each two thousand square feet of area or fraction thereof, but not less than one hundred dollars; and (b) for golf driving ranges, seven dollars and fifty cents for each twenty thousand square feet of area or fraction thereof, but not less than one hundred dollars plus one hundred dollars for an accessory building not to exceed one hundred forty-four square feet.

****Local Law 38-1990.***

*****4. Demolition and removal.—**The fees for demolition and removal permits shall be computed by multiplying the street frontage in feet by the number of stories of the building times two dollars and sixty cents, provided the minimum fee shall be not less than two hundred sixty dollars. In the case of a corner lot, the larger street frontage shall be used in computation.

******Local Law 50-1988.***

****5. Plumbing and fire suppression piping systems.-**

(a) Existing buildings. - The fees for permits to install and alter plumbing and plumbing systems and for permits to install and alter fire suppression piping systems in existing buildings shall be computed as follows:

(1) For a one-family, two-family or three-family dwelling, one hundred dollars for the first five thousand dollars, or fraction thereof, of the cost of such installation or alteration; and five dollars and fifteen cents per one thousand dollars, or fraction thereof, of such cost in excess of five thousand dollars.

(2) For any building not described in subparagraph (1) of this paragraph, one hundred dollars for the first three thousand dollars, or fraction thereof, of the cost of such installation or alteration; twenty dollars per one thousand dollars or fraction thereof, of the next two thousand dollars of such cost; and ten dollars and thirty cents per one thousand dollars, or fraction thereof, of such cost in excess of five thousand dollars.

(b) New buildings. - The fees for permits to install plumbing systems and for permits to install fire suppression piping systems in new buildings shall be computed by allocating a portion of the fee for the permit to construct such new building, computed in the manner provided in subdivision one, to the applicable plumbing permit or fire suppression piping system permit, but in no event shall the fee for a permit to install a plumbing system or for a permit to install a fire suppression piping system in a new building be less than one hundred dollars. Such allocation shall be made in accordance with rules promulgated by the commissioner. Any portion of the fee charged for a permit to install a plumbing system or of the fee charged for a permit to install a fire suppression piping system in a new building that is in excess of one hundred dollars shall be deducted from the amount of the fee, computed in the manner provided in subdivision one, charged for the permit to construct such new building.

*****Local Law 109-1993; Local Law 107-1993; Local Law 38-1990.***

* **6. Signs.—**

a. The fees for permits to erect, install or alter signs shall be computed in the same manner as the computation of fees for building alterations as provided in subdivision two of this section. In addition, fees shall be payable to the department as follows:

(1) For ground signs five dollars for each one hundred square feet or fraction thereof, but not less than thirty-five dollars.

(2) For roof signs having a tight, closed or solid surface, fifteen dollars for each one hundred square feet or fraction thereof, but not less than seventy dollars.

(3) For roof signs that do not have a tight, closed or solid surface, fifteen dollars for each one hundred square feet or fraction thereof, when such signs extend to a height of not more than thirty-one feet above roof level, but not less than one hundred dollars. When such signs exceed thirty-one feet above the roof level, twenty-five dollars for each one hundred square feet or fraction thereof, but not less than one hundred thirty-five dollars.

(4) For illuminated signs projecting beyond street line having thirty square feet or less, forty-five dollars annually.

(5) For illuminated signs projecting beyond street line having more than thirty square feet but no more than fifty square feet, seventy dollars annually.

(6) For illuminated signs projecting beyond street line and having more than fifty square feet, seventy-five cents per square foot or part thereof annually, but not less than one hundred dollars.

b. In computing the fees to be charged in subparagraphs one, two and three of paragraph a of this subdivision, each face of any sign, when fronting on different streets, shall be treated as a separate sign.

c. In computing the fees to be charged under subparagraphs four, five and six of paragraph a of this subdivision, only the number of square feet of sign space on one side of such sign shall be used in computing such fee.

* **7. Service equipment.—**

Local Law 38-1990.

**a. The fees for permits to install or alter service equipment, other than fire suppression piping systems, shall be computed in the same manner as the computation of fees for alteration of buildings, except as hereinafter provided.

****Local Law 107-1993.***

b. The fees hereinafter provided for permits to install and alter oil-burning equipment shall cover the costs for the filing and processing of applications for the approval of plans or other statement describing the work, the filing and processing of permit applications and the issuance of work permits and the inspection in connection therewith.

(1) For the installation of oil-burning equipment other than that described in subparagraph two of paragraph b of this subdivision, the fee shall be forty-five dollars.

(2) For the installation of oil-burning equipment where the storage tank exceeds two hundred seventy-five gallon capacity, or where the storage tank is less than two hundred seventy-five gallons and is to be buried, or is to be installed in a multiple dwelling, or a place of assembly, or in a building along the line of a subway, or is to deliver fuel oil to a burner installed above the lowest floor of a business building, the fee shall be as follows:

one hundred dollars where gross output of equipment is up to and including six million BTU per hour, one hundred thirty-five dollars where gross output is from six million one thousand to twelve million BTU per hour, and one hundred seventy-five dollars where gross output exceeds twelve million BTU per hour. Where the replacement or alteration involves the size of the combustion chamber, the atomization of the fuel used or the maximum capacity of the system, such replacement or alteration shall be considered an installation; except that where the installation involves only a replacement of or alteration of the refractory combustion chamber, regardless of change of gross output, the fee shall be one hundred dollars.

(3) Gross outputs of oil-burning equipment are to be determined as follows:

(a) Cast iron boilers.—The gross IBR rating shown in column A-1 identified with the net IBR rating shown in column A-4 of table A for automatically fired boilers in the July, nineteen hundred fifty-two "IBR testing and rating code for low pressure cast iron boilers" published by the institute of boiler and radiator manufacturers, or the equivalent in later codes.

(b) Steel Boiler Institute (SBI) table one, two and three boilers.—One and one-half times the SBI net rating in BTU per hour.

(c) Warm air furnaces.—The bonnet delivery in BTU per hour as published in the manufacturer's catalogue.

(4) For the replacement of oil burning equipment as described in subparagraph (1) of this paragraph, the fee shall be thirty-five dollars, and the replacement of oil burning equipment as described in subparagraph two of this paragraph, except where such replacement is considered an installation, the fee shall be one hundred dollars.

Local Law 38-1990.

*8. After an application has been withdrawn by the owner, the owner on application to the comptroller of the city of New York, and upon verification of claim by the superintendent, may obtain a refund or a portion of the fee paid as follows:

(a) If application is withdrawn prior to the commencement of examination of the application, all but forty dollars of the fee paid shall be refunded.

(b) If the application is withdrawn during the progress of examination of the application, the comptroller shall retain a percentage of the deposit fee paid, which the department shall certify is the equivalent percentage of the examination completed, but not less than one hundred dollars. The

remainder of the fee shall be refunded to the owner.
(c) If the application is withdrawn after examination of plans, and before construction is commenced, there shall be refunded such portion of the fee paid as will leave retained by the comptroller fifty per cent of the total computed fee, but not less than one hundred dollars.
Local Law 38-1990.

9. The department shall adopt such rules and shall prescribe such forms as may be necessary to carry out the provision of this section.

10. The commissioner shall, when deemed necessary by him or her, require reasonable substantiation of the costs stated in any application for a permit or any accompanying specification or other form that may be prescribed by the department.

****§26-212.1 Civil penalty for work without a permit.-**
(a) Whenever any work for which a permit is required pursuant to section 26-207 or section 27-147 of this code has been performed without such permit, a civil penalty shall be imposed as provided in this section.
(b) In cases where work has been performed without a permit on a one-family or two-family dwelling such civil penalty shall equal two times the amount of the fee payable for such permit pursuant to this article. Provided, however, that where only part of such work has been performed without such permit, such civil penalty shall be reduced proportionately according to the amount of such work still to be performed at the time a permit is issued. Provided further, however, that such civil penalty shall not be less than one hundred dollars. No civil penalty shall be imposed if the work for which a permit is required was completed prior to the effective date of this section.
(c) In the case of other work performed without a permit, such civil penalty shall be ten times the amount of the fee payable for such permit pursuant to this article. Provided, however, that where only part of such work has been performed without such permit, such civil penalty shall be reduced proportionately according to the amount of such work still to be performed at the time a permit is issued. Provided further, however, that such civil penalty shall not be less than five hundred dollars. No civil penalty shall be imposed if the work for which a permit is required was completed prior to the effective date of this section.
(d) Such civil penalty and such permit fee shall be payable by the owner of the building on which such work is performed.
(e) Any claim that work described in subdivision (a) of this section was done prior to January first, nineteen hundred eighty-nine shall be supported by an affidavit and supporting data.
(f) No permit shall be issued for any work described in subdivision (a) of this section until the civil penalty assessed pursuant to this section has been paid.
****Local Law 58-1988.***

§[C26-33.0] 26-213 Fees for equipment use permits.-
a. There shall be no fee for equipment use permits of indefinite duration. In other instances, the fee for equipment use permits shall be fifteen dollars for each initial permit and ten dollars for each renewal permit when the permit is for a limited term, but not to exceed fifteen dollars annually, except as hereinafter provided.
***b. The fees for permits to use and operate boilers shall be as follows: thirty dollars annually for a boiler inspected pursuant to section 27-793 of this code by a duly authorized insurance company or other qualified inspector; sixty-five dollars annually for a high-pressure boiler inspected pursuant to section 27-793 of this code by a department inspector; sixty-five dollars for each boiler inspection by a department inspector after a violation is issued.
******Local Law 62-1991; Local Law 40-1987, applies to permits applied for and inspections performed on and after July 6, 1987.***
†c. The fees for permits to use and operate elevators and other devices listed in article one of subchapter eighteen of chapter one of title twenty-seven shall be calculated on the basis of sixty-five dollars for each inspection of each device by the department, sixty-five dollars for each elevator inspection by a department inspector after a violation is issued, and thirty dollars for each inspection by a private agency.
† Local Law 48-1991; Local Law 40-1987, applies to permits applied for and inspections performed on and after July 6, 1987.
(a) The fees for private inspection agencies and inspectors employed by such agencies which are approved by the commissioner to perform inspections of elevators, escalators and power operated scaffolds required by article three of subchapter eighteen of chapter one of title twenty-seven and reference standard RS 18-1 of this code and any rules and regulations issued by the commissioner thereunder, shall be payable as follows:
Private inspection agency.-Initial certificate of qualification; one hundred dollars for each certificate approved and issued by the commissioner subsequent to July first, nineteen hundred seventy-nine; annual renewal shall be fifty dollars.
Private inspector.-Initial certificate of qualification; fifteen dollars for each certificate approved and issued by the commissioner subsequent to July first, nineteen hundred seventy-nine; annual renewal shall be ten dollars.
(b) Where a private inspection agency or a private inspector does not renew within thirty days prior to the expiration of the qualification certificate, the fee for the renewal shall be the same as the fee charged for an initial certificate of qualification.

* **§[C26-34.0] 26-214 Special fees.-**
a. The department shall be entitled to charge the following special fees:

(1) Acknowledgements……..two dollars each.
(2) Certificates of occupancy…..five dollars per copy.
(3) Certificates of pending violations.
(a) multiple and private dwellings....thirty dollars per copy.
(b) all other buildings……..… thirty dollars per copy.
(4) Certified copy of licenses…..... five dollars per copy.
(5) Curb cuts.... six dollars per linear foot of curb cut including splay, except three dollars per linear foot of curb cut for a private dwelling.
(6) Marquees.....fifteen dollars annual fee for each one hundred square feet or fraction thereof.
(7) Places of assembly.....one hundred dollars annual fee; one hundred dollars for each place of assembly inspection by a department inspector after a violation is issued.
(8) Preparing copy of records.
(a) For preparing only, or preparing and certifying, a copy of a record or document filed in the department, other than a plan, certificate of occupancy or certificate of pending violation, eight dollars for the first page and five dollars for each additional page or part thereof-a page to consist of one face of a card or other record.
(b) For a half size print made from microfilm of a plan thirty-six by forty-eight inches or less, eight dollars per copy and for a half size print made from microfilm of a plan exceeding thirty-six by forty-eight inches, sixteen dollars per copy.
(c) For extra copies of the same plan, five dollars per extra copy.
(9) Search inspections.-
(a) For a requested search inspection of a building, the unit fee shall be based upon a building with a frontage of twenty-five feet and a depth of one hundred feet for which the fee shall be twenty dollars per floor for the first three floors and ten dollars for each additional floor. The minimum fee for each building shall be one hundred dollars.
(b) Such fee shall be increased by forty percent per floor for each twenty-five feet or fraction thereof that such structure is in excess of twenty-five feet frontage, and twenty-five percent per floor for each twenty-five feet or fraction thereof that such structure is in excess of one hundred feet in depth.
(c) A basement or cellar shall be considered a floor, but where a basement and cellar exist in any one structure, cellars shall not be included in computing the fee.
(d) When the depth of a one or two family dwelling is not more than forty feet the amount of the fee shall be fifty percent of the fee as computed herein.
(10) Temporary sheds, fences, railings, footbridges, catch platforms, building sidewalk shanties, over-the-sidewalk chutes-thirty dollars per permit except that in case of a sidewalk shed the fee per permit shall be thirty dollars for the first twenty-five feet or fraction thereof in the length of the shed, plus ten dollars for each additional twenty-five feet or fraction thereof.
*(11) Acceptance of materials or equipment by code test method. When any material or equipment is submitted for acceptance for compliance with code requirements by the code test method, the application shall be accompanied by the required fee.
(a) Application for acceptance of materials or equipment-six hundred dollars.
(b) Application for amendment of prior acceptance of materials or equipment-five hundred dollars.
(c) Application for change of identification (change of ownership, corporate name or name of product) of prior acceptance of materials, appliances and methods of construction-three hundred fifty dollars.
***(12) Approval of materials and appliances. a. Application for approval of materials, appliances and methods of construction—six hundred dollars.
b. Application for change of identification (change of ownership, corporate name or name of product) of prior approval of materials, appliances and methods of construction—three hundred fifty dollars.
c. Application for amendment (change in manufacturing process) of prior approval of materials, appliances and methods of construction (may be accompanied by a change in identification application without additional fee)—five hundred dollars.
**(12) Registration of persons pursuant to subdivision (a) of section 27-140.1 of the building code….fifty dollar annual fee.
b. Late payment of annual fees set forth in this subchapter shall be subject to the payment of an additional fee, not to exceed fifty percent of the annual fee, as set forth in regulations promulgated by the department.
***(13) Application for temporary certificate of occupancy—one hundred dollars.

Local Law 54-1991; Local Law 49-1988.

****Local Law 72-1991. Note: There are two paragraph (12) s.***

*****Local Law 54-1991.***

††† (14) Microfilming of applications and associated documentation for certificates of occupancy, temporary certificates of occupancy and/or letters of completion, as required by rule of the commissioner, as follows: thirty-five dollars for mandatory microfilming by the department of applications for new buildings and alterations, payable at time of filing. Such payment will cover the costs for up to two fiche and will be credited toward the final payment due at the time of issuance of a certificate of occupancy, temporary certificate of occupancy, or letter of completion. The charge for each additional fiche is ten dollars.

†††Local Law 53-1993.

****Local Law 38-1990.***

†**§[C26-34.1] 26-214.1 Special fees; asbestos.** (a) Whenever

pursuant to section 27-198.1 of the code application for a permit is made for work which will involve the performance of an asbestos project and for which the filing with the department of an asbestos inspection report, or proof of approval by the commissioner of environmental protection of an asbestos removal plan is required, the department shall be entitled to charge an additional fee as established by the commissioner of environmental protection in an amount not to exceed twelve hundred dollars.

(b) Whenever pursuant to section 27-198.1 of the code application for a plan approval or a permit is made for work for which an asbestos investigator is required to submit an asbestos inspection report certifying that the work to be performed will not constitute an asbestos project, the department shall be entitled to charge an additional fee as established by the commissioner of environmental protection in an amount not to exceed twenty-five dollars.

(c) For the purposes of this section, the terms "asbestos project", "asbestos inspection report "and "asbestos removal plan" shall have the meanings as are ascribed in section 24-146.1 of subchapter six of chapter one of title twenty-four of the code.

† Local Law 55-1991; Local Law 46-1988; Local Law 76-1985, language juxtaposed per Ch. 907-1985.

***§[C26-35.0] 26-215 Fees for the testing, approval, inspection and use of power operated cranes, derricks and cableways.-**

(a) Upon filing an application on a form prescribed by the department, for prototype approval of a mobile crane, except those with hydraulic booms, manufactured after April first, nineteen hundred seventy, to comply with the requirements of section 6.0 of reference standard RS 19-2 the following fees shall be paid:

(1) Twenty-five hundred dollars when approval has been requested in accordance with 3.1.1.1(6)(a).

(2) Thirty-five hundred dollars when approval has been requested in accordance with 3.1.1.1(6)(b).

(3) Four thousand dollars when approval has been requested in accordance with 3.1.1.1(6)(c).

(b) Upon filing an application on a form prescribed by the department for a prototype approval of a mobile crane with a hydraulic boom; a fee of four thousand dollars shall be paid.

(c) Upon filing an application for a certificate of approval on a form prescribed by the department, the applicant shall pay the following fees for each crane or derrick; five hundred dollars for mobile cranes with a boom less than two hundred feet in length; one thousand dollars for mobile cranes with a boom two hundred feet or more in length, but less than three hundred feet in length; two thousand dollars for mobile cranes with a boom three hundred feet or more in length but less than four hundred feet in length; three thousand dollars for mobile cranes with a boom four hundred feet or more in length; and for climber and tower cranes, regardless of length; and one thousand dollars for all other cranes and derricks. However, notwithstanding the foregoing, the fee for a mobile crane for which a certificate of approval is required with a boom not exceeding fifty feet in length with a maximum rated capacity exceeding three tons shall be three hundred dollars. The boom length as herein specified shall include the jibs and any other extensions to the boom. The fees prescribed herein shall include the issuance of the initial certificate of operation.

(d) Notwithstanding the provisions of subdivision (a) above, when an applicant has obtained a temporary certificate of approval and has paid fifty percent of the fees for such approval in accordance with rules and regulations of the department of buildings, the remainder of the fee shall be paid simultaneously with the approval of the application.

(e) If the applicant withdraws his or her application for a certificate of approval, upon application to the comptroller of the city of New York and upon verification of the claim by the commissioner, such applicant may obtain a refund of a portion of the fees as follows:

(1) If the application is withdrawn prior to the commencement of examination by the department, the entire fee shall be refunded except one hundred dollars.

(2) If the application is withdrawn after the examination has commenced, the comptroller shall retain a percentage of the fee paid, which the department shall certify is the equivalent percentage of the examination performed, but not less than one hundred dollars. The remainder of the fee shall be refunded to the applicant.

(3) If the application is withdrawn or if approval is denied after the department has performed its examination, no part of the fee shall be returned to the applicant.

(f) The fee for a new certificate of approval, when the boom or extension thereof is replaced or altered shall be the full fee required for testing a new crane or derrick which is replaced or altered with a boom or extension of the same size and design.

(g) The owner of any crane or derrick shall renew the certificate of operation each year. Upon filing an application for such renewals on a form prescribed by the department, the applicant shall pay the following fees for each crane or derrick: two hundred fifty dollars for mobile cranes with a boom less than three hundred feet in length, and four hundred dollars for mobile cranes with a boom three hundred feet or more in length. The length of boom herein specified includes jibs and any other extensions to the boom. The fee for derricks and all other cranes shall be two hundred fifty dollars. However, notwithstanding the foregoing, the fee for a mobile crane with a boom not

exceeding fifty feet in length with a rated capacity exceeding three tons or less shall be two hundred dollars. Further, when a crane is exempted from the requirements of a certificate of approval but not from the requirements of a certificate of operation, in accordance with paragraph three of subdivision (a) of section 27-1057 of the code, then the fee for the issuance of the initial certificate of operation shall be two hundred fifty dollars and the fee for the annual renewal thereof shall be two hundred dollars.

(h) The fee for an application for on-site inspection shall be one hundred fifty dollars, except that when such inspection shall cover mobile cranes with booms, including jibs and other extensions to the boom two hundred fifty feet or more in length, or derricks, the fee shall be as follows:

(1) Two hundred fifty dollars when the inspection is performed on normal working days.

(2) Seven hundred fifty dollars when, at the written request of the applicant, the inspection is performed on other than normal working days.

***Local Law 38-1990**.

ARTICLE 4
INSPECTIONS

§[C26-40.0] 26-216 Right of entry and inspection.- The commissioner or his or her authorized representatives, in the discharge of their duties, shall have the right to enter upon and inspect, at all reasonable times, any buildings, enclosure, premises, or any part thereof, or any signs or service equipment contained therein or attached thereto, for the purpose of determining compliance with the provisions of the building code and other applicable building laws and regulations. Officers and employees of the department shall identify themselves by exhibiting the official badge of the department; and other authorized representatives of the commissioner shall identify themselves by producing and exhibiting their authority in writing signed by the commissioner.

§[C26-41.0] 26-217 Inspections of building work.-All inspections of building work shall be made and conducted under the direction of the commissioner and in accordance with and subject to the provisions of this title and the provisions of the building code. The commissioner may accept inspection and test reports from officers and employees of the department and other city departments and governmental agencies; and he or she may also accept inspection and test reports submitted by architects and engineers registered or licensed under the education law, or by other persons or services when he or she is satisfied as to their qualifications and reliability.

§[C26-42.0] 26-218 Inspection of completed buildings.- The commissioner shall cause all completed buildings to be inspected and a record made of all violations of the laws, rules and regulations relative to such buildings that are enforced by the department.

§[C26-43.0] 26-219 Inspection of construction machinery and equipment, etc.-The commissioner shall cause inspections to be made of machinery and equipment used for construction and excavation work, and for cableways, hoisting and rigging purposes.

§[C26-44.0] 26-220 Inspection of signs.-
The commissioner shall cause all signs for which permits have been issued to be inspected at least once in every calendar year.

§[C26-45.0] 26-221 Inspection reports.-All inspection reports shall be in writing, and signed by the inspector, or the responsible individual, or the officer of the service, making the inspection; and a record of all inspections shall be kept by the department.

ARTICLE 5
CERTIFICATES OF OCCUPANCY

§[C26-50.0] 26-222 Requirement of certificate of occupancy.-It shall be unlawful to occupy or use any building erected or altered after December sixth, nineteen hundred sixty-eight, unless and until a certificate of occupancy shall have been issued by the commissioner, certifying that such building conforms substantially to the approved plans and the provisions of the building code and other applicable laws and regulations. Nothing herein contained, however, shall be deemed to prohibit the commissioner from permitting the temporary occupancy and use of a building in accordance with and subject to the provisions of the building code and paragraph three of subdivision (b) of section six hundred forty-five of the charter.

§[C26-51.0] 26-223 Occupancy of existing buildings.-The lawful occupancy and use of any building existing on December sixth, nineteen hundred sixty-eight, may be continued unless a change is specifically required by the provisions of the building code; and any changes of occupancy or use of any building existing on such date shall be subject to the provisions of the building code and section six hundred forty-five of the charter.

§[C26-52.0] 26-224 Issuance and filing of certificate of occupancy.-All certificates of occupancy shall be issued by the commissioner in accordance with and subject to the provisions of the building code and section six hundred forty-five of the charter. A record of all certificates of occupancy shall be kept by the department; and copies shall be furnished upon request, and on the

payment of the required fee.

ARTICLE 6
PROJECTIONS BEYOND STREET LINE

§[C26-60.0] 26-225 General restrictions on projections beyond street line. - It shall be unlawful to construct any part of a building erected after December sixth, nineteen hundred sixty-eight, or altered or enlarged after such date, so as to project beyond the street line and encroach upon a public street or public space, except in accordance with and subject to the provisions of this article and the provisions of the building code. Any permission, express or implied, to construct any part of a building so as to project beyond the street line shall be revocable at will by the city council or the board of estimate; and any part of a building permitted to project beyond the street line shall be so constructed that it may be removed at any time without causing the building to become structurally unsafe in whole or in part, subject to such exceptions and exemptions as may be provided in the building code.

§[C26-61.0] 26-226 Existing projections beyond street line. - Such parts of buildings as project beyond the street line on January first, nineteen thirty-eight, may be maintained as constructed unless their removal, rearrangement or relocation is directed by the city council or the board of estimate.

§[C26-62.0] 26-227 Rules governing projections beyond street line.-All rules governing the construction of building projections beyond the street line and all surface and subsurface construction beyond the street line and within the curb line, including curb cuts and driveways, the coverings thereof and the entrance thereto, and the issuance of permits in reference thereto, shall be adopted and promulgated by the commissioner. Nothing herein contained, however, shall be deemed to impair the powers and duties of the commissioner of parks and recreation and the commissioner of transportation to adopt and promulgate such additional rules as may be necessary with respect to the regulation and disposition of projections and encroachments beyond the street line, under and pursuant to the provisions of section eleven hundred five of the charter.

ARTICLE 7
SAFETY IN BUILDING OPERATIONS

§[C26-70.0] 26-228 General safety requirements.- Persons engaged in building operations shall provide reasonable and adequate protection for the safety of all persons and property affected thereby; and all such operations shall be conducted in accordance with and subject to the safety requirements of this article and the building code, and the safety requirements of article ten of the labor law.

§[C26-71.0] 26-229 Safety requirements during excavation operations.-The following safety requirements shall apply to the conduct of all excavation operations, whether for construction purposes or otherwise:

a. Protection of persons and adjoining property.-Any person causing an excavation to be made shall provide adequate fencing on all open sides of the excavation, with suitable means of exit therefrom, and shall also provide such sheet piling, bracing and other supports as may be necessary to prevent the sides of the excavation from caving in before permanent supports are provided. Such person shall be afforded a license to enter and inspect adjoining property, and to perform such work thereon as may be necessary for such purpose; otherwise, the duty of providing safe support for any adjoining property, shall devolve upon the owner thereof, who shall be afforded a similar license with respect to the property where the excavation is to be made.

b. Protection of adjoining buildings.-Whenever the safety of any adjoining building is or may be affected by an excavation not exceeding ten feet below the legally established curb level, it shall be the duty of the owner of such building to provide safe support for the building, provided such owner is afforded a license to enter and inspect the property where the excavation is to be made, and to perform such work thereon as may be necessary for such purpose; otherwise, such duty shall devolve upon the owner of the property where the excavation is to be made, who shall be afforded a similar license with respect to the adjoining property. If an excavation is to be carried more than ten feet below the legally established curb level, and the safety of any adjoining building is or may be affected by such part of the excavation as exceeds ten feet below the legally established curb level, it shall be the duty of the person causing such excavation to be made to provide safe support for such building regardless of the depth of its foundations, provided such person is afforded a license to enter and inspect the adjoining building and property, and to perform such work thereon as may be necessary for such purpose; otherwise, such duty shall devolve upon the owner of the adjoining building, who shall be afforded a similar license with respect to the property where the excavation is to be made.

c. Support of party walls.-Whenever an adjoining party wall is intended to be used by the person causing an excavation to be made, and such party wall is in good condition and sufficient for the uses of the existing and proposed buildings, it shall be the duty of such person to protect such party wall and support it by proper foundations, so that it shall be and remain practically as safe as it was

before the excavation was commenced.

d. Owner responsibility.-The responsibility of affording any license referred to in subdivisions (a) and (b) of this section and in section 26-230 of this article, shall rest upon the owner of the property involved; and in case any tenant of such owner fails or refuses to permit the owner to afford such license, such failure or refusal shall be a cause to the owner for dispossessing such tenant through appropriate legal proceedings for recovering possession of real property.

§[C26-72.0] 26-230 Protection of roofs, skylights, etc.-Whenever any building is to be constructed above the roof of an adjoining building, it shall be the duty of the person causing such building to be constructed to protect the roof, skylights and other roof outlets of the adjoining building from injury, and to use every reasonable means to avoid interference with the use of the adjoining building during the course of construction. Such person shall be afforded a license to enter and inspect the adjoining building and perform such work thereon as may be necessary for such purpose; otherwise, the duty of protecting the roof, skylights and other roof outlets of the adjoining building shall devolve upon the owner thereof. In addition, any person having the duty to alter or maintain chimneys of any adjoining building under and pursuant to the provisions of the building code or other applicable laws and regulations, shall likewise be afforded a license to enter and inspect such adjoining building and perform such work thereon as may be necessary for such purpose; otherwise, such duty shall devolve upon the owner thereof.

§[C26-73.0] 26-231 Regulation of lots.-The regulation of lots, in conformity with the street on which they are situated, shall be calculated at curb level. Where a lot has more than one street frontage, and is so situated that the street frontages intersect, the curb of the longest street frontage shall be used. When the street frontages do not intersect, the curb along each frontage shall be used to one-half the depth of the lot between street frontages. A lot as referred to in this section, shall mean a parcel of land twenty-five feet by one hundred feet, or less, in one ownership whether adjacent land be in the same or other ownership; but, for this purpose, no land in the same ownership may be divided into lots smaller than twenty-five feet by one hundred feet.

§[C26-74.0] 26-232 Retaining walls.-The following requirement shall apply to the construction of retaining walls.

a. Retaining walls to conform to street regulation.-When the regulation of a lot, in conformity with section 26-231 of this article, requires the ground on such lot to be raised or lowered and kept higher than the ground of an adjoining lot, provided the ground of such adjoining lot is not maintained in a grade lower than in conformity with the street or streets on which it is situated, any necessary retaining wall shall be made and maintained jointly by the owners of the land on each side and shall stand one-half upon the land of each owner, unless otherwise agreed to by both owners.

b. Retaining walls to support adjoining earth.-Where an excavation has been made or a fill placed on any lot within the legal grade required by section 26-231 of this article, and the adjoining land is maintained at a grade in conformity with or lower than the street or streets on which it is situated and is without permanent structures other than frame sheds or similar structures, any retaining wall which shall be necessary to support the adjoining earth shall stand equally upon the lot of each owner and shall be made and maintained jointly by the owners of the land on each side, unless otherwise agreed to by both owners.

c. Surplus retaining wall.-Where any owner shall insist on maintaining his or her ground either higher or lower than the legal regulation as provided in section 26-231 of this article, the surplus retaining wall, which may be necessary to support such height or provide for such excavation, shall be made and maintained at the sole expense of such owner, and such additional thickness as may be required shall be built on the land of such owner.

d. Removal of retaining walls.-Any retaining wall standing partly on the land of each owner may be removed by either owner when the necessity for such retaining wall ceases to exist.

§[C26-75.0] 26-233 Maintenance and repair of protection fences and retaining walls.-Unless otherwise provided by special agreement between them, the owners of adjoining properties shall be responsible jointly for the proper maintenance and repair of partition fences and retaining walls dividing their properties; and each such owner shall be responsible for one-half of the costs of maintaining and repairing such fences and retaining walls, except that where the replacement of a partition fence removed by one owner is necessary for safety, the owner removing the fence shall replace it at his or her own cost.

§[C26-76.0] 26-234 Report and inspection of unsafe buildings and property.-Whenever persons engaged in building operations have reason to believe in the course of such operations that any building or property is dangerous or unsafe, such person shall forthwith report his or her belief in writing to the commissioner of buildings, who shall thereupon cause an inspection to be made of such building or property; and if such building or property is found to be dangerous or unsafe, the commissioner shall cause such action to be taken as he or she may deem

necessary under and pursuant to the provisions of article eight of this subchapter.

ARTICLE 8
UNSAFE BUILDINGS AND PROPERTY

§[C26-80.0] 26-235 Removal or repair of structures.- Any structure or part of a structure or premises that from any cause may at any time become dangerous or unsafe, structurally or as a fire hazard, or dangerous or detrimental to human life, health or morals, shall be taken down and removed or made safe and secure. A vacant building which is not continuously guarded shall have all openings sealed in a manner approved by the commissioner, and it shall be the duty of the owner thereof promptly to make any repairs that may be necessary for the purpose of keeping such building sealed. Any vacant building not continuously guarded or not sealed and kept secure against unauthorized entry as herein before provided shall be deemed dangerous and unsafe as a fire hazard and dangerous and detrimental to human life, health and morals within the meaning of this article.

§[C26-80.5] 26-236 Record and notice of unsafe structures or premises.-

a. Docket, order and notice.-Immediately upon the receipt of a report by any officer or employee of the department that a structure or part of a structure or premises is unsafe or dangerous, structurally or as a fire hazard, or is dangerous or detrimental to human life, health or morals, the superintendent shall cause the report to be entered upon a docket of unsafe structures and premises. Such docket shall be kept in the department. The owner, or one of the owners, executors, administrators, agents, lessees or any other person who may have a vested or contingent interest in the structure or premises, shall be served with a printed or written notice containing a description of the structure or premises deemed unsafe or dangerous, or detrimental to human life, health or morals, and an order requiring such structure or premises to be made safe and secure, or removed, or to be vacated and made safe and secure as may be deemed necessary by the superintendent. Such notice shall require the person thus served immediately to certify to the superintendent his or her acceptance or rejection of the order. The notice shall further notify said person that upon his or her refusal or neglect to comply with any of the requirements of this section or of section 26-237 of this article, a survey of the premises named in such notice will be made at a time and place therein named, in accordance with section 26-238 of this article. The notice shall also set forth that, if the premises referred to therein are reported unsafe or dangerous by the surveyors, their report will be placed before the supreme court and that a trial upon the allegations and statements contained therein, whether such report contains more or less than the notice of survey, will be had before such court at a time and place named in such notice, to determine whether the unsafe or dangerous structures or premises shall be vacated and repaired and secured, or repaired and secured, or taken down and removed, and that a report of such survey, reduced to writing, shall constitute the issue to be placed before the court for trial.

b. Manner of service of order and notice.-The order and notice pursuant to this section shall be served by delivering to and leaving a copy of the order and notice with the person to whom the order and notice is addressed, if such person can be found within the city after diligent search. In the event that such service cannot be made, service shall be made in accordance with the provisions of subdivision d of section 26-244 of this subchapter.

§[C26-81.0] 26-237 Voluntary abatement of unsafe or dangerous conditions.-If the person served with a notice as specified in section 26-236 of this article shall immediately certify his or her assent to the securing or removal of such unsafe or dangerous structures or premises, or such structure which is dangerous or unsafe as a fire hazard or detrimental to human life, health or morals, he or she shall be allowed twenty-four hours, running from the time of service of such notice, within which to commence the abatement of the unsafe, dangerous or detrimental condition. Such person shall employ sufficient labor and assistance to secure or remove such conditions as expeditiously as possible.

§[C26-81.5] 26-238 Survey.-

a. Identity of surveyors.-The survey referred to in section 26-236 of this article shall be made by three competent persons, of whom one shall be the superintendent, or an engineer or an inspector designated in writing by such superintendent; another shall be a licensed architect, appointed either by the county chapter of the American [*sic*] institute of architects of the borough in which the survey is to be made or by the New York society of architects, Brooklyn society of architects, or a licensed professional engineer appointed by the New York association of consulting engineers or by the county chapter of the New York society of professional engineers of the borough in which the survey is to be made; and the third shall be a practical builder, a licensed professional engineer or a licensed architect appointed by the person served with a notice pursuant to section 26-236 of this article. In case the person served with such notice shall neglect or refuse to appoint such surveyor, the other two surveyors shall make the survey. In case they disagree, they shall appoint a third person to take part in such

survey, who shall be a practical builder, licensed professional engineer or an architect of at least ten years' practice, whose decision shall be final.

b. Posting report of survey.-A copy of the report of the survey shall be posted on the structure that is the subject thereof by the persons holding the survey, immediately on their signing such report.

c. Compensation of surveyors.- The architect appointed by the county chapter of the American [*sic*] institute of architects of the borough in which the survey is to be made, or by New York society of architects, the Brooklyn society of architects, or the engineer appointed by the New York association of consulting engineers, or by a chapter of the New York society of professional engineers located in New York city, as herein before provided, who may act on any survey called in accordance with the provisions of this article, and the third surveyor who may have been called in the case of disagreement provided for in subdivision a of this section, shall each be paid the sum of fifty dollars by the finance department upon the voucher of the superintendent. The city is hereby given a cause of action against the owner of the structure surveyed, and of the lot or parcel of land on which the structure is situated, for such sum with interest. The amount so collected shall be paid over to the finance department in reimbursement of the amounts paid as aforesaid.

§[C26-82.0] 26-239 Judicial review of survey.-

a. **Institution of proceeding.-**Whenever the report of any such survey, had as aforesaid, shall recite that the structure or premises thus surveyed is unsafe or dangerous, structurally or as a fire hazard, or dangerous or detrimental to human life, health or morals, the corporation counsel shall, at the time specified in the notice, place such notice and report before the justice holding a special term of the court named in the notice.

b. Precedence of proceeding.- The determination of the issue in an unsafe structure proceeding shall have precedence over every other business of such supreme court. A trial of the issue shall be held without delay, at the time specified in the notice, and shall be held by the justice holding such court or by a referee, whose decision or report in the matter shall be final, unless a jury trial is demanded, in which case the verdict of such jury shall be final.

c. Postponement of trial.-If, for any reason, the issue shall be tried at a time other than that specified in such notice, or to which the trial may be adjourned, the issue may be brought into trial at any time thereafter by the superintendent without a new survey, upon at least three days' notice of trial to the person upon whom the original notice was served, or to his or her attorney. Such notice of trial may be served in the same manner as the original notice.

d. Precept to abate.-Upon the rendition of a verdict of the court or decision of the referee, if such verdict or decision shall find the structure or premises to be unsafe or dangerous, structurally or as a fire hazard, or dangerous or detrimental to human life, health or morals, the justice trying the case, or to whom the report of the referee trying the case shall be presented, shall immediately issue a precept directed to the superintendent, reciting such verdict or decision, and commanding him or her forthwith to vacate and repair and secure, or to repair and secure, or take down or remove the structure or part thereof or other premises that shall have been named in the report, in accordance with such verdict or decision.

§ [C26-82.5]*26-240 Repair or removal under precept.-

a. Execution of precept.- Upon receiving a precept under the provisions of section 26-239 of this article, the superintendent referred to therein shall immediately proceed to execute such precept, as therein directed, and may employ such labor and assistance and furnish such materials as may be necessary for that purpose. A precept requiring that the structure be repaired and secured shall include, but not be limited to, shoring and sealing of the structure. Whenever the demolition of any structure or part of a structure is to be carried out pursuant to any such precept, and the superintendent upon authorization by the commissioner, requests of either the commissioner of citywide administrative services or the commissioner of the department of housing preservation and development that such structure or part thereof be demolished, such demolition work, as so requested, shall be performed by or under the direction of the commissioner of citywide administrative services in accordance with the provisions of subdivisions b and c of section 4-204 of subchapter two of this chapter of the code, or the commissioner of the department of housing preservation and development. The owner of such structure, or part thereof, or premises, or any party interested therein, if he or she applies to the superintendent immediately upon the issuing of such precept and pays all costs and expenses incurred by the city up to that time, shall be allowed to perform the requirements of such precept at his or her own proper cost and expense, if the performance shall be done immediately and in accordance with the requirements of such precept. The superintendent shall have authority to modify the requirements of any precept upon application to him or her in writing by the owner of such structure, or part thereof, or premises, or his or her representative, or to seal or shore the structure upon an application by the commissioner of housing preservation and development, when such superintendent shall be satisfied that such change will secure the safety of such structure or premises equally well. After a determination to seal or shore the

structure is made by the superintendent upon application by the commissioner of housing preservation and development, written notice of such determination shall be sent by regular mail to the owner at his or her last known address. If no action to rehabilitate and restore the structure is undertaken within eighteen months following the granting of such application by the commissioner of housing preservation and development, which period may be extended for an additional six months by the superintendent upon approval of the supreme court, the structure may be demolished. The owner shall continue to have the right during such periods to request the superintendent in writing to modify the requirements of the precept.

b. Interference prohibited.-

1. It shall be unlawful for any person to interfere, obstruct or hinder the superintendent or commissioner of citywide administrative services or the commissioner of housing preservation and development or the representative of any of them, or any person who, acting under the authority conferred on his or her by such superintendent or commissioner, is performing the work directed by a precept issued out of any court as in this article provided, or the work ordered by the superintendent in accordance with such precept under the provisions of this subchapter.

2. The police commissioner shall enforce such orders or requirements when requested by the superintendent, and shall likewise enforce same at the request of the commissioner of citywide administrative services or the commissioner of housing preservation and development with respect to demolition work performed by or under the direction of such commissioner pursuant to the provisions of this section.

Local Law 59-1996.

§[C26-83.0] 26-241 Provision for expense of executing precept.-The superintendent may make requisition upon the comptroller for such amount of money as shall be necessary to meet the expenses of any preliminary proceedings or the execution of any order or precept issued by any court. Upon the approval of the statement of expenses thereof by any justice of the court from which such order or precept was issued, the finance department shall pay such expenses.

§[C26-83.5] 26-242 Return of precept; reimbursement of city.- Upon compliance with any precept issued to him or her in a proceeding under this article, the superintendent shall make return thereof, with an endorsement of the action thereunder and the cost and expenses thereby incurred, to the justice then holding the special term of the court from which such precept issued. Such justice shall then tax and adjust the amount endorsed upon such precept, and shall adjust and allow the disbursements of the proceeding, together with the preliminary expenses of searches and surveys thereof, which shall be inserted in the judgment in such action or proceeding, and shall then render judgment for such amount and for the sale of the premises named in such notice, together with all the right, title and interest that the person named in such notice had in the lot, ground or land upon which such structure was placed, at the time of the filing of a notice of lis pendens in such proceedings, or at the time of the entry of judgment therein, to satisfy such judgment. Such sale shall take place in the same manner and with the same effect as sales under judgment in foreclosure of mortgages. The notice of lis pendens provided for in sections 26-235 through 26-247 of article nine of this subchapter shall consist of a copy of the notice of survey, and shall be filed in the office of the clerk of the county where the property affected by such action, suit or proceeding is located.

§[C26-84.0] 26-243 Fallen structures and structures imminently dangerous.-

** **a. Recovery of bodies from wrecked structures.-** Where any persons are known or believed to be buried under the ruins of any fallen structure or part thereof in the city, the superintendent shall cause an examination of the premises to be made for the recovery of the bodies of the killed and injured. Whenever, in making such examination, it shall be necessary to remove any debris from the premises, the commissioners of ports and trade, parks, police and sanitation and the commissioner of transportation, respectively, when called upon by the superintendent, shall cooperate with the superintendent in carrying out the purposes of this article, and shall provide suitable and convenient places for the deposit of such debris.

Local Law 14-1989; Local Law 5-1986, language juxtaposed per Ch. 907-1985.

***b. Temporary safeguards for dangerous structures.-** In case there shall be, in the opinion of the superintendent, actual and immediate danger that any structure or part thereof will fall, so as to endanger life or property, he or she shall request the commissioner of citywide administrative services or the commissioner of housing preservation and development to cause the necessary work to be done to render such structure or part thereof temporarily safe until the proper proceedings provided for unsafe structures by this subchapter are instituted.

Local Law 59-1996.

c. Vacating structures; closing streets and sidewalks.- Where, in the opinion of the superintendent, there shall be actual and immediate danger that any structure or part thereof will fall so as to endanger life or property, or where any structure or part thereof has fallen and life is endangered by the occupation thereof, the superintendent is hereby authorized and empowered to order and require the inmates and occupants of such structure or part

thereof to vacate the structure forthwith. The police commissioner shall enforce such orders or requirements when so requested by the superintendent.

d. Labor and materials.-For the purposes of this article, the superintendent shall employ such labor and materials as may be necessary to perform such work as expeditiously as possible. The superintendent may make requisition upon the comptroller for such amount of money as shall be necessary to meet the expenses of any direction, determination, requirement or order to perform said work.

ARTICLE 9
VIOLATIONS AND PUNISHMENTS

§[C26-84.5] 26-244 Notices of requirements or of violations.-

a. Issue of notices or orders.-All notices of the violation of any of the provisions of this subchapter or chapter one of title twenty-seven of the code, and all notices or orders required or authorized by this subchapter or chapter one of title twenty-seven of the code, directing anything to be done, including notices or orders that any structures, premises, or any part thereof, is deemed to be unsafe or dangerous, shall be issued by the superintendent and shall have his or her name affixed thereto.

b. Contents of notices or orders.-Each such notice or order, in addition to the statement of requirements, shall contain a description of the structure, premises or property affected.

c. Service of notices or orders.-Notices or orders issued by any court in any proceeding, instituted pursuant to this subchapter or chapter one of title twenty-seven of the code to restrain or remove any violation or to enforce compliance with any provision or requirement of this subchapter or chapter one of title twenty-seven of the code, may be served by delivering to and leaving a copy of the notice or order with any person violating, or who may be liable under any provision of this subchapter or chapter one of title twenty-seven of the code, or who may be designated as provided in subdivision d of section 26-247 of this article. Notices or orders to restrain or remove any violation issued by the superintendent or commissioner pursuant to this subchapter or chapter one of title twenty-seven of the code may be served by regular mail. Such notices may be served by any officer or employee of the department, or by any person authorized by the superintendent.

d. Notice or order by posting.-If the person to whom such order or notice is addressed cannot be found within the city after diligent search, such notice or order may be served by posting it in a conspicuous place upon the premises where such violation is alleged to have been placed or to exist, or to which such notice or order may refer, or which may be deemed unsafe or dangerous, and also depositing a copy thereof in a post office in the city enclosed in a sealed, postpaid wrapper addressed to such person at his or her last known place of residence, which shall be equivalent to a personal service of such notice or order upon all parties for whom such search shall have been made.

§[C26-85.0] 26-245 Emergency measures.-

a. Stopping work and vacating and securing structures.-In case, in the opinion of the superintendent, any defective or illegal work in violation of or not in compliance with any of the provisions or requirements of this subchapter or chapter one of title twenty-seven of the code shall endanger life or property, the superintendent, or such person as may be designated by him or her, shall have the right and is hereby authorized and empowered to order all further work to be stopped in and about such structure or premises, and to require all persons in and about such structure or premises forthwith to vacate it, and also to cause such work to be done in and about the structure as in his or her judgment may be necessary to remove any danger therefrom. The reason for such order shall be supplied in writing within one working day after the issuance of the order.

b. Violations of protective measures during construction or demolition.-During the construction or demolition of a structure, the superintendent shall notify the owner of the structure affected of any failure to comply with any of the provisions of this subchapter or chapter one of title twenty-seven of the code that concern the protection of the public and workers during construction or demolition. Unless the owner so notified proceeds within twenty-four hours to comply with the orders of the superintendent, the superintendent shall have full power to correct the violation. All expenses incurred therefor shall become a lien on the property which may be enforced as provided in section 26-246 of this article.

c. Closing streets temporarily.-The superintendent may, when necessary for the public safety, temporarily close the sidewalks, streets, structures or places adjacent to a structure or part thereof, and the police commissioner, or any of his or her subordinates shall enforce all orders or requirements made under this article, when so requested by the superintendent.

§[C26-85.5] 26-246 Judicial remedies.-

a. Action or proceeding, generally.-Whenever the superintendent believes that any structure, or any portion thereof, or any plumbing or other mechanical equipment, the construction, removal or demolition of which is regulated, permitted or forbidden by this subchapter or chapter one of title twenty-seven of the code is being constructed, removed or demolished, or has been constructed, in violation of, or not in compliance with any of the provisions or requirements of this subchapter or

chapter one of title twenty-seven of the code, or in violation of any detailed statement of specifications or plans submitted and approved thereunder, or of any certificate or permit issued thereunder; or that any provision or requirement of this subchapter or chapter one of title twenty-seven of the code, or any order or direction made thereunder has not been complied with, or that plans and specifications for plumbing and other mechanical equipment have not been submitted or filed as required by this subchapter or chapter one of title twenty-seven of the code; the superintendent may, in his or her discretion, through the corporation counsel, institute any appropriate action or proceeding at law or in equity to restrain, correct or remove such violation, or the execution of any work thereon, or to restrain or correct the erection or alteration of, or to require the removal of, or to prevent the occupation or use of, such structure. Any person who shall maintain or continue any structure, or any portion thereof, or the occupancy or use thereof, or any plumbing or mechanical equipment in violation of any of the provisions of this subchapter or chapter one of title twenty-seven of the code, after having been duly notified as provided in this subchapter or chapter one of title twenty-seven of the code that such structure, or any portion thereof, or the occupancy or use thereof, or that such plumbing or any mechanical equipment is in violation of any provision of this subchapter or chapter one of title twenty-seven of the code, shall be subject to any action or proceeding and any punishment that is provided in this article for the commission of the violation, except that any person shall be subject to any action or proceeding and any punishment that is provided in this article for the commission of the violation, without prior notification that a violation exists, where the violation is any of the following types:

1. A violation which produces an imminent hazard to persons or property by reason of a change of occupancy or use without a permit, or because of the obstruction of exits or unlawful change of exits, or by reason of permitting in a place of assembly more than the approved number of persons.
2. A violation due to the omission of protective equipment or construction which would safeguard persons or property during construction or demolition.
3. A violation that is due to work being done by an unlicensed or non qualified person, when the law requires that such work be done only by a person licensed or possessed of a certificate of qualification to do such work.
4. A violation that consists of doing work without a permit.
5. A violation for failure to have a required current place of assembly permit or failure to have sprinklers or emergency lighting installed as required by law.

b. Corporation counsel to act.-The corporation counsel shall institute any and all actions and proceedings, either legal or equitable, that may be appropriate or necessary for the enforcement of the provisions of this subchapter or chapter one of title twenty-seven of the code.

c. Courts having jurisdiction.-All courts of civil jurisdiction in the city shall have full legal and equitable jurisdiction over any and all suits and proceedings authorized by this subchapter or chapter one of title twenty-seven of the code to be brought for the recovery of any fine or the enforcement of any provision of this subchapter or chapter one of title twenty-seven of the code, and to make appropriate orders and render judgment therein according to law, so as to give force and effect to the provisions of this subchapter or chapter one of title twenty-seven of the code. Such courts shall give preference to such suits and proceedings over all others. No court shall lose jurisdiction of any action hereunder by reason of a plea that the title to real estate is involved if the object of the action is to recover a fine for the violation of any of the provisions of this subchapter or chapter one of title twenty-seven of the code.

d. Restraining order.-In any such action or proceeding the city may, in the discretion of the superintendent and on this affidavit setting forth the facts, apply to any court of record in the city or to a judge or justice thereof, for an order enjoining and restraining all persons from occupying or using for any purpose whatever or doing, or causing or permitting to be done, any work in or upon such structure, or in or upon such part thereof as may be designated in such affidavit, until the hearing and determination of such action and the entry of final judgment therein. The court, or judge or justice thereof, to whom such application is made, is hereby authorized forthwith to make any or all of the orders above specified, as may be required in such application, with or without notice, and to make such other or further orders or directions as may be necessary to render the same effectual. No undertaking shall be required as a condition to the granting or issuing of such injunction order, or by reason thereof.

e. Judgment.-All courts in which any action or proceeding is instituted under this subchapter or chapter one of title twenty-seven of the code shall, upon the rendition of a verdict, report of a referee, or decision of a judge or justice, render judgment in accordance therewith.

f. Lien of judgment.-Any judgment rendered in an action or proceeding instituted under this subchapter or chapter one of title twenty-seven of the code shall be and become a lien upon the premises named in the complaint in such action, such lien to date from the time of filing a notice of lis pendens in the office of the clerk of the county wherein the property affected by such action, suit or proceeding, is located. Every such lien shall have priority before any mortgage or other lien as may exist prior to such filing except tax and assessment liens.

g. Lis pendens.-The notice of lis pendens referred to in

this article shall consist of a copy of the notice issued by the superintendent, requiring the removal of the violation, and a notice of the suit or proceedings instituted, or to be instituted thereon. Such notice of lis pendens may be filed at any time after the service of the notice issued by the superintendent as aforesaid; provided he or she may deem such action to be necessary. Any notice of lis pendens filed pursuant to the provisions of this subchapter or chapter one of title twenty-seven of the code may be vacated and cancelled of record upon an order of a justice of the court in which such suit or proceeding was instituted or is pending, or upon the consent in writing of the corporation counsel. The clerk of the county where the notice is filed is hereby directed and required to mark any such notice of lis pendens, and any record or docket thereof, as vacated and cancelled of record upon the presentation and filing of a certified copy of such order or consent.

h. Costs.-In no case shall a department, or any officer thereof, be liable for costs in any action, suit or proceeding that may have been, or may hereafter be, instituted or commenced in pursuance of this subchapter or chapter one of title twenty-seven of the code.

i. Officers not liable for damages.-An officer of a department, acting in good faith and without malice, shall be free from liability for acts done in any action or proceeding instituted under any provision of this subchapter or chapter one of title twenty-seven of the code, or by reason of any act or omission in the performance of his or her official duties.

§[C26-86.0] 26-247 Judicial orders.-

a. Judicial orders to comply with notices or orders.-In case any notice or direction authorized to be issued by this subchapter or chapter one of title twenty-seven of the code is not complied with within the time designated therein, the city, by the corporation counsel, may, at the request of the superintendent, apply to the supreme court, at a special term thereof, for an order directing the superintendent to proceed to make the alterations or remove the violation, as may be specified in such notice or direction.

b. Judicial orders to vacate for violations.-Whenever any notice or direction so authorized shall have been served as provided in this article, and shall not have been complied with within the time designated therein, the corporation counsel shall, at the request of the superintendent, in addition to, or in lieu of any other remedy provided for by this subchapter or chapter one of title twenty-seven of the code, apply to the supreme court, at a special term thereof, for an order directing the superintendent to vacate such structure or premises, or so much thereof as he or she may deem necessary, and prohibiting the use or occupancy of such structure or premises for any purpose specified in such order until such notice shall have been complied with**.**

c. Responsibility of lessees or occupants.-In case any of the notices or orders of the court herein mentioned shall be served upon any lessee or party in possession of the structure or premises therein described, it shall be the duty of the person upon whom such service is made, if such person knows [*sic*] the address of the owner or agent of the structure or premises named in the notice, to give immediate notice to such owner or agent if such owner or agent shall be within the city, and his or her residence be known to such person, and, if such owner or agent shall be outside the city, by depositing such notice in any post office in the city, properly enclosed in a post paid wrapper addressed to such owner or agent at his or her then known place of residence.

d. Designation of agent by an owner of a structure.-Any owner of real estate or of a structure thereon may execute and acknowledge a written designation of a resident of the city upon whom may be served any notice of violation, notice to make safe, notice of survey, summons, mandate, or any paper or process, issued under a provision of this subchapter or chapter one of title twenty-seven of the code, and may file such designation, with the written consent of the person so designated, duly acknowledged in the office of the superintendent. Such designation must specify the location of the property with respect to which the designation is made, the residence and place of business of the person making it and of the person designated. Such designation shall remain in force during the period specified therein, if any, or until revoked by the death or legal incompetency of either of the parties, or until the filing of a revocation by either of the parties, duly acknowledged and endorsed, with the consent of the superintendent. The superintendent shall file and index each designation and shall note, upon the original designation and index, the filing of a revocation. While the designation remains in force, as prescribed in this article, a notice of violation, notice to make safe, notice of survey, summons, mandate, or any paper or process under any provision of this subchapter or chapter one of title twenty-seven of the code, shall be served upon the person so designated, in like manner and with like effect, as if it were served personally upon the person making the designation, even if such person be present in the city.

e. Reimbursement of city for expenses.-The expenses and disbursements incurred in the carrying out of any order issued as provided in subdivisions a and b of this section shall become a lien upon the structure or premises named in the order, from the time of filing of a copy of the order, with a notice of lis pendens as provided in this subchapter or chapter one of title twenty-seven of the code, in the office of the clerk of the county where the property affected by such action, suit or proceeding is located; and the supreme court, to whom application shall be made, is hereby authorized and directed to grant any of

the orders above named, and to take such proceedings as shall be necessary to make them effectual, and any justice to whom application shall be made is hereby authorized and directed to enforce such lien in accordance with the mechanics' lien laws applicable to the city.

§[C26-86.5] 26-248 Punishments.-

a. General punishments.- Except as hereinafter provided with respect to the amount of the fine, the owner of any structure, or part thereof, or land, where any violation of this subchapter or chapter one of title twenty-seven of the code shall be placed, or shall exist, and any person who may be employed or assist in the commission of any such violation, and any and all persons who shall violate any of the provisions of this subchapter or chapter one of title twenty-seven of the code or fail to comply therewith, or any such requirement thereof, or who shall violate or fail to comply with any detailed order or rule made thereunder, or who shall build in violation of any detailed statement of specifications or plans, submitted and approved thereunder, shall severally, for each and every such violation or non-compliance, respectively, be punished by a fine of not more than five thousand dollars.

b. Heating plant and fire prevention violations.-Any person who shall violate any of the provisions of this subchapter or chapter one of title twenty-seven of the code, as to the construction of chimneys, fireplaces, flues, warm-air pipes or furnaces, or who shall violate any of the provisions of this subchapter or chapter one of title twenty-seven of the code relating to the framing or trimming of timbers, girders, beams, or other woodwork in proximity to chimney flues or fireplaces, shall be punished by a fine of one hundred dollars.

c. Violations of the provisions for the registration of plumbers.-Any person, corporation or co-partnership that shall violate any of the provisions of section 26-146 of this chapter, shall be punished by a fine of not more than two hundred fifty dollars or by imprisonment not exceeding three months, or by both, and in addition, shall forfeit any certificate of registration that may be held at the time of such conviction, provided that when such violation is of the provision relating to the posting of a metal plate, no punishment of imprisonment shall be imposed, and the fine shall not be more than fifty dollars for the first offense, but shall be not less than two hundred dollars and not more than five hundred dollars for a subsequent offense.

d. Continuing violations after notice.-

1.Except as otherwise provided in paragraph two of this subdivision, any person who, having been served with a notice as prescribed in this subchapter or chapter one of title twenty-seven of the code to remove any violation or comply with any requirement of this subchapter or chapter one of title twenty-seven of the code, or with any order or rule made thereunder, shall fail to comply with such notice within ten days after such service or shall continue to violate any requirement of this subchapter or chapter one of title twenty-seven of the code in the respect named in such notice shall be, upon conviction, guilty of an offense punishable by a fine of not less than two hundred fifty dollars nor more than five hundred dollars for the first such violation, not less than five hundred dollars no more than one thousand dollars for the second such violation, not less than one thousand dollars nor more than two thousand dollars for the third such violation, and not less than two thousand dollars nor more than five thousand dollars for the fourth such violation and for every subsequent violation, or, for any such violation, by imprisonment for not more than ninety days, or by both fine and imprisonment.

2. Notwithstanding the provisions of paragraph one of this subdivision, any person who shall convert, or knowingly take part or assist in the conversion of a residence which is legally approved for occupancy as a one-family dwelling, to a dwelling for occupancy by two families or which residence is legally approved for occupancy as a two-family dwelling, to a dwelling for occupancy by three families, and, having been served with a notice as prescribed in this subchapter or chapter one of title twenty-seven of the code to remove such violation, shall fail to comply with such notice within ten days after such service or shall continue to violate the provisions of this paragraph in the respect named in such notice, shall be, upon conviction, guilty of an offense punishable by a fine of not more than five hundred dollars or imprisonment for not more than sixty days or both.

3. Notwithstanding the provisions of paragraphs one and two of this subdivision, the commissioner may determine that the presence of a violation or the failure to comply with any requirement of this subchapter or chapter one of title twenty-seven of the code, or any order or rule made thereunder, constitutes a condition dangerous to human life and safety as set forth by the commissioner in the rules and regulations promulgated by the commissioner. In such event, any person who fails to remove such violation or who, fails to comply with any requirements of this subchapter or chapter one of title twenty-seven of the code, or any order or rule made thereunder, after having been served with a notice personally or by certified mail indicating that such condition exists and requiring such removal or compliance unless the removal of such condition is prevented by a labor dispute or is the result of vandalism beyond the control of the owner, shall also be liable for a civil penalty of not less than one hundred fifty dollars per day commencing on the date of the service of such notice and terminating on the date that such removal or compliance has been substantially completed. When service of such notice is made by mail to the owner, civil penalties as herein provided shall commence five days from the date of

such mailing.

e. Jurisdiction of actions to recover fines.- For the recovery of any such fine, an action may be brought in the name of the city in the New York city civil court, or other court of record, in the city; and whenever any judgment shall be rendered in such action, it shall be collected and enforced as prescribed and directed by the civil practice law and rules.

f. Discontinuance of action upon removal of violation.-If any violation shall be removed or be in process of removal within ten days after the service of a notice as prescribed in this subchapter or chapter one of title twenty-seven of the code, liability shall cease, and the corporation counsel, on request of the commissioner shall discontinue any prosecution or action pending to recover any fine, upon such removal or the completion thereof within a reasonable time. Notwithstanding the foregoing provisions where the commissioner, pursuant to subdivision d of this section, has served a notice requiring removal of a violation or compliance with the requirements of this subchapter or chapter one of title twenty-seven of the code or with any order or rule made thereunder with respect to a condition dangerous to human life and safety, liability shall cease and the corporation counsel on request of the commissioner, shall discontinue such prosecution or action only if the removal or compliance so required has been completed or substantially completed within ten days after the service of such notice. The commissioner shall, upon good cause shown grant additional time for such removal or compliance. In addition, the civil penalties shall be tolled from the date the owner certifies under oath, on a form prescribed by the commissioner, that the removal of the violation has been substantially completed. If subsequent inspection by the commissioner shows a failure to have removed the violation, the civil penalties shall be deemed to have accrued as of the first day notice of violation has been served.

g. [Inconsistent provisions]* Notwithstanding any inconsistent provisions in other subdivisions of this section, any person who is convicted of any of the following violations shall be punished by a fine of not less than five hundred dollars nor more than five thousand dollars for the first violation, not less than one thousand dollars nor more than five thousand dollars for the second violation, not less than fifteen hundred dollars nor more than five thousand dollars for the third violation, and not less than two thousand dollars nor more than five thousand dollars for the fourth violation and every subsequent violation, or, for any such violation, by imprisonment for not more than ninety days, or by both fine and imprisonment:

Copy in brackets not enacted but probably intended.

1. Failure to possess a required place of assembly permit;
2. Failure to install required sprinklers or emergency lighting;
3. A violation which produces an imminent hazard to persons or property as a result of (a) a change of occupancy; (b) use without a permit; (c) obstruction of exits; (d) unlawful change of exits;
4. A violation of the provisions of:

(a) paragraph six or seven of subdivision (c) of section 27-339 of the code; or
(b) subdivision (c) of section 27-353 of the code; or
(c) section 27-353.1 of the code; or
(d) subdivision (e) of section 27-381 of the code; or
(e) subdivision (b) of section 27-382 of the code; or
†(f) subdivision (b) or (c) of section 27-384 of the code; or
(g) section 27-777.1 of the code; or
(h) section 27-777.2 of the code; or
(i) subdivision (b) of section 27-929 of the code; or
(j) paragraph twelve of subdivision (f) of section 27-972 of the code; or
(k) paragraph ten of subdivision (g) of section 27-972 of the code; or
(l) subdivision (c) of section 27-975 of the code; or
(m) subdivision (c) of section 27-989 of the code; or
(n) section 27-996.1 of the code; or
(o) section 27-996.2 of the code; or
†(p) section 2-4 or 4-3 of reference standard RS 13-1; or
†(q) subdivision (e) of section 27-383.1 of the code, or
†(r) subdivision (b) of section 27-383; or
†(s) section 27-929.1.

5. Working without a permit and refusing to discontinue the work.

*** h. Any permit holder or owner who shall permit any sidewalk shed to remain in place for a period of more than thirty days following the expiration of a sidewalk shed permit shall be subject to the provisions of section 26-126.1 of this code and subject to an additional fine of one hundred dollars per day for each day the shed was in place after the thirtieth day up to a maximum of $10,000.

****** Local Law 33-1991.***

† Local Law 26-2004.

****§[C26-87.0] 26-249 Violations of peremptory orders.-** Any person who shall receive and fail to comply with any written peremptory order of the superintendent or commissioner issued when an immediate comliance with such order is essential to the public peace or safety, within the time specified in such order, in addition to any other punishment prescribed by law shall be punished by a fine of not more than five hundred dollars or by imprisonment not exceeding six months, or by both**.**

****Local Law 23-1990.***

§[C26-87.5] 26-250 Appeal.-An appeal from any decision or interpretation of the superintendent or commissioner may be taken to the board of standards and appeals pursuant to the procedures of the board, except as provided in section 25-204 of the code.

ARTICLE 10
MISCELLANEOUS PROVISIONS

§[C26-91.0] 26-251 Illegal practices in the sale or use of lumber for construction purposes prohibited.-

a. Any person, corporation or partnership who, within the city of New York, shall have in his or her possession, or who shall place, use or affix without authorization from the owner thereof a stamp, label, trade mark, grade mark, serial number or other distinguishing mark, which stamp, label, trade mark, grade mark, serial number or mark is the property of an association of lumber manufacturers or lumber grading bureau upon any lumber sold or intended to be sold, or used or intended to be used, for or in the construction, alteration or repair of a building or other structure within the city of New York, or any person, corporation or partnership who shall knowingly sell or possess or offer for sale such lumber so marked, or who shall knowingly possess or use or prepare to use such lumber so marked for or in the construction, alteration or repair of a building or structure within the city of New York, shall be guilty of an offense punishable by a fine of not less than twenty-five dollars nor more than one hundred dollars for the first offense, and by a fine of not less than one hundred dollars nor more than five hundred dollars, or by imprisonment for not more than six months, or both, for a subsequent offense.

b. Possession of such lumber so marked, or of a colorable imitation of the principal features of a genuine stamp, label, trade mark, grade mark, serial number or mark as aforesaid, or unauthorized possession of a genuine stamp, label, trade mark, grade mark, serial number or mark, as aforesaid, by any lumber dealer, builder or contractor, or by any employee, partner, or officer thereof, shall be presumptive evidence of a violation of this section.

*** §[C26-92.0] 26-252 (a) Sidewalk sheds, fences, railings, etc.-** a. It shall be unlawful to construct any sidewalk shed, fence, railing, footbridge, catch platform, builder's sidewalk shanty, or an over-the-sidewalk chute, unless and until a special permit therefore [*sic*] shall have been issued by the building commissioner. The fees for such permit shall be as provided in section 26-214 of this chapter. Each applicant for a sidewalk shed permit shall state the reason the sidewalk shed is needed. The term of the sidewalk shed permit shall be one year, or the expiration of the contractor's insurance if such time period is less than one year. No renewals of shed permits, except for new buildings under construction, will be given unless an architect or engineer conducts a thorough examination of that part of the premises on which work is being conducted and submits a report acceptable to the commissioner, which clearly documents the condition of the applicable part of the premises and the scope of work that has been performed thereon, and estimates the time needed to complete the work. To renew a shed permit for a new building under construction, each applicant shall file an application with the commissioner. All renewal applications shall include the name and address of the owner of the premises.

b. Following the receipt of a permit to erect a sidewalk shed, the permit holder shall post a sign on the sidewalk shed, which includes the name, address, telephone number, and permit number of the permit holder. The sign shall also include the date that the permit expires. The sign shall measure twenty-five square feet.

Local Law 93-1996; Local Law 33-1991.

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SUBCHAPTER 4
REGULATION OF OUTDOOR SIGNS

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***"26" omitted from section numbers in this column.*

**SUBCHAPTER 4
REGULATION OF OUTDOOR SIGNS

ARTICLE 1
MAINTENANCE PERMIT FOR OUTDOOR SIGNS

§26-253 Permit required.- a. On and after a date to be provided by rule, and subject to the provisions of section 26-258 of this code, it shall be unlawful to place or maintain a sign, as defined in section 12-10 of the zoning resolution, on any building or premises in zoning districts M 1, M 2, M 3, C 6-5, C 6-7, C 7 or C 8 unless a permit for the maintenance of such sign has been issued by the department pursuant to this article if,

(i) such sign is within a distance of two hundred linear feet from and within view of an arterial highway or within a distance of two hundred linear feet from and within view of a public park with an area of one half acre or more, or

(ii) such sign is not within a distance of two hundred linear feet from an arterial highway or a public park with an area of one half acre or more but is within view of an arterial highway or within view of a public park with an area of one half acre or more and there are more square feet in the surface area of such sign than there are linear feet in the distance of such sign from such arterial highway or public park.

b. A permit shall be required pursuant to this section whether or not a permit is required and/or has been issued for the installation, alteration or erection of such sign pursuant to sections 27-147, 27-148 and article sixteen of sub-chapter one of title twenty-seven of this code.

c. For the purposes of this section the term arterial highway shall include all highways that are shown on the master plan of arterial highways and major streets as principal routes parkways or toll crossings and that have been designated by the city planning commission as arterial highways to which the provisions of sections 42-55 and 32-66 of the zoning resolution shall apply as shown in appendix C of the zoning resolution.

§26-254 Application.- Application for a permit or for the renewal of a permit shall be made on forms to be furnished by the department and shall contain such information, as the department shall prescribe. Except as otherwise provided in section 26-255, a permit shall remain in effect for one year and may be renewed annually. The fee for a permit or for its renewal shall be established by rule. The identification number of the permit shall be displayed on the sign or on the building or premises on which the sign is located or both, in a manner to be provided by rule.

§26-255 Permit expiration.- A permit issued pursuant to section 26-253 of this code shall expire and be of no further force or effect where:

(i) in the case of a sign which is accessory to a principal use within the meaning of section 12-10 of the zoning resolution, there has been a discontinuance of the operation of the principal use to which such sign is accessory, or in the event the sign is no longer in the same ownership as such principal use or is no longer operated and maintained substantially for the benefit or convenience of the owners, occupants, employees, customers or visitors of the principal use;

(ii) in the case of any sign for which a permit has been issued pursuant to section 26-253 of this code, whether or not accessory to a principal use within the meaning of section 12-10 of the zoning resolution, there has been a change in copy which the commissioner has determined renders such sign no longer in compliance with the zoning resolution. The commissioner shall prescribe by rule procedures for the notification to the department concerning changes in copy which have been made on signs for which permits have been issued under section 26-253 of this code. Nothing herein shall be construed as limiting the ability of any person to apply for a new permit pursuant to section 26-254 of this code.

§26-256 Civil penalties.- a. Any person who places or maintains a sign on a building or premises without an appropriate permit in violation of section 26-253 of this article shall be liable for a civil penalty of, for a first

violation, not more than fifteen thousand dollars and, for a second or subsequent violation, not more than twenty-five thousand dollars. Each day's continuance shall be a separate and distinct violation. Such civil penalties may be recovered in an action in any court of appropriate jurisdiction or in a proceeding before the environmental control board. Such board shall have the power to impose the civil penalties provided for in this section. Notwithstanding the provisions of section six hundred sixty-six of the charter, a notice of violation issued by the department pursuant to this section shall not be subject to review by the board of standards and appeals.

§26-257 Construction.- This article shall not be construed to grant the right to place or maintain a sign on any building or premises where the placement or maintenance of such sign would otherwise be prohibited pursuant to the zoning resolution, the administrative code or any other provision of law. No permit for a sign issued hereunder shall be deemed to constitute permission or authorization to maintain a sign which is unlawful pursuant to any other provisions of law nor shall any permit issued hereunder constitute a defense in an action or proceeding with respect to such an unlawful sign.

§26-258 Exemption.- The provisions of this article shall not apply to: (i) signs with a surface area of two hundred square feet or less that are located no higher than three feet above the floor of the second story of the building on which the sign is located; and (ii) advertising signs which have legal non-conforming use status pursuant to the zoning resolution, provided an outdoor advertising company or other person provides evidence of such status in a form satisfactory to the commissioner.

ARTICLE 2
OUTDOOR ADVERTISING COMPANIES

§26-259 Definitions.- As used in this subchapter, the following terms shall have the following meanings:

a. The term "affiliate" means an outdoor advertising company having a controlling interest in another outdoor advertising company or in which such other outdoor advertising company has a controlling interest. A "controlling interest" means actual working control, in whatever manner exercised, including without limitation, control through ownership, management, debt instruments or negative control, as the case may be, as defined in rules of the department.

b. The term "outdoor advertising company" means a person, corporation, partnership or other business entity that as a part of the regular conduct of its business engages in or, by way of advertising, promotions or other methods, holds itself out as engaging in the outdoor advertising business. Such term shall not include the owner or manager of a building or premises who markets space on such building or premises directly to advertisers.

c. The term "outdoor advertising business" means the business of selling, leasing, marketing, managing, or otherwise either directly or indirectly making space on signs situated on buildings and premises within the city of New York available to others for advertising purposes.

d. The term "under the control of an outdoor advertising company" in reference to a sign or sign location means that space on such sign or at such sign location is sold, leased, marketed, managed or otherwise either directly or indirectly made available to others for advertising purposes by such outdoor advertising company.

e. The term "sign" means a sign as defined in section 12-10 of the zoning resolution except that such term shall not include any sign subject to regulation by the department of transportation.

f. The term "sign location" means a building or premises on which an outdoor advertising company is entitled to sell, lease, market, manage or otherwise either directly or indirectly make space on signs available to customers, irrespective of whether a sign exists on such building or premises.

§26-260 Registration of outdoor advertising companies.-

a. On and after a date to be provided by rule, it shall be unlawful for an outdoor advertising company to engage in the outdoor advertising business or, by way of advertising, promotions or other methods, hold itself out as engaging in the outdoor advertising business unless such company is registered in accordance with this article and the rules of the department. Such rules shall establish a procedure pursuant to which the department may require the single registration of an outdoor advertising company and its affiliates. An outdoor advertising company and its affiliates made subject to single registration shall be considered a single outdoor advertising company for purposes of this article.

b. Application for registration or the renewal of registration shall be made on forms to be furnished by the department and shall contain such information, as the department shall prescribe. Registration shall remain in force for one year and may be renewed annually. The fee for such registration and for the renewal of such registration shall be established by rule.

c. Each outdoor advertising company shall post a bond to the city, with a surety approved by the department in an amount to be determined by the department, by rule based on the number of signs and any supporting structures therefor under the control of such company. The bond shall be conditioned such that the obligor:

(1) will pay all costs incurred by the city pursuant to section 26-127.3 of this code for painting over, covering, rendering ineffective or for the removal and storage of an illegal sign or sign structure under the control of such outdoor advertising company.

(2) will pay all fines or civil penalties imposed against such company pursuant to this article.

d. The department may revoke, suspend or refuse to renew the registration of an outdoor advertising company or impose fines or other penalties where it is determined by the commissioner, after notice and the opportunity to be heard, that (i) such company has made statements that it knew or should have known are false in any application or certification filed with the department, (ii) such company has failed to comply with subdivision a of section 26-261 of this code or the rules adopted pursuant to its provisions by failing to file a listing of all signs and sign locations under its control within the time and in the manner required by department rules or by filing an incomplete listing of signs and sign locations under its control, (iii) such company has been found liable for civil penalties under section 26-262 of this code on repeated occasions, and has failed to adopt and implement appropriate corrective action and internal control measures in a timely fashion pursuant to the department's rules, (iv) such company has failed to pay any civil penalties imposed pursuant to section 26-262 or amounts owed to the city pursuant to section 26-127.3 of this code or, (v) such company has violated the department's rules pertaining to outdoor advertising companies. No application for registration by an outdoor advertising company or any affiliate thereof shall be accepted for filing by the department for a period of five years after revocation of or the refusal to renew the registration of such outdoor advertising company pursuant to this subdivision. The department shall not accept or process any applications for permits to install, erect or alter signs pursuant to section 27-147, 27-148 and article sixteen of sub-chapter one of title twenty-seven of this code or for the maintenance of signs pursuant to section 26-253 where such applications are filed by or where such signs are under the control of an outdoor advertising company or any affiliate thereof after the registration of such outdoor advertising company has been revoked or not renewed or during the term of any period of suspension of such registration.

§26-261 Display of name and registration number of outdoor advertising company; location of signs.- a. An outdoor advertising company shall provide the department with a listing with the location of all signs and sign locations under the control of such outdoor advertising company in such form, containing such information and filed at such periodic intervals, as the department shall prescribe by rule. Such listing shall alsoindicate the permit identification numbers for the erection, alteration or installation of such signs pursuant to section 27-147, 27-148 and article sixteen of sub-chapter one of title twenty-seven of this code and, if applicable, for the maintenance of such signs pursuant to section 26-253, unless a permit is not required pursuant to such provisions, as well as the name and license number of the master or special sign hanger who hung or erected each such sign. Such listing shall contain a certification by an architect or engineer, co-signed by a responsible officer of the outdoor advertising company that all signs under the control of such outdoor advertising company are in compliance with the zoning resolution, the administrative code and rules relating thereto. The commissioner shall make all listings filed pursuant to this subdivision accessible to the public.

b. On and after a date to be prescribed by rule, the commissioner shall require that each outdoor advertising company display, in a manner to be provided by rule, on each sign under its control or on the building or premises where each sign under its control is located or both, (i) the name and registration number of such company and, (ii) unless a permit is not required, the permit identification number for the installation, alteration or erection of the sign pursuant to section 27-147, 27-148 and article sixteen of sub-chapter one of title twenty-seven of this code and, if applicable, for the maintenance of the sign pursuant to section 26-253.

§26-262 Criminal and civil penalties for violations by outdoor advertising companies; other enforcement.-

a. (1) Notwithstanding any other provision of law, an outdoor advertising company shall be liable for a civil penalty if a sign under its control has been erected, maintained, attached, affixed, painted on, or in any other manner represented on a building or premises in violation of any provision of the zoning resolution, administrative code or rules adopted pursuant thereto relating to signs.

(2) It shall be unlawful for an outdoor advertising company to sell, lease, market, manage or otherwise make available to others for advertising purposes space on a sign that has been erected, maintained, attached, affixed, painted on or in any other manner represented on a building or premises in violation of any provision of the zoning resolution, administrative code or rules adopted pursuant thereto or to enter into any agreement for such purpose.

(3) On and after a date to be provided by rule, it shall be unlawful for an outdoor advertising company to sell or otherwise transfer control of a sign or sign location or of any right of such company to sell, lease, market, manage or otherwise make space on a sign or at a sign location available to others for advertising purposes to an outdoor advertising company that is not registered in accordance with this article and the rules of the department.

(4) An outdoor advertising company that violates any of the provisions of paragraphs one, two or three of this subdivision shall be subject to a civil penalty of, for a first violation, not more than fifteen thousand dollars and, for a second or subsequent violation, not more than twenty-five thousand dollars.

(5) Notwithstanding any inconsistent provision of law, an outdoor advertising company shall, upon being found guilty, be subject to fines or imprisonment or both pursuant to sections 26-126 or 26-248 of the code if a sign under its control has been erected, maintained, attached, affixed, painted on, or in any other manner represented on a building or premises in violation of any provision of the zoning resolution, administrative code or rules adopted pursuant thereto relating to signs.

b. On and after a date to be provided by rule, an outdoor advertising company that engages in the outdoor advertising business or, by way of advertisement, promotion or other methods holds itself out as engaging in the outdoor advertising business without registering with the department pursuant to this article, or, after such registration has been revoked or not renewed pursuant to subdivision d of section 26-260 of this code continues to engage in such business beyond a date specified by the commissioner in his or her determination to revoke or not renew, shall be guilty of a misdemeanor subject to a fine not to exceed five thousand dollars or a sentence of imprisonment of not more than one year or both such fine and imprisonment for each offense. In the case of a continuing violation each day's continuance shall be a separate and distinct violation. Such company shall also be liable for a civil penalty of, for a first violation, not more than fifteen thousand dollars and, for a second or subsequent violation, not more than twenty-five thousand dollars. Each day's continuance shall be a separate and distinct violation.

c. Civil penalties may be recovered in an action in any court of appropriate jurisdiction or in a proceeding before the environmental control board. Such board shall have the power to impose the civil penalties provided for in this section. Notwithstanding the provisions of section six hundred sixty-six of the charter, a notice of violation issued by the department pursuant to this article shall not be subject to review by the board of standards and appeals.

d. On and after a date to be provided by rule, it shall be unlawful to erect, maintain, attach, affix, paint on, or in any other manner represent on a building or premises any sign that is under the control of an unregistered outdoor advertising company. In addition to or as an alternative to any other remedies or penalties provided under any other provision of law, the commissioner may commence a proceeding for the removal of such sign or its sign structure or both in accordance with the procedures set forth in section 26-127.3 of this code for the abatement of a nuisance and any such sign and its sign structure is hereby declared to be a public nuisance pursuant thereto. All of the provisions of section 26-127.3 shall apply to the removal of a sign pursuant to this section except that a sign under the control of an unregistered outdoor advertising company may be removed whether or not it is in compliance with the zoning resolution, the administrative code or rules adopted pursuant thereto, and irrespective of whether it has a surface area greater than one hundred fifty square feet.

e. Notwithstanding any other provision of law to the contrary, an outdoor advertising company, or any affiliate thereof, that has been found guilty of a misdemeanor or liable for a civil penalty pursuant to subdivision b of this section or whose registration has been revoked pursuant to subdivision d of section 26-260 of this code shall be considered ineligible for the award of any city franchise or concession, and shall be prohibited from administering any advertising program on behalf of a city franchisee or concessionaire, for a period of five years following judgment or decision.

§26-263 Investigations. - The department may investigate any matter within the jurisdiction conferred by this article and shall have full power to compel the attendance, examine and take testimony under oath of such persons as it may deem necessary in relation to such investigation, and to require the production of books, accounts, papers and other evidence relevant to such investigation. The department of investigation may, at the request of the commissioner, assist the department in any investigation conducted pursuant to this section.
*****Local Law 14-2001.***

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TITLE 27
CONSTRUCTION AND MAINTENANCE

CHAPTER 1
BUILDING CODE

SUBCHAPTER 1
ADMINISTRATION AND ENFORCEMENT

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***"C26" omitted from section numbers in this column.**

****"27" omitted from section numbers in this column.**

ARTICLE 1 GENERAL PROVISIONS

§[C26-100.1] 27-101 Title.- This code shall be known and may be cited as the "building code of the city of New York", and is hereinafter referred to as "this code" or "the code".

§[C26-100.2] 27-102 Purpose.- The purpose of this code is to provide reasonable minimum requirements and standards, based upon current scientific and engineering knowledge, experience and techniques, and the utilization of modern machinery, equipment, materials, and forms and methods of construction, for the regulation of building construction in the city of New York in the interest of public safety, health and welfare, and with due regard for building construction and maintenance costs.

§[C26-100.3] 27-103 Scope. - This code shall apply to the construction, alteration, repair, demolition, removal, maintenance, occupancy and use of new and existing buildings in the city of New York, including the installation, alteration, repair, maintenance and use of service equipment therein, except as provided in section six hundred forty-three of the charter.

§[C26-100.4] 27-104 Interpretation.- This code shall be liberally interpreted to secure the beneficial purposes thereof. Any conflict or inconsistency between the requirements of this code and applicable state and federal laws and regulations shall be resolved in favor of the more restrictive requirement.

§[C26-100.5] 27-105 Effective date.- Any work for which an application for a permit was submitted to the department prior to the effective date of this code, (December sixth nineteen hundred sixty-eight), or for which an application for a permit is submitted to the department within a period of twelve months after such date may, however, at the option of the owner, be performed in its entirety in accordance with the requirements of this code, or in accordance with the requirements of the building laws and regulations previously in force in the city of New York, provided that such work is commenced within twelve months after the date of issuance of a permit therefor and is diligently carried on to completion. This section shall not apply to the requirements of article ten of subchapter nineteen of this chapter which shall become effective on December sixth, nineteen hundred sixty-eight.

***§[C26-100.6] 27-106 Enforcement.-** This code shall be enforced by the commissioner of buildings, pursuant to the provisions of section six hundred forty three of the New York city charter, as amended, except that the fire commissioner shall also enforce the provisions of this code relating to the approved number of persons in places of assembly (overcrowding), obstruction of aisles, corridors, and exits, the posting and availability for inspection of equipment use permits, and the availability for inspection of certificates of occupancy or other authorization of lawful occupancy, and to the maintenance of installations involving fire alarm equipment and devices, exit and directional signs, emergency lighting, fire-preventative and fire extinguishing equipment and devices, refrigerating systems, and storage tanks and auxiliary storage tanks for oil burning equipment, except that the commissioner of small business services, shall enforce all the provisions of this code with respect to buildings under the jurisdiction of the department of small business services. Where the installation of exit and directional signs, emergency lighting and sprinkler and fire alarm protection is required by the fire prevention code, the fire commissioner shall require such installations to be in accordance with the provisions of this code.
Local Law 32-2004.

§[C26-100.7] 27-107 Variations.- The requirements and standards prescribed in this code shall be subject to variation in specific cases by the commissioner, or by the board of standards and appeals, under and pursuant to the provisions of paragraph two of subdivision (b) of section six hundred forty-five and section six hundred sixty-six of the charter, as amended.

§[C26-100.9] 27-108 Application of references.- Unless otherwise specifically provided in this code, all references to articles and section numbers, or to provisions not specifically identified by number, shall be construed to refer to articles, sections, or provisions of this code.

ARTICLE 2 MATTERS COVERED

§[C26-101.1] 27-109 Building matters covered.- The provisions of this code shall cover all matters affecting or relating to buildings, as set forth in section 27-103 of article one of this subchapter, and shall extend to excavation operations, and to all types of buildings and structures and their appurtenant constructions, including vaults, signs, projections, and accessory additions, together with all surface and sub-surface construction within the curb line, including curb cuts and driveways, the coverings thereof and entrances thereto, and the issuance of permits in reference thereto.

§[C26-101.2] 27-110 Matters not provided for.- Any matter or requirement essential for the fire or structural safety of a new or existing building or essential for the safety or health of the occupants or users thereof or the public, and which is not covered by the provisions of this code or other applicable laws and regulations, shall be subject to determination and requirements by the commissioner in specific cases.

ARTICLE 3 CONTINUATION AND CHANGE IN USE

§[C26-102.1] 27-111 Continuation of lawful existing use.- The lawful occupancy and use of any building, including the use of any service equipment therein, existing on the effective date of this code or thereafter constructed or installed in accordance with prior code requirements, as provided in section 27-105 of article one of this subchapter, may be continued unless a retroactive change is specifically required by the provisions of this code.

§[C26-102.2] 27-112 Change in occupancy or use.- Changes in the occupancy or use of any building may be made after the effective date of this code, subject to the provisions of section 27-217 of article twenty-two of this subchapter. After a change in occupancy or use has been made in a building, the re-establishment of a prior occupancy or use that would not be lawful in a new building of the same construction class shall be prohibited unless and until all the applicable provisions of this code and other applicable laws and regulations for such re-established occupancy or use shall have been complied with. A change from a use prohibited by the provisions of this code, but which was permitted prior to the effective date of this code, to another use prohibited by the provisions of this code shall be deemed a violation of this code.

§[C26-102.3] 27-113 Continuation of unlawful existing use.- The continuation of the unlawful occupancy or use of a building after the effective date of this code, contrary to the provisions of this code, shall be deemed a violation of this code.

ARTICLE 4 ALTERATION OF EXISTING BUILDINGS

§[C26-103.0] 27-114 Alteration of existing buildings.- Subject to the provisions of section 27-105 of article one of this subchapter, and except as otherwise specifically provided by the provisions of this code, the following provisions shall apply to the alteration of existing buildings, whether made voluntarily or as a result of damage, deterioration or other cause, provided, however, that the following alterations shall conform with the requirements of this code regardless of magnitude or cost:

(a) Alterations or additions to existing standpipes, sprinklers or interior fire alarm and signal systems or a change in use or an enlargement to spaces requiring such protection, as provided in subchapter seventeen of this code.

(b) Alterations, replacements or new installations of equipment for heating or storing water, as provided in reference standard RS-16.

(c) Projections beyond the street line, as provided in subchapter four of this code.

(d) Sprinkler, alarm protection, and emergency lighting requirements for places of assembly, as provided in subchapter eight of this code.

[(e) Plumbing fixtures required to be installed in conjunction with any change of use, enlargement or addition to any space classified in occupancy group F-4, a place of assembly, dormitory, public building, public bath, school or workers temporary facility, as provided in table RS 16-5 of section P104.1 of reference standard RS-16.]*

(e)** Interior finish work, as provided in section 27-348.

(f)*** Finish flooring and floor covering, as provided in section 27-351.

(g)† The installation or replacement of elevators, as provided in subchapter eighteen of this code.

(h)††† The installation, alteration or replacement of refrigerating systems as provided in reference standard RS 13-6.

Copy in brackets not enacted but probably intended.
****As enacted but "(f)" probably intended.***
*****As enacted but "(g)" probably intended.***
† As enacted but "(h)" probably intended.
††† Local Law 32-2004.

§[C26-103.1] 27-115 Alterations exceeding sixty percent of building value.- If the cost of making alterations in any twelve-month period shall exceed sixty percent of the value of the building, the entire building shall be made to comply with the requirements of this code, except as provided in section 27-120 of this article.

§[C26-103.2] 27-116 Alterations between thirty percent and sixty percent of building value.- If the cost of making alterations in any twelve-month period shall be between thirty percent and sixty percent of the value of the building, only those portions of the building altered shall be made to comply with the requirements of this code, except as provided in sections 27-120 and 27-121 of this article.

§[C26-103.3] 27-117 Alterations under thirty percent of building value.- Except as otherwise provided for in sections 27-120 and 27-121 of this article, if the cost of making alterations in any twelve month period shall be under thirty percent of the value of the building, those portions of the building altered may, at the option of the owner, be altered in accordance with the requirements of this code, or altered in compliance with the applicable laws in existence prior to December sixth, nineteen hundred sixty-eight, provided the general safety and public welfare are not thereby endangered.

§[C26-103.4] 27-118 Alterations involving change in occupancy or use.-

(a) Except as otherwise provided for in this section, if the alteration of a building or space therein results in a change in the occupancy group classification of the building under the provisions of subchapter three, then the entire building shall be made to comply with the requirements of this code.

(b) Except as otherwise provided for in this section, if the alteration of a space in a building involves a change in the occupancy or use thereof, the alteration work involved in the change shall, except as provided for in this section, be made to comply with the requirements of this code and the remaining portion of the building shall be altered to such an extent as may be necessary to protect the safety and welfare of the occupants.

(c) When, however, the cost of alterations involved in the change of occupancy of an existing building erected prior to December sixth, nineteen hundred sixty-eight or space therein authorizes the alterations to be made in compliance with the applicable laws in existence on such sixth day of December, nineteen hundred sixty-eight, such change in occupancy may similarly be made in compliance with such prior laws, provided the general safety and public welfare are not thereby endangered, and further provided that the alteration work shall effect compliance with all requirements of this code relating to interior finish work, finish flooring and floor covering, sprinklers, interior fire alarms, fire command and communication systems, elevators, smoke detectors, directional signs, emergency lighting and emergency power.

††27-118.1 Illegal alterations involving change in occupancy.- No person, except in accordance with all requirements of this code, shall convert, knowingly take part or assist in the conversion, or permit the maintenance of the conversion, of a residence which is legally approved for occupancy as a dwelling for one or more families, to a residence for occupancy as a dwelling for more than the legally approved number of families. Any person who shall violate or fail to comply with the provisions of this section shall be liable for a civil penalty which may be recovered in a proceeding before the environmental control board pursuant to the provisions of section 26-126.1 of this code.

Upon the finding of such violation and the imposition of the civil penalty, the Environmental Control Board shall forward to the Internal Revenue Service, the New York State Department of Taxation and Finance and the New York City Department of Finance the name and address of the respondent, the address of the building or structure with respect to which the violation occurred, and the time period during which the violation was found to have existed.

†† Local Law 65-1997.

§[C26-103.5] 27-119 Alteration cost: building value.- For the purpose of applying the foregoing provisions of this article, the cost of making alterations shall be determined by adding the estimated cost of making the proposed alterations computed as of the time of submitting the permit application, to the actual cost of any and all alterations made in the preceding 12-month period; and the value of the building shall be determined at the option of the applicant on the basis of one and one-quarter times the current assessed valuation of the building, as adjusted by the current State equalization rate, or on the basis of the current replacement cost of the building, provided that satisfactory evidence of current replacement cost is submitted to the commissioner.

§[C26-103.6] 27-120 Alterations to multiple dwelling[s]* and conversions to multiple dwellings.- At the option of the owner, regardless of the cost of the alteration or conversion, an alteration may be made to a multiple dwelling or a building may be converted to a multiple dwelling in accordance with all requirements of this code or in accordance with all applicable laws in existence prior to December sixth, nineteen hundred sixty-eight, provided the general safety and public welfare are not thereby endangered.

****Copy in brackets not enacted but probably intended.***

§[C26-103.7] 27-121 Alterations to residence buildings.- Alterations to one- or two-family residence buildings erected under the provisions of the building code in effect prior to December sixth, nineteen hundred sixty-eight, and damaged by fire or other catastrophe to the extent of less than fifty percent of the value of the building (except as otherwise provided in section 27-297 of article four of subchapter four of this chapter) may be reconstructed in accordance with the provisions of the building code in effect prior to December sixth, nineteen hundred sixty-eight.

§[C26-103.8] 27-122 Alterations involving conversions from seasonal to year round use.-

(a) Buildings converted from seasonal use to year round use shall comply with the minimum building insulation standards as provided in reference standard RS 12-10, energy conservation in new building design, with the exception that the provisions as set forth in opinion 76-16, state of New York, public service commission, dated August thirteenth, nineteen hundred seventy-six, relating to noise control and fire rating shall not apply. The standards set forth in this code relating to noise control and fire rating and other applicable standards shall apply.

(b) All alterations performed in accordance with the requirements of this section shall also be in full compliance with the provisions of subchapter fourteen (inspections) of chapter one of title twenty-six of the administrative code to insure a method of controlled inspection of all converted buildings.

§[C26-103.9] 27-123 Alterations involving high hazard occupancies.- Any building erected prior to the effective date of this code (December sixth, nineteen hundred sixty-eight) and complying with section 27-117 of this article may be utilized for new high hazard occupancies without compliance with article two of subchapter six of this chapter on condition that the building or building section for such high hazard occupancy be provided with an approved one source automatic sprinkler system complying with the provisions of subchapter seventeen for B-1 occupancies regardless of the area thereof. Existing high hazard occupancies in structures erected prior to the effective date of this code and complying with section 27-117 of this article may continue to operate, subject to such fire protection requirements as the fire commissioner shall direct.

****27-123.1 Alterations, additions, repairs and changes in occupancy or use requiring facilities for people having physical disabilities.-** The provisions of subarticle two of article two of subchapter four of chapter one of title twenty-seven of this code shall apply to alterations, additions and repairs made to buildings, as well as to changes in occupancy or use, as set forth below. The provisions of sections 27-115, 27-116, 27-117, 27-118 and 27-120 of this code shall not govern the application of the provisions of such subarticle.

(a) The provisions of subarticle two of article two of subchapter four of chapter one of title twenty-seven of this code shall apply to an entire existing building, as if hereafter erected, when the costs of any alterations, additions or repairs, other than ordinary repairs, made within any twelve-month period immediately following the filing of the application exceed fifty percent of the cost of replacement of the building with one of similar floor space, as estimated by the department at the beginning of that twelve-month period. When such estimated costs of alterations, additions or repairs, other than ordinary repairs, do not exceed fifty percent of such replacement cost, then the provisions of subarticle two of article two of subchapter four of chapter one of title twenty-seven shall apply to such alterations, additions or repairs, although nothing herein is meant to discourage compliance with the standards set forth in subarticle two of article two of subchapter four of chapter one of title twenty-seven in other portions of buildings described in this sentence.

(b) The provisions of subarticle two of article two of subchapter four of chapter one of title twenty-seven of this code shall apply to an entire existing building, as if hereafter erected, when there is a change in occupancy classification of the building. The provisions of subarticle two of article two of subchapter four of chapter one of title twenty-seven of this code shall apply to a space in a building when there is a change in the occupancy type thereof or in how such space is used.

(c) When any work not otherwise required to comply with the provisions of subarticle two of article two of subchapter four of chapter one of title twenty-seven is done on an interior accessible route in existing residential buildings, other than in occupancy group J-3, which work involves plumbing fixtures, that work shall be required to comply with section 27-292.8 of this code for the extent of the work being performed, provided such work will not require any structural changes or additional partitions; ordinary repairs and replacement of existing piping shall be exempt from the provisions of this sentence.

(d) Where additions or alterations subject parts of existing systems to loads exceeding those permitted herein, such parts shall be made to comply with this code.

(e) The provisions of subarticle two of article two of suchapter four of chapter one of title twenty-seven of this code and of subdivisions b and c of this section shall not apply to the alteration of existing residential buildings, other than adult residential care facilities, which are classified in occupancy group J-2 and contain no more than three dwelling units or which are classified in occupancy group J-3 and are being altered to contain three dwelling units, and which satisfy the requirements of subdivision (d) of section 27-357 of this code, when the cost of any alterations, additions or repairs, other than ordinary repairs, made within any twelve-month period immediately following the filing of the application do not exceed fifty percent of the cost of replacement of the building with one of similar floor space, as estimated by the department at the beginning of that twelve-month period.

****Local Law 58-1987.***

*** § 27-123.2 Provision of sprinklers in existing buildings.-** Notwithstanding any provision of law to the contrary, the provisions of section 27-954 of this code shall apply to alterations made to buildings, as well as to changes in occupancy or use, as set forth below:

(a) The provisions of section 27-954 of this code shall apply to an entire existing building that is being altered, when such building is classified in occupancy group J-2 and will have four or more dwelling units upon the completion of the alterations, or is classified in occupancy group J-1, and when the costs of making any alterations to any such J-1 or J-2 building within any twelve-month period exceeds fifty percent of the building value.

(b) The provisions of section 27-954 of this code shall apply to an entire existing building when the occupancy classification of the building will change to a residential occupancy group other than occupancy group J-2 with not more than three dwelling units or occupancy group J-3.

(c) The provisions of section 27-954 of this code shall apply to any space:

(1) when alterations thereto involve a change in the occupancy or use thereof to a residential occupancy group other than occupancy group J-2 with not more than three dwelling units or occupancy group J-3, or

(2) when the costs of making alterations thereto within any twelve-month period exceeds fifty percent of the value of the space.

(d) For the purposes of this section, the cost of making alterations and the value of any such building or space shall be determined as set forth in section 27-119 of this chapter; provided, however, that for purposes of this section:

(1) the cost of making alterations to a residential building shall be determined based on the aggregate cost of alterations to the residential Portions of such building, and the value of such a building shall be determined based on the aggregate value of the residential portions of the building, exclusive of the value of any non-residential portions of the building; and

(2) the cost of making alterations to residential spaces in a non-residential building shall be determined based on the collective cost of alterations to such spaces, and the value of such residential spaces shall be determined based on the aggregate value of all such spaces in the building, exclusive of the value of any non-residential portions of the building.

(e) When a system of automatic sprinklers is installed in any existing building or space pursuant to this section, such system shall comply with the requirements of this code and any other laws and rules applicable to the occupancy group in which such building or space is classified or in which such building or space would be classified if such building or space were classified under this chapter.

****Local Law 10-1999.***

ARTICLE 5 MINOR ALTERATIONS: ORDINARY REPAIRS

§[C26-104.1] 27-124 Minor alterations.- For the purposes of this code, the term "minor alterations" shall mean minor changes or modifications in a building or any part thereof, excluding additions thereto, that do not in any way affect health or the fire or structural safety of the building. Minor alterations shall not include any of the work described or referred to in section 27-126 of this article, or any other work for which a permit is required under the provisions of articles ten through seventeen of this subchapter.

§[C26-104.2] 27-125 Ordinary repairs.-

For the purposes of this code, the term "ordinary repairs" shall mean replacements or renewals of existing work in a building, or of parts of the service equipment therein, with the same or equivalent materials or equipment parts, that are made in the ordinary course of maintenance and that do not in any way affect health or the fire or structural safety of the building or the safe use and operation of the service equipment therein. Ordinary repairs shall not include any of the work described or referred to in section 27-126 of this article or any other work for which a permit is required under the provisions of articles ten through seventeen of this subchapter.

[**]§[C26-104.3] 27-126 Work not constituting minor alterations or ordinary repairs. -

(a) For the purposes of this code, minor alterations or ordinary repairs shall not include the cutting away of any wall, floor, or roof construction, or any portion thereof; or the removal, cutting, or modification of any beams or structural supports; or the removal, change, or closing of any required means of egress; or the rearrangement or relocation of any parts of the building affecting loading or exit requirements, or light, heat, ventilation, or elevator requirements; nor shall minor alterations or ordinary repairs include additions to, alterations of, or rearrangement, relocation, replacement, repair or removal of any portion of a standpipe or sprinkler system, water distribution system, house sewer, private sewer, or drainage system, including leaders, or any soil, waste or vent pipe, or any gas distribution system, or any other work affecting health or the fire or structural safety of the building.

(b) Minor alterations or ordinary repairs shall include the repair or replacement of any fixture, piping or faucets from the inlet side of a trap to any exposed stop valve.

Local Law 51-2001.

ARTICLE 6 MAINTENANCE

§[C26-105.1] 27-127 Maintenance requirements.- All buildings and all parts thereof shall be maintained in a safe condition. All service equipment, means of egress, devices, and safeguards that are required in a building by the provisions of this code or other applicable laws or regulations, or that were required by law when the building was erected, altered, or repaired, shall be maintained in good working order.

§[C26-105.2] 27-128 Owner responsibility.- The owner shall be responsible at all times for the safe maintenance of the building and its facilities.

***§[C26-105.3] 27-129 Exterior walls and appurtenances thereof.-**

In order to maintain a building's exterior walls and appurtenances thereof in a safe condition, the following additional requirements shall apply to all existing buildings or buildings hereafter erected which are greater than six stories in height:

(a) Inspection requirements.- A critical examination of an applicable building's exterior walls and appurtenances thereof shall be conducted at periodic intervals as set forth by rule of the commissioner, but such examination shall be conducted at least once every five years.

(1) The initial examination for any building in existence on February twenty-first, nineteen hundred eighty shall be conducted prior to February twenty-first, nineteen hundred eighty-two and the initial examination for any building thereafter constructed shall be conducted in the fifth year following the erection or installation of any exterior wall and/or enclosures.

(2) Such examination shall be conducted and witnessed by or under the direct supervision of a licensed architect or licensed professional engineer by or on behalf of the owner of the building.

(3) Such examination shall include, in addition to an inspection, a complete review of the most recently prepared report.

(4) Such examination shall also be conducted in accordance with applicable rules promulgated by the commissioner.

(b) Notification requirements.- Whenever an architect or engineer learns through a critical examination of a building's exterior walls and appurtenances thereof of an unsafe condition prior to the filing of a report with the department of buildings pursuant to subdivision (c) of this section, he or she shall notify the owner and the department of buildings immediately in writing of such condition.

(c) Report of examination.-Such architect or engineer shall submit a written report certifying the results of such examination to the commissioner, clearly documenting the condition of the exterior walls and appurtenances thereof, as either safe, unsafe or safe with a repair and maintenance program. The report shall include a record of all significant deterioration, unsafe conditions and movement observed as well as a statement concerning the watertightness of the exterior surfaces. Such report must be signed by and bear the professional seal of such architect or engineer.

(d) Necessary repairs.-

(1) Unsafe condition.

a. Upon the filing of the architect's or engineer's report of an unsafe condition with the commissioner, the owner, his or her agent or the person in charge shall immediately commence such repairs or reinforcements and shall undertake such measures as may be required to secure public safety and to make the building's exterior walls or appurtenances thereof conform to the provisions of this code.

b. All unsafe conditions shall be corrected within thirty days of the filing of the critical examination report.

c. The architect or engineer shall inspect the premises and file an amended report setting forth the condition of the building within two weeks after

repairs to correct the unsafe condition have been completed.

d. The commissioner may grant an extension of time of up to ninety days to complete the repairs required to correct an unsafe condition upon receipt and review of an initial extension application submitted by the architect or engineer together with such additional documentation as may be prescribed by rule.

e. The commissioner may grant a further extension of time to complete the repairs required to remove an unsafe condition upon receipt and review of an application for a further extension submitted by the architect or engineer together with such further documentation as may be prescribed by rule.

(2) Safe condition with a repair and maintenance program. An architect or engineer shall not file a report of a safe condition with a repair and maintenance program for the same building for two consecutive filing periods unless the second such report is accompanied by his or her certification attesting to the correction of all conditions identified in the earlier report as requiring repair.

(e) Exceptions.- The additional requirements imposed by this section shall not be applied to any part of an exterior wall which is less than twelve inches from the exterior wall of an adjacent building.

(f) Violations.- Any person who shall violate, or refuse, or neglect to comply with any provisions of this section shall, upon conviction thereof, be punished by a fine of not more than one thousand dollars, or by imprisonment not exceeding six months, or both; and any such person shall, also, for each offense, be subject to the payment of a penalty in the sum of two hundred fifty dollars for each month there is non-compliance, to be recovered in a civil action brought in the name of the commissioner.

(g) With respect to buildings in existence on March first, nineteen hundred ninety eight, the initial critical examination of an exterior wall which was not subject to such examination under the provisions of paragraph one of subdivision d of this section in effect prior to the effective date of this local law shall be conducted prior to March first, two thousand.

Local Law 11-1998.

ARTICLE 7 MATERIALS, ASSEMBLIES, FORMS AND METHODS OF CONSTRUCTION

§[C26-106.1] 27-130 General requirements.- All materials, assemblies, forms, and methods of construction (hereinafter collectively referred to as "material" or "materials") which, in their use, are regulated by the provisions of this code, shall be subject to the requirements for acceptance, as provided in section 27-131 of this article and to the requirements for inspection, as provided in section 27-132 of this article, except as otherwise specifically provided by the provisions of this code. Materials which in their use do not require regulation and control in the interests of public safety, health, and welfare, are not subject to any requirement of acceptance, inspection, test, or approval under the provisions of this code.

***§[C26-106.2] 27-131 Acceptance requirements.-** The following requirements shall apply to the initial acceptance of all materials which, in their use, are regulated by the provisions of this code:

(a) Methods of acceptance.-No material of any manufacturer or producer shall be acceptable for the use intended unless and until the material shall have been tested for compliance with code requirements under a test method prescribed by the code, or shall have been tested and approved by the commissioner or shall have been previously approved by the board of standards and appeals, unless such approval is amended or repealed by the commissioner.

(1) Code test method.- Whenever the code prescribes a method for testing any material, the material shall be tested in accordance with such test method (a) under the direction of an architect or engineer, or (b) by a testing service or laboratory acceptable to the commissioner. The commissioner may require the witnessing of tests by his or her representative. The test report showing compliance with code requirements and bearing the signature of the architect or engineer, or the signature of an officer of the testing service or laboratory, as the case may be, shall be filed with the department. The commissioner may require a certificate of the manufacturer or producer, certifying that the material tested was and is equivalent to material of the same kind and quality regularly being manufactured by such manufacturer or producer. Upon the filing of the test report, as provided above, the material shall be acceptable for the use intended, subject to the provisions of subdivisions (d) and (e) of this section.

(2) Commissioner approval.- Materials which in their use are regulated by the provisions of this code but cannot satisfy the requirements of paragraph one of this subdivision shall not be acceptable for the use intended unless and until the material shall have been tested and approved for such use by the commissioner. For the purposes of this requirement, all materials legally acceptable prior to July 1, 1991 shall be permitted subject to the provisions of subdivision d of this section.

(b) List of acceptable laboratories and materials.- A current list of all testing services and laboratories acceptable to the commissioner for the purpose of testing materials, as provided in subparagraph (b) of paragraph one of subdivision (a) of this section and a current list of all acceptable materials, shall be maintained by the department and made available for public inspection.

(c) Certification of accepted materials.- All shipments and deliveries of such materials shall be accompanied by a certificate or label certifying that the

material shipped or delivered is equivalent to the materials tested and acceptable for use, as provided in this section. Such certificate or label is to be provided (1) by the manufacturer or producer of the material, or (2) by a testing service or laboratory acceptable to the commissioner and regularly engaged by the manufacturer or producer to make periodic inspections and/or tests of the material in the course of manufacture or production. In the case of materials previously approved by the board of standards and appeals, the shipment or delivery of the material shall also be accompanied by a tag or label stating that the material has been approved for use by the board, and containing the calendar number under which the material received board approval.

(d) Retesting of materials.- All materials tested and acceptable for use, shall be subject to periodic retesting as determined by the commissioner; and any material which, upon retesting is found not to comply with code requirements or the requirements set forth in the approval of the commissioner shall cease to be acceptable for the use intended. During the period for such retesting, the commissioner may require the use of such material to be restricted or discontinued if necessary to secure safety.

(e) Conflicting test results.- Whenever there is evidence of conflicting results in the test of any material, the commissioner shall determine the acceptability of the material and/or the acceptable rating for such material.
Local Law 49-1991.

***§27-131.1 Reference Standards.-** The appendix to this chapter of the administrative code, known as the "building code reference standard", is adopted and promulgated and shall be known as the "building code rules" of said chapter; except for reference standards RS4-3, RS7-2, and such portions of RS16 not included in the "List of Referenced National Standards". The commissioner shall be empowered to issue or amend the building code reference standards acting in consultation with the fire commissioner on all issues relating to fire safety.
Local Law 49-1991.

§[C26-106.3] 27-132 Inspection requirements.- The following requirements shall apply to the inspection of all materials which, in their use, are regulated by the provisions of this code:

(a) Controlled inspection.- All such materials which are designated for "controlled inspection" under the provisions of this code shall be inspected and/or tested to verify compliance with code requirements. Unless otherwise specifically provided by code provisions, all required inspections and tests of materials designated for "controlled inspection" shall be made and witnessed by or under the direct supervision of an architect or engineer retained by or on behalf of the owner or lessee, who shall be, or shall be acceptable to, the architect or engineer who prepared or supervised the preparation of the plans; and the architect or engineer by whom, or under whose direct supervision, the required inspections and tests are made and witnessed shall file with the department signed copies of all required inspection and test reports, together with his or her signed statement that the material and its use or incorporation into the work comply with code requirements, unless the filing of such reports and statements is specifically waived by code provisions. The provisions of section 27-195 of article nineteen of this subchapter relating to notice of commencement of work shall be complied with prior to the commencement of any work requiring controlled inspection.

(b) Semicontrolled inspection.- All such materials that are not designated for controlled inspection under the provisions of this code shall be subject to semicontrolled inspection and, as such, shall be inspected and/or tested to verify compliance with code requirements by the person superintending the use of the material or its incorporation into the work, except that all required inspections and tests may, at the option of the owner or lessee, be made and witnessed by or under the direct supervision of an architect or engineer retained by or on behalf of the owner or lessee, who shall be, or shall be acceptable to, the architect or engineer who prepared or supervised the preparation of the plans. The person superintending the use of the material or its incorporation into the work, or the architect or engineer by or under whose direct supervision the required inspections and tests are made and witnessed, as the case may be, shall file with the department signed copies of all required inspection and test reports, together with his or her signed statement that the material and its use or incorporation into the work comply with code requirements, unless the filing of such reports and statement is specifically waived by code provisions.

(c) Off-site inspection.- In all cases where code provisions require that the inspection and/or test of materials be made off-site, or prior to actual use or incorporation into the work, the inspector shall mark or cause to be marked for identification all units (or packages of units) of the material inspected; and the reported results of such inspection shall state that the material was so marked for identification.

§[C26-106.4] 27-133 Alternate or equivalent materials.- Whenever the code prescribes the use of a particular material, the commissioner may permit the use of any material shown to be equivalent for the use intended, in terms of health, fire, and/or structural safety. Nothing contained in this code shall be construed to require the use of any particular material for the purpose of meeting performance requirements of this code.

ARTICLE 8 SERVICE EQUIPMENT

§[C26-107.1] 27-134 General requirements.- All service equipment and machinery and devices used in connection therewith (hereinafter collectively referred to as "equipment") which, in their use, are regulated by the provisions of this code, shall be subject to the requirements for acceptance, as provided in section 27-135, and to the requirements for inspection, as provided in section 27-136 of this article, except as otherwise specifically provided by the provisions of this code. Equipment which in its use does not require regulation and control in the interests of public safety, health, and welfare, is not subject to any requirement of acceptance, inspection, test, or approval under the provisions of this code. Elements or appurtenances of equipment or machinery which are in conformity with specifications relating thereto in this code, or which may be designed in their entirety in accordance with accepted engineering design principles based on provisions of this code are not subject to the requirements for acceptance.

§[C26-107.2] 27-135 Acceptance requirements.- The requirements for acceptance of materials, as provided in section 27-131 of article seven of this subchapter, shall apply to the initial acceptance of all equipment which, in its use, is regulated by the provisions of this code; and for this purpose, the word "equipment" shall be substituted for the words "or materials" wherever those words occur in section 27-131 of article seven of this subchapter.

§[C26-107.3] 27-136 Inspection requirements.- The requirements for inspection of materials, as provided in section 27-132 of article seven of this subchapter, shall apply to the inspection of all equipment which, in its use, is regulated by the provisions of this code; and for this purpose, the word "equipment" shall be substituted for the words "material" and "materials" wherever those words occur in section 27-132 of article seven of this subchapter.

§[C26-107.4] 27-137 Alternate or equivalent equipment.- Whenever the code prescribes the use of particular equipment, the commissioner may permit the use of any equipment shown to be equivalent for the use intended, in terms of health, fire and/or structural safety. Nothing contained in this code shall be construed to require the use of any particular equipment for the purpose of meeting performance requirements of this code.

ARTICLE 9 APPROVAL OF PLANS

§[C26-108.1] 27-138 Separate approval of plans required.- Whenever plans are required to be submitted in connection with applications for work permits, as provided in articles ten through seventeen of this subchapter, separate application shall be made for the approval of the plans therefor. The application may be made at or prior to the time of submitting the work permit application**.**

§[C26-108.2] 27-139 Application for approval of plans.- Applications for approval of plans shall be made on forms furnished by the department, and shall be accompanied by the required fee. The application shall contain a general description of the proposed work, its location, and such other pertinent information as the commissioner may require. All applications for approval of plans for any new construction, in which plumbing fixtures are to be installed, shall be accompanied by the following:

1. Information as to the availability of a public sewer system.

*2. In the event that a private sewage treatment plant is proposed, evidence of submission of plans for approval of such plant to the department of environmental protection and the department of health as required by law.

(a) the lot diagram showing compliance with the zoning resolution, as provided in paragraph one of subdivision (a) of section 27-157 of article eleven of this subchapter;

(b) the foundation plans, as provided in paragraphs one and seven of subdivision (b) of section 27-157 of article eleven of this subchapter;

(c) the floor and roof plans showing compliance with exit requirements, as provided in paragraph three of subdivision (a) of section 27-157 of article eleven of this subchapter;

(d) the detailed architectural, structural and mechanical drawings, as provided in subdivisions (a) through (c) of section 27-157 of article eleven of this subchapter.

Local Law 65-1996.

****§[C26-108.3] 27-140 Applicant.-** Applications for approval of plans shall be made in behalf of the owner or lessee or condominium unit owner or cooperative shareholder by the person who prepared or supervised the preparation of the plans, and shall be accompanied by a signed statement of the owner, condominium board of managers or cooperative board of directors stating that the applicant is authorized to make the application. In the case of applications for approval of plans for the construction or alteration of buildings, for the installation or alteration of plumbing or plumbing systems, or for the installation or alteration of service equipment which involves changes in the structure of the building or requirements for fire protection, light, heat, ventilation, or means of egress, the application shall be made by protection, light, heat, ventilation, or means of egress, the application shall be made by an architect or engineer. The full names and addresses of the owner,

including the condominium unit owner or cooperative shareholder, lessee, and applicant, and of the principal officers thereof, if a corporation, shall be set forth in the application.
*****Local Law 72-1991.***

***** §27-140.1 Registration requirements.-**

(a) No person, other than those described in subdivision (c) of this section, may present, submit, furnish or seek approval of applications for approval of plans or remove any documents from the possession of the department, without first having registered with the department his or her name, address and company affiliation on a form to be furnished by the department. Consistent with article twenty-three-A of the correction law, registration may be denied to any person who has been convicted of a criminal offense relating to bribing or receipt of a bribe, giving or receiving unlawful gratuities, official misconduct, or other corruption-related acts. The commissioner, after due notice and a hearing before the office of administrative trials and hearings, pursuant to section one thousand forty-eight of the charter and rules established thereunder, shall have the power to revoke, suspend or limit the registration of any person upon a finding that such person has willfully or negligently violated the rules of the department or has engaged in any misconduct arising out of his or her business dealings with the department. Misconduct shall be defined by the rules of the commissioner promulgated pursuant to subdivision (d) of this section.

(b) No person shall use the term "registered with the department of buildings", "registered" or any similar representation in such a manner as to convey the impression that such person is registered with the department of buildings unless such person is registered in accordance with the provisions of this section.

(c) The following persons are exempt from the provisions of this section:

(i) the owners of the premises for which the building applications are filed including, in the case of partnerships or corporations, the general partners or the principal officers of the corporation. Principal officers of a corporation shall include the president, vice presidents, secretary and treasurer;

(ii) the lessees of such premises authorized by the owner to file building applications;

(iii) condominium unit owners authorized by the condominium board of managers to file building applications;

(iv) cooperative shareholders authorized by the cooperative board of directors to file building applications;

(v) registered architects licensed by the New York state department of education;

(vi) professional engineers licensed by the New York state department of education;

(vii) attorneys admitted to practice in New York state;

(viii) master plumbers licensed pursuant to article two of subchapter two of chapter one of title twenty-six of this code;

(ix) master fire suppression piping contractors licensed pursuant to article two of subchapter two of chapter one of title twenty-six of this code; and

(x) master electricians licensed pursuant to subchapter one of chapter three of title twenty-seven of this code.

(a) the commissioner shall promulgate rules for the proper and efficient administration and enforcement of this section.
******Local Law 72-1991.***

§[C26-108.4] 27-141 Plans.- With each application for approval of plans, there shall be submitted such number of copies of the plans as the commissioner may require. All plans shall comply in form and content with requirements of this code and other applicable laws and regulations.

§[C26-108.5] 27-142 Applicant's statement.-

(a) A signed statement of the applicant shall also be submitted with the application, stating that he or she is authorized by the owner to make the application and that, to the best of his or her knowledge and belief, the plans and the work shown thereon comply with the provisions of this code and other applicable laws and regulations. If there are practical difficulties in the way of carrying out the strict letter of the law, the applicant shall set forth the nature of such difficulties in such signed statement.

(b) In addition to all other requirements of this article, an application for approval of plans for the alteration of an existing building or the construction of a new building shall be accompanied by a signed statement of the applicant certifying either (1) that the building to be altered, or the site of the new building, as the case may be, contains no occupied housing accommodations subject to control under chapter three of title twenty-six of the administrative code, or (2) that the owner has notified the city rent agency of his or her intention to file such plans and has complied with all requirements imposed by the regulations of such agency as preconditions for such filing.

§[C26-108.6] 27-143 Examination of application and plans.- All applications for approval of plans and all plans submitted in connection therewith, and any amendments thereto, shall be numbered, docketed and examined promptly after their submission. The examination shall be made under the direction of the commissioner for compliance with the provisions of this code and other applicable laws and regulations. The commissioner may at his or her discretion, when the application is submitted by an architect or an engineer,

designate portions of the examination for limited supervisory check. The personnel employed for examination of plans shall be qualified engineers or architects experienced in building construction and design.

***§[C26-108.7] 27-144 Approval of application and plans.-** Except as otherwise provided in section 27-198 and section 27-198.1 of article nineteen of this subchapter, applications and plans complying with the provisions of this code and other applicable laws and regulations shall be approved by the commissioner and written notice of approval shall be given the applicant promptly and no later than forty calendar days after the submission thereof, and applications and plans failing to comply with the provisions of this code and other applicable laws and regulations shall be rejected and written notice of rejection, stating the grounds of rejection, shall be given the applicant promptly and not later than forty calendar days after the submission thereof, except that on or before the fortieth day, the commissioner may on good cause shown, and upon notification to the applicant, extend such times for an additional twenty days. Whenever an application and accompanying plans have been rejected and are thereafter revised and resubmitted to meet stated grounds of rejection, the revised application and plans shall be approved if they meet the stated grounds of rejection, or shall be rejected if they fail to meet the stated grounds of rejection; and written notice of approval or written notice of rejection, stating the grounds of rejection, shall be given the applicant promptly and not later than twenty calendar days after the resubmission thereof.

Local Law 76-1985, language juxtaposed per Ch. 907-1985.

§[C26-108.8] 27-145 Conditional approval of plans.- All approvals of plans given prior to the submission of the work permit application shall be conditioned upon and subject to compliance with the requirements of this code and other applicable laws and regulations in effect at the time of submission of the permit application, and shall also be conditioned upon the submission of the work permit application not later than twelve months after the date of notice of plan approval.

§[C26-108.9] 27-146 Endorsement of approved plans.- All plans and amendments thereto, when approved by the commissioner, shall be stamped or endorsed approved under the official seal of the department, followed by a notation of the date of plan approval. One set of such approved plans shall be retained in the department office of the borough in which the building premises or equipment is located; and after the issuance of a work permit, a second set of such approved plans shall be retained at the place where the building premises or equipment is located, and shall be open at all times to inspection by the commissioner and his or her authorized representatives until final inspection of the work is completed.

ARTICLE 10 PERMITS

§[C26-109.1] 27-147 When permits required.- No building construction or alteration work, foundation or earthwork, demolition or removal work, or plumbing work shall be commenced, and no signs or service equipment of the types listed in articles sixteen and seventeen of this subchapter shall be erected, installed, altered, repaired, or used, nor shall any service equipment of the types listed in article eighteen of this subchapter be used or operated, unless and until a written permit therefor shall have been issued by the commissioner. The provisions of this section shall not apply, however, to minor alterations and ordinary repairs, as defined and delineated in article five of this subchapter or to work or equipment exempted from permit requirements under the provisions of sections 27-176, 27-179, 27-184, and 27-189 of this subchapter.

§[C26-109.2] 27-148 Classification of permits.- For the purposes of this code, permits shall be classified as follows:

(a) New building permits: for the construction of new buildings, as provided in article eleven of this subchapter.

(b) Alteration permits: for the alteration of existing buildings, as provided in article twelve of this subchapter.

(c) Foundation and earthwork permits: for the construction or alteration of foundations, including earthwork excavation and fill, as provided in article thirteen of this subchapter.

(d) Demolition and removal permits: for the demolition or removal of existing buildings, as provided in article fourteen of this subchapter.

(e) Plumbing permits: for the installation or alteration of plumbing and plumbing systems including gas piping, as provided in article fifteen of this subchapter.

(f) Sign permits: for the erection or alteration of signs and sign installations, as provided in article sixteen of this subchapter.

(g) Equipment work permits: for the installation or alteration of service equipment, as provided in article seventeen of this subchapter.

(h) Equipment use permits: for the use and operation of service equipment, as provided in article eighteen of this subchapter.

****§[C26-109.3] 27-149 Separate permits required**.- Separate permits shall be required, as provided above, except that separate permits for foundations and earthwork, or for the installation or alteration of service equipment, other than fire suppression piping systems,

shall not be required whenever plans for such work are included in and form a part of the plans for the construction of new buildings or the alteration of existing buildings.
***** Local Law 107-1993.***

***§[C26-109.4] 27-150 Application for permit.-**
All applications for permits shall be submitted on forms furnished by the department, and shall be accompanied by the required fee. The application shall contain a general description of the proposed work or equipment, its location, and such other pertinent information as required pursuant to section 27-198.1 or as the commissioner may require.
* ***Local Law 76-1985, language juxtaposed per Ch. 907-1985.***

§[C26-109.5] 27-151 Applicant.- Applications for permits shall be made by or in behalf of the owner or lessee of the buildings; and if made by a person other than the owner, the application shall be accompanied by a signed statement of the applicant declaring that he or she is authorized by the owner to make the application. The full names of the owner, lessee, and applicant, and of the principal officers thereof, if a corporation, shall be set forth in the application.

§[C26-109.6] 27-152 Other application requirements.- In addition to the foregoing general requirements, applications for permits shall be subject to the further requirements of articles eleven through eighteen of this subchapter, as the same may be applicable.

** **§[C26-109.7] 27-153 Place of filing applications.-** Except as otherwise provided by rule, applications for permits and accompanying papers and plans shall be filed in the department office in the borough in which the work or equipment is located. Applications shall be numbered and docketed promptly as received; and for purposes of identification and reference, all such papers shall be marked with the block and lot number of the property to which they apply, and with street and house number where possible.
*****Local Law 107-1993.***

§[C26-109.8] 27-154 Amendments to applications.-
Subject to the limitations of section 27-155 of this article, amendments to permit applications and any accompanying plans and papers may be submitted at any time before final inspection of the work or equipment is completed; and such amendments shall be deemed part of the original permit application and shall be filed therewith.

§[C26-109.9] 27-155 Time limitation of application.-
An application for a permit shall be deemed to have been abandoned twelve months after date of submission, unless such application has been diligently prosecuted after rejection in whole or in part, or a permit shall have been issued under article nineteen of this subchapter except that the commissioner may, for reasonable cause, grant extensions of time for additional twelve month periods.

ARTICLE 11 APPLICATIONS FOR NEW BUILDING PERMITS

§[C26-110.1] 27-156 General requirements.- All applications for new building permits shall be subject to the requirements of articles nine and ten of this subchapter. In addition, each such application shall set forth the name and business address of the person who is to perform the proposed work, and shall be accompanied by satisfactory evidence of compliance with the provisions of the workers compensation law.

§[C26-110.2] 27-157 Plans required.- All such applications shall be accompanied by architectural, structural, and mechanical plans, which shall be complete and of sufficient clarity to indicate the entire nature and extent of the proposed construction work and its compliance with the provisions of this code and other applicable laws and regulations. Composite plans showing architectural, structural, and mechanical parts of a building may be submitted provided that a clear understanding of each part is not impaired. The plans may be submitted with the application for the permit or prior thereto, as provided in section 27-138 of article nine of this subchapter; and the same set of plans may be used for several buildings of the same construction, if such buildings are located on adjoining lots under the same ownership, and if permit applications therefore [*sic*] are filed simultaneously. All such plans shall be drawn to suitable scale and shall be reproduced upon substantial paper, plastic, or cloth, as the commissioner may require; and each plan or drawing shall contain the registration number, seal, signature, and address of the architect or engineer who prepared or supervised the preparation of the plans. Whenever equipment, materials, assemblies, forms, or methods of construction are subject to "controlled inspection", as provided in sections 27-131 and 27-135 of this subchapter, all such equipment, materials, assemblies, forms, or methods of construction shall be listed on the title sheet of the plans, or the sheet immediately following as subject to "controlled inspection" in accordance with code requirements. In no case shall the code be cited or the term "legal" or its equivalent used as a substitute for specific reference to particular code section or standard in order to show compliance with code requirements or other applicable laws or regulations**.**

(a) Architectural plans shall contain at least the following data and information:

(1) Lot diagram showing compliance with the zoning resolution, and indicating the size, height and

location of the proposed construction and all existing structures on the site and their distances from lot and street lines, the established grade and existing curb elevations, and final grade elevations of the site shown by contours or spot grades at reasonable intervals. The lot diagram shall be drawn in accordance with an accurate boundary survey, made by a licensed surveyor, which shall be attached to and form part of the lot diagram.

(2) A statement or notation as to the occupancy group or groups that apply to the building and all parts thereof, the construction class of the building, and whether the building is inside or outside of the fire districts.

(3) Floor and roof plans showing compliance with exit requirements, and with sufficient elevations and cross-sections to indicate all means of egress, and including the number of stories in all parts of the building.

(4) Detailed drawings necessary to show adequately all architectural elements of the building, including those doors, windows, and interior finish schedules, and other details necessary to substantiate all required fire-protection characteristics.

(b) Structural plans shall contain at least the following data and information except as provided for in section 27-590 of article one of subchapter ten of this chapter:

(1) Foundation plans, floor plans, levels, and sections, showing all structural requirements.

(2) Detailed drawings showing sizes, sections, and locations of members, and such other information as may be required to indicate clearly all structural elements and special structural engineering features.

(3) A tabulation of the vertical live loads, both uniform and concentrated (including allowances of partition loads), used in the design of the several areas and levels of the building. The locations and loads of each piece of machinery and equipment having a weight in excess of one thousand pounds shall be noted.

(4) Column schedules showing the design load contributed by the framing at any level and the total accumulated design load at each level.

(5) Where trusses are employed, a diagram or table indicating the loads or moments in the various members under the design loading conditions. The requirement for a diagram or table will be waived when the trusses consist of elements selected from load tables or similar data, subject to the requirements for verification in section 27-590 of article one of subchapter ten of this chapter.

(6) Where prestressed members are employed, a schedule or table showing the total prestressing forces and the method and sequence of application.

(7) Foundation plans shall comply with the requirements of subchapter eleven of this chapter and shall show the plan locations, design elevations of the bottoms, and details as to sizes, reinforcements, and construction of all footings, piers, foundation walls, pile groups, and pile caps. The levels of footings of adjacent structures shall be indicated or, if the adjacent structures are pile supported, this shall be so stated. In addition, there shall be a statement indicating the character and minimum class of the soil strata required for the support of the foundation; the allowable soil pressure used for the design of footings; and the character, class, and presumptive bearing capacity of the bearing stratum to which piling is required to penetrate. The types and design capacities of piling and the records of required borings or test pits shall also be shown.

(c) Mechanical plans shall contain at least the following data and information:

(1) The plumbing, heating, ventilating, refrigeration, and other mechanical work to be performed, so drawn as to conform to the architectural and structural aspects of the building. If desired, plans may be composite plans showing one or more types of systems on each plan, provided that a clear understanding of each system shown is not thereby impaired.

(2) Details for each type of work to be performed, and for each type of equipment to be installed, shall be shown, as provided in sections 27-173 and 27-182 of this subchapter.

(3) Information as to the availability of a public sewer system.

** (4) In the event a public sewer system is not available, alternate provisions for disposal of storm water and sanitary sewage. If private sewers are to be constructed pursuant to subdivision b of section fourteen hundred three of the New York city charter, a copy of the sewer plan. If a private sewage treatment plant is to be constructed, a copy of plans of the plant approved by the department of health and the department of environmental protection. If an individual on site private sewage disposal system is to be installed, a site and subsoil evaluation indicating that the site and subsoil conditions comply with the applicable law and rules.

*****Local Law 65-1996.***

***§[C26-110.3] 27-158 Datum. -** All elevations on plans shall be referred to the United States coast and geodetic survey mean sea level datum of nineteen hundred twenty-nine (national geodetic vertical datum, NGVD), as provided in section 26-208 of chapter one of title twenty-six of the administrative code, as amended. The following table shall be used to convert NGVD to borough datum elevations:

Location:	Add to NGVD to obtain borough datum
Bronx	+2.608
Brooklyn	+2.547
Manhattan	+2.752
Queens	+2.725
Staten Island	+3.192

****Local Law 33-1988.***

§[C26-110.4] 27-159 Additional information.- In addition to the data and information specified under subdivisions (a) through (c) of section 27-157 of this article, the commissioner may require the submission of computations, test reports, and such other data and information as may be necessary to determine compliance with code provisions and other applicable laws and regulations.

****§[C26-110.5] 27-160 Certification of performance bond, license and insurance required.-**

***(a) An applicant for a permit who, pursuant to section 24-526 of the administrative code, is required to construct or repair defects in catch basins or sewers which lie outside of the property shall submit to the department certification from the department of environmental protection that the applicant or owner has provided such department with:

(1) a performance bond or other security satisfactory to such department and approved as to form by the law department of the city for the full cost, as estimated by such department, of constructing the part of the storm water drainage system for such property which shall lie outside of such property and repairing defects in such construction, if and as required by section 24-526 of the administrative code;

(2) any license or other written instrument which such department or the law department of the city may reasonably request which gives such department, its agents and contractors and the surety for a performance bond described in paragraph one of this subdivision the legal right to enter private property to perform work described in paragraph one of this subdivision, pursuant to the terms of the performance bond or in accordance with the conditions of acceptance of other security described in paragraph one of this subdivision, and the legal right to connect to, to extend or to discharge storm water into any private sewer authorized as a point of disposal pursuant to section 24-526 of the administrative code, in the event that the owner of property fails to do so, if and as required pursuant to section 24-526 of the administrative code; and

(3) insurance of a kind and in an amount which such department and the law department of the city deem satisfactory to insure the city fully for all risks of loss, damage to property or injury to or death of persons to whomever occurring, arising out of or in connection with the performance of all work described in this section.

(b) The provisions of this section shall not be construed to abrogate or contravene any contractual obligation of the city to construct storm water drainage systems or parts thereof. The requirements of subdivision (a) of this section shall be inapplicable to an applicant for a new building permit insofar as they relate to any construction work required to be performed by the city pursuant to such a contractual obligation.

***Note for Excerpts from Local Law 7-1974, see end of Subchapter 1.*

****Local Law 65-1996; Local Law 103-1989.*

ARTICLE 12 APPLICATIONS FOR BUILDING ALTERATION PERMITS

§[C26-111.1] 27-161 General requirements.- All applications for permits to alter existing buildings shall be subject to the requirements of articles nine and ten of this subchapter and section 27-156 of article eleven of this subchapter.

*****§[C26-111.2] 27-162 Plans required.-** All such applications shall be accompanied by such architectural, structural, and mechanical plans as may be necessary to indicate the nature and extent of the proposed alteration work and its compliance with the provisions of this code and other applicable laws and regulations. To the extent necessary, all such applications and plans shall be subject to and shall comply with the requirements of sections 27-157, 27-158, and 27-159 of article eleven of this subchapter. Whenever the proposed alteration work consists of the construction of a substantial horizontal enlargement as defined in subdivision (a) of section P110.2 of reference standard RS-16, the applicant shall submit information as to the availability of a public sewer system pursuant to paragraph three of subdivision (c) of section 27-157 of this code as well as an evaluation of the adequacy of any existing system for the disposal of storm water by any means other than storm or combined sewers, prepared pursuant to paragraph four of subdivision (c) of section 27-157 of this code. The plans may be submitted with the application for the permit or prior thereto, as provided in section 27-138 of article nine of this subchapter.

****** Local Law 103-1989.*

ARTICLE 13 APPLICATIONS FOR FOUNDATION AND EARTHWORK PERMITS

§[C26-112.1] 27-163 General requirements.- All applications for foundation and earthwork permits shall be subject to the requirements of articles nine and ten and section 27-156 of article eleven of this subchapter. When the permit sought is solely for earthwork excavation operations, the applicant shall also submit satisfactory evidence that the property is free from any lien for unpaid city taxes, assessments, water rates, bail bonds, or judgments obtained by the city, together with the consent in writing of the mortgagee, if there is any mortgage upon the property, and the consent in writing of the surrogate's court or the supreme court, if the owner of the property is a minor or incompetent.

§[C26-112.2] 27-164 Plans required.- All such applications shall be accompanied by a lot diagram, as provided in paragraph one of subdivision (a) of section 27-157 of article eleven of this subchapter, and foundation plans, as provided in subdivision (b)

of section 27-157 of article eleven of this subchapter, except that when the permit sought is solely for earthwork excavation or fill operations, the applicant shall submit, in lieu of foundation plans, plans showing the exact location, extent, and depth or height of the proposed excavation or fill operation.

§[C26-112.3] 27-165 Notice to adjoining owners.- No foundation or earthwork permit shall be issued unless and until at least five days prior written notice of the permit application shall have been given by the applicant to the owners of all adjoining lots, buildings and service facilities which may be affected by the proposed foundation work or earthwork operations.

§[C26-112.4] 27-166 Protection of adjoining properties.- All foundation and earthwork operations shall be performed in accordance with the requirements of subchapters eleven and nineteen of this code; and all lots, buildings and service facilities adjoining the foundation and earthwork areas shall be protected and supported in accordance with the requirements of subchapters eleven and nineteen of this code and subchapter seventeen of chapter one of title twenty-six of the administrative code.

ARTICLE 14 APPLICATIONS FOR DEMOLITION AND REMOVAL PERMITS

§[C26-113.1] 27-167 General requirements.- All applications for demolition or removal permits shall be subject to the requirements of article ten, section 27-156 of article eleven, section 27-198 and section 27-198.1 of article nineteen of this subchapter.

§[C26-113.2] 27-168 Requirement of certifications.-

(a) Prior to the issuance of the permit, all gas, electric, water, steam, and other service lines to the building shall be disconnected and certifications to that effect by the respective utility companies or city agencies having jurisdiction shall be filed with the department; and the applicant shall also file with the department a certification by a licensed exterminator that the building has been treated effectively for rat extermination.

(b) In addition to all other requirements of this article, an application for a permit for the demolition or removal of an existing multiple dwelling shall be accompanied by a signed statement of the applicant certifying either (1) that the dwelling contains no occupied housing accommodations subject to control under chapter three of title twenty-six of the administrative code, or (2) that the owner has notified the city rent agency of his or her intention to apply for such permit and has complied with all requirements imposed by the regulations of such agency as preconditions of such application.

§[C26-113.3] 27-169 Notice to adjoining owners.- No demolition or removal permit shall be issued unless and until at least five days prior written notice of the permit application shall have been given by the applicant to the owners of all adjoining lots, buildings and service facilities which may be affected by the proposed demolition or removal work.

§[C26-113.4] 27-170 Protection of lot and adjoining properties.- All demolition and removal operations shall be performed in accordance with the requirements of subchapter nineteen of this chapter; and after the building has been demolished or removed, the premises shall be maintained free from all unsafe or hazardous conditions by the proper protection of the lot, restoration of grades, and the erection of necessary retaining walls and fences in accordance with the provisions of article three of subchapter eighteen of this chapter.

§[C26-113.5] 27-171 Requirement of photographs.-

(a) Except as otherwise provided herein, all applications for permits for the demolition or removal of existing buildings shall be accompanied by two sets of photographs of the building or buildings to be demolished or removed. Both sets of photographs shall be received by the department on behalf of the landmarks preservation commission and the municipal archives division of the department of records and information services.

(b) The commissioner, upon the advice of the commissioner of the department of records and information services and the chairperson of the landmarks preservation commission, shall promulgate such rules and shall prescribe such specifications as may be necessary to carry out the provisions of this section.

(c) Where photographs are otherwise required to be submitted to the landmarks preservation commission, applications for demolition or removal permits submitted on behalf of the department of housing preservation and development, shall be exempt from the requirements of this section.

(d) Permits authorized pursuant to section 26-243 of the administrative code, shall be exempt from the requirements of this section.

ARTICLE 15 APPLICATIONS FOR PLUMBING PERMITS

§[C26-114.1] 27-172 General requirements.- All applications for plumbing permits shall be subject to the requirements of articles nine and ten of this subchapter. In addition, each such application shall set forth the name and business address of the licensed master plumber who is to perform or supervise the proposed work, and shall be

accompanied by satisfactory evidence of compliance with the provisions of the workers' compensation law.

§[C26-114.2] 27-173 Plans required.- Except as provided in section 27-174 of this article, all applications for plumbing permits shall be accompanied by plans which shall be complete and of sufficient clarity to indicate the nature and extent of the plumbing work to be performed and its compliance with provisions of this code and other applicable laws and regulations. The plans may be submitted with the application for the permit or prior thereto, as provided in article nine of this subchapter. All plans for plumbing work shall comply with the applicable provisions of section 27-157 of article eleven of this subchapter. In addition, the plans shall contain at least the following data and information:

(a) Single line or diagrammatic plans showing the location, layout, and spacing of all plumbing fixtures, the summation of plumbing loads, the size, location, and material for all building sewers and drains, and the soil, waste, vent, water, and gas distribution piping.

(b) One floor plan for floors with typical layouts; and stack details shown on one drawing, provided that such details are clearly identified as to location and stack number.

(c) A riser diagram showing:

(1) Story heights.

(2) All plumbing fixtures with diagrammatic arrangement of their connections to soil, waste, and vent piping.

(3) All soil, waste, and vent stacks from the point of connection with the building drain to their termination above the roof.

(4) All leader and storm water piping from the point of connection with the building drain to the roof drain.

(5) All water and gas risers.

(d) In the case of plans for new plumbing systems, the relative elevation of the lowest fixture referred to the datum provided in section 27-158 of article eleven of this subchapter and the approximate inside top of the public sewers, and the number, size, and location of all proposed sewer connections and relative location and size of all water mains, leaders, and risers; and the plans shall be accompanied by a statement from the department of environmental protection, giving the minimum water pressure in the main serving the building. When required by the commissioner, such data shall also be included on plans for the alteration of existing plumbing systems.

(e) All appurtenant equipment, including, but not limited to, pumps, ejectors, water tanks, and piping shall be indicated clearly on the plans.

§[C26-114.3] 27-174 Exemptions from plan requirements.- The submission of plans shall not be required for any of the following:

(a) Plumbing or gas piping alterations requiring a repair slip as provided in section 27-175 of this article.

(b) Plumbing for temporary installations used for exhibition purposes when not designed for sanitary use and not directly connected to a sewerage, water supply, or water distribution system.

(c) Plumbing for temporary installations used in connection with construction operations, other than plumbing for temporary gas installations for which the submission of plans shall be required.

***§[C26-114.4] 27-175 Alteration and repair slip**. –

(a) An application for a plumbing permit may be treated as an application for an alteration and repair slip where the total cost of the proposed work in the building, as certified by the permit applicant, does not exceed eighteen thousand dollars in any twelve-month period and the proposed work consists of any of the following:

(1) The installation of new plumbing or gas piping, or the rerouting of existing plumbing or gas piping.

(2) The addition of not more than two plumbing fixtures or fixture connections.

(3) The mounting of new plumbing fixtures on existing roughings, other than the mere replacement of existing fixtures constituting a minor alteration or ordinary repair under article five of this subchapter.

(4) The installation or replacement of backflow prevention devices.

(b) Upon the approval of the application, an alteration and repair slip shall be issued in lieu of a plumbing permit, with same force and effect as if a plumbing permit had been issued.

Local Law 51-2001,Local Law 6-1997.

§[C26-114.5] 27-176 Exemptions from permit requirement.- Plumbing permits shall not be required for the installation or alteration of gas service piping or gas meter piping including meters, valves, regulators, and related equipment, when such work is to be performed and serviced and maintained by utility corporations subject to the jurisdiction of the public service commission; nor shall plumbing permits be required for the emergency repair of gas distribution piping when such work is performed by licensed master plumbers or by utility corporations subject to the jurisdiction of the public service commission, in order to alleviate hazardous conditions, provided that a written report describing the details of such repairs shall be filed with the commissioner upon completion of the work.

ARTICLE 16 APPLICATIONS FOR SIGN PERMITS

****§[C26-115.1] 27-177 General requirements**.- All applications for permits to erect or alter signs or sign installations shall be subject to the requirements of

articles nine and ten of this subchapter. In addition, each such application shall set forth the name and business address of the licensed sign hanger who is to perform or supervise the proposed work and**,** if the sign or sign location is under the control of an outdoor advertising company, as defined in section 26-259 of this code, the name and, where provided by rule, the registration number of such outdoor advertising company. The application shall be accompanied by satisfactory evidence of compliance with the provisions of the workers' compensation law. Each permit shall have an identification number and shall authorize the erection, alteration or installation of the type of display described in the application. The identification number of the permit and, if the sign is under the control of an outdoor advertising company, the name and, where provided by rule, the registration number of such outdoor advertising company shall be displayed on the sign or on the building or premises on which the sign is located or both in a manner to be provided by rule. If a sign is otherwise in compliance with the administrative code, the zoning resolution and rules adopted pursuant to such provisions, the changing of copy on an existing permitted sign, specifically designed for the use of replaceable copy, and the painting, repainting, cleaning or other normal maintenance and repair of an existing permitted sign, not involving structural changes, shall not require a new permit pursuant to this article and sections 27-147 and 27-148 of the code. The changing of copy on a permitted sign not designed for the use of replaceable copy or any structural change of the sign or sign structure shall require a new permit pursuant to this article and sections 27-147 and 27-148 of the code. No permit for the erection, alteration or installation of a sign or sign structure issued pursuant to this article and sections 27-147 and 27-148 of the code shall be deemed to constitute permission or authorization to maintain a sign which would otherwise be illegal without a maintenance permit for an outdoor sign as required pursuant to section 26-253 of the code or which is otherwise illegal pursuant to any other provision of law nor shall any permit issued hereunder constitute a defense in an action or proceeding with respect to such an unlawful sign.
*****Local Law 14-2001.***

Footnote: The following §§ 5,6,7,8 are unconsolidated provisions of Local Law 14 of 2001.
§5. The initial application for registration of an outdoor advertising company pursuant to section 26-260 of the administrative code, as added by section 3 of this local law, shall include a report to the department of buildings identifying:

(a) all signs and supporting structures therefor and

(b) all sign locations that are under the control of such outdoor advertising company and located in:

(i) zoning districts in which signs for advertising purposes are not permitted;

(ii) areas within a distance of two hundred linear feet from and within view of an arterial highway, as such term is defined under subdivision c of section 26-253 of the administrative code, as added by section 3 of this local law; and

(iii) areas within a distance of two hundred linear feet from and within view of a public park with an area of one half acre or more.

Notwithstanding any provision to the contrary of section 26-260 of the administrative code, as added by section 3 of this local law, the commissioner of buildings shall refuse to accept and may return the initial application for registration of an outdoor advertising company:

(i) where such business fails to submit the report required by this section; or

(ii) the commissioner has reasonable cause to believe that such report contains an incomplete or inaccurate listing of signs or sign locations which are required to be included therein.

In the event a company whose initial application for registration has been rejected by the commissioner of buildings pursuant to this subdivision fails thereafter to submit a report acceptable to the commissioner within a time frame specified by the department of buildings, and the commissioner, after notice and opportunity to be heard, affirms his or her determination that such company has not satisfied the requirements of this section, then such outdoor advertising company shall be deemed in violation of subdivision a of section 26-260 of the administrative code, as added by section 3 of this local law, and shall be subject to all provisions of section 26-262 of the administrative code, as added by section 3 of this local law, which apply to an outdoor advertising company which has not registered with the department of buildings. The department shall revoke the registration of an outdoor advertising company if it is subsequently determined by the commissioner, after notice and opportunity to be heard, that such company has filed an incomplete or inaccurate listing of signs which are required to be included in the report provided for under this section, and such company knew or should have known that the listing was incomplete or inaccurate. Notwithstanding the provisions of section six hundred sixty six of the charter, such determinations by the commissioner shall not be subject to review by the board of standards and appeals. The commissioner shall make all reports filed pursuant to this section accessible to the public.
§6.

(a) In addition to the report described in section 5 of this local law, an outdoor advertising company may elect to include in its initial application for registration pursuant to section 26-260 of the administrative code, as added by section 3 of this local law, a compliance plan, prepared in such form

and according to such standards as shall be specified by rules of the department of buildings with regard to such plans and amendments thereto, which plan shall include a schedule for the permanent removal of all signs and any supporting structures therefor which were installed, erected, attached, affixed, painted on, or in any other manner represented on a building or premises prior to December 22, 2000 which are identified in the report submitted pursuant to section 5 of this local law. Such removal shall take place within three annual periods following the commissioner's acceptance of the compliance plan, based on his or her determination that such plan satisfies all requirements of this section. The removal schedule included with such compliance plan shall provide for the removal of equal numbers of signs and any supporting structures therefor during the course of each of such three annual periods, at regular intervals within such annual periods as specified by rule of the department. Such compliance plan shall not include signs which have legal non-conforming use status pursuant to the zoning resolution, provided the outdoor advertising company provides evidence of such status in a form satisfactory to the commissioner. Notwithstanding any provisions to the contrary of subdivision a of section 26-261 of the administrative code, as added by section 3 of this local law, an outdoor advertising company shall not be required to submit a certification pursuant to such subdivision with respect to signs included in the compliance plan provided that the sign is in compliance with the schedule for its removal pursuant to such plan.

(b) For each sign and any supporting structure therefor included in a compliance plan, the outdoor advertising company shall submit to the department of buildings as part of such compliance plan an instrument, in a form satisfactory to the commissioner of buildings, executed by all persons parties or entities to whom notice is required to be given pursuant to subdivision b of section 26-127.3 of the administrative code, as added by section 2 of this local law, and binding upon all successors and assigns, consenting to:

(i) removal of such sign and any supporting structure therefor in accordance with the schedule for removal set forth in the compliance plan; and

(ii) entry by the commissioner, police officers, and authorized representatives of the department upon the building or premises on which the sign and any supporting structure therefor is located for purposes of removal of such sign and any supporting structure therefor by the city, without further proceedings, in the event that such sign and any supporting structure is not removed in accordance with the schedule included in such compliance plan. Such instrument shall be filed and recorded with the clerk or register of the county in which the sign is located.

(c) As part of a compliance plan, the outdoor advertising company shall also post a bond to the city, with a surety approved by the department, in an amount to be determined by the department by rule based on the number, size and other features of signs and any supporting structures therefor identified in the compliance plan. The bond shall be conditioned such that the obligor will pay all costs incurred by the city with respect to the removal of such signs and any supporting structures therefor in accordance with the consents set forth in instruments filed with respect to such signs pursuant to paragraph b of this section. Nothing herein shall be construed to affect the obligation of an outdoor advertising company to post a bond pursuant to subdivision c of section 26-260 of the administrative code, as added by section 3 of this local law, with respect to signs not eligible for inclusion in the compliance plan.

(d) The commissioner shall refuse to accept and may return a compliance plan submitted pursuant to this section where he or she determines that it does not satisfy the requirements of this section and rules promulgated pursuant thereto. In the event a company whose initial compliance plan has been rejected by the commissioner of buildings pursuant to this subdivision fails thereafter to submit a compliance plan acceptable to the commissioner within a time frame specified by the department of buildings, and the commissioner, after notice and opportunity to be heard, affirms his or her determination that such company has not satisfied the requirements of this section, then such outdoor advertising company shall be deemed subject to section 7 of this local law. Notwithstanding the provisions of section six hundred sixty-six of the charter, such determination shall not be subject to review by the board of standards and appeals.

(e) Notwithstanding any provisions to the contrary of section 26-262 of the administrative code, as added by section 3 of this local law, where a sign and any sign structure therefor is included in a compliance plan accepted by the commissioner, no civil penalties or criminal fines and/or imprisonment may be imposed with respect to such sign upon an outdoor advertising company or other party for any violations of the zoning resolution, the administrative code or rules adopted pursuant thereto (except for violations which involve the creation or maintenance of a hazardous condition), nor shall the commissioner of buildings seek the removal of such sign pursuant to section 26-127.3 of the administrative code, as added by section 2 of this local law; provided, however, that:

(i) the outdoor advertising company is in compliance with the schedule for removal of such sign and any supporting structure therefor set forth in the compliance plan; and

(ii) the size, height or degree of projection of such sign and any supporting structure therefor has not been increased or enlarged after December 22,

2000. Upon acceptance of a compliance plan pursuant to this section, the commissioner of buildings shall discontinue any administrative, judicial or other enforcement proceedings pending as of such date with respect to such sign (other than collection activities with respect to previously adjudicated violations), unless the commissioner has reasonable cause to believe that the size, height or degree of projection of such sign and any supporting structure therefor has been increased or enlarged after December 22, 2000. Nothing herein shall be construed to prevent the imposition of civil penalties or criminal fines and/or imprisonment upon an outdoor advertising company or other party for violations of the zoning resolution, the administrative code or rules adopted pursuant thereto, with respect to signs which are not eligible for inclusion in a compliance plan submitted pursuant to this section.

(f) The provisions of section 26-253 of the administrative code, as added by section 3 of this local law, shall not apply to a sign under the control of an outdoor advertising company which is included in a compliance plan accepted by the commissioner, provided that the outdoor advertising company is in compliance with the schedule for removal of such sign and any supporting structure set forth in the compliance plan.

(g) The sale, lease, or other transfer of control of a sign, and any supporting structure therefor identified in a compliance plan shall not affect the schedule for the removal of such sign and any supporting structure in accordance with the schedule included in the compliance plan, and any outdoor advertising company which assumes control of such sign and any sign structure shall be responsible for compliance with the terms of the compliance plan with respect thereto. In the event an outdoor advertising company which has submitted a compliance plan pursuant to this section assumes control of a sign and any supporting structure therefor required to be included in the report provided for under section 5 of this local law but not previously included in a compliance plan, such company shall amend its compliance plan to include such sign and supporting structure in the plan, in accordance with rules of the department.

(h) In the event a sign and any supporting structure therefore [*sic*] is not removed in accordance with the schedule included within a compliance plan, or in the event the registration of the outdoor advertising company which submitted such compliance plan is revoked pursuant to subdivision i of this section, the commissioner shall, in addition to or in lieu of seeking any and all remedies provided for under this local law, be authorized to remove such sign and any supporting structure therefor in accordance with the consents set forth in the instrument filed with respect to such sign pursuant to paragraph (b) of this section.

(i) Notwithstanding any provisions to the contrary of subdivision d of section 26-260 of the administrative code, as added by section 3 of of this local law, in the event that an outdoor advertising company has failed to remove all signs and any supporting structures therefor in accordance with the compliance plan by the end of any of the three annual periods following the commissioner's acceptance of the compliance plan, registration of such company shall be subject to revocation.

(j) The commissioner shall make all compliance plans filed pursuant to this section accessible to the public.

§7. An outdoor advertising company which does not submit a compliance plan pursuant to section 6 of this local law shall be subject to all criminal, civil and other remedies provided for in this local law for any violation of the zoning resolution or the administrative code or rules adopted pursuant thereto with respect to signs under its control, without limitation. Notwithstanding any provision to the contrary of subdivision d of section 26-260 of the administrative code, as added by this local law, relating to the circumstances under which the commissioner is authorized to revoke the registration of an outdoor advertising company, the commissioner of buildings shall, after notice and opportunity to be heard, revoke the registration of any such outdoor advertising company where such company has been found liable on three or more occasions by the environmental control board or a court of competent jurisdiction for violations of the zoning resolution or the administrative code or rules adopted pursuant thereto with respect to signs under its control identified in the report submitted by such outdoor advertising company pursuant to sections 5 of this local law, on the basis that such signs are advertising signs, as defined in section 12-10 of the zoning resolution, which are located in:

(i) zoning districts in which signs for advertising purposes are not permitted;

(ii) areas within a distance of two hundred linear feet and within view of an arterial highway, as such term is defined under subdivision c of section 26-253 of the administrative code, as added by section 3 of this local law; or

(iii) areas within a distance of two hundred linear feet from and within view of a public park with an area of one half acre or more.

§8. All terms as used in sections 5, 6 and 7 of this local law shall be as defined in subchapter four of chapter one of title twenty-six of the administrative code, as added by this local law. The commissioner of buildings shall promulgate rules as necessary for the administration and implementation of sections 5, 6 and 7 of this local law.

[***]**§[C26-115.2] 27-178 Plans required.-** All such applications shall be accompanied by plans which

shall contain at least the following data and information:

(a) A sketch or drawing showing the size and location of the sign or sign installations in relation to the building or premises upon which the sign is or will be erected.

(b) Detail drawings showing the dimensions, materials, and construction of the sign, its supporting members, and the foundation or anchorage thereof.

(c) A tabulation or diagram of all loads and stresses.

(d) Plans for illuminated signs projecting beyond the street line shall be accompanied by a statement from the department of buildings indicating that such department has received an application from a licensed electrician for inspection of such signs.

******Local Law 59-1996.***

§[C26-115.3] 27-179 Exemptions from permit requirements.- Sign permits shall not be required where the sign is:

(a) Painted directly on the exterior wall surface of a building or on the surface of a fence.

(b) A wall sign of not more than six square feet in area.

(c) A sign erected by employees of a city or other governmental agency, including traffic and other similar signs.

(d) A ground sign advertising the sale or rental of the premises on which it is erected, provided the sign does not exceed twelve square feet in area.

(e) A temporary sign erected during construction work and related thereto.

(f) A temporary sign for special decorative display use for holidays, public demonstrations, or the promotion of civic, welfare or charitable purposes, except that signs that utilize streets or cross streets shall be subject to the requirements of the department of highways.

ARTICLE 17 APPLICATIONS FOR EQUIPMENT WORK PERMITS

****§[C26-116.1] 27-180 When equipment work permits required.-** Except as provided in section 27-184 of this article, equipment work permits shall be required for the installation or alteration of the following types of service equipment:

(a) Air conditioning and ventilating systems.

(b) Elevators, escalators, moving walks, and stairways, dumbwaiters, etc.

(c) Fuel burning and fuel oil storage equipment.

(d) Refrigerating systems.

(e) Heating systems.

(f) Boilers.

(g) Fire suppression piping systems.

*****Local Law 107-1993.***

§[C26-116.2] 27-181 Application requirements.- All such applications shall be subject to the applicable requirements of article ten and section 27-156 of this subchapter, and to the applicable requirements of article nine, subdivision (c) of section 27-157 and sections 27-158 and 27-159 of this subchapter whenever plans are required to be submitted in connection with such applications.

***§[C26-116.3] 27-182 Plans required.-** Except as provided in section 27-183 and section 27-184.1 applications for equipment work permits shall be accompanied by plans in the following cases and in accordance with the following requirements:

**** Local Law 6-1997.***

(a) Air conditioning and ventilating systems.- Plans for air conditioning and ventilating systems shall contain at least the following data and information:

(1) The location and sizes of all ducts; the location of all fire dampers, motors, fans, and filters; the type, air capacity, and size of all equipment; and where the plans are not accompanied by structural plans, the operating weight and manner of support of all equipment weighing in excess of one thousand pounds.

(2) The locations of smoke detecting devices.

(3) The location and size of the fresh air intake, the design population, and the index for ventilation for each room or space.

(4) The amount of air to be exhausted or supplied from each outlet for each room or space.

In the case of ventilating or exhaust systems for ranges, fryers, ovens, and other similar types of restaurant or bakery equipment, for which a hood is required, the plans shall also show the type of extinguishing system, the location of heat detection devices, nozzles, piping, gas controls, manual and automatic control valves, method of joining ducts, method and location of discharging exhaust from building, the location of break-glass controls, and the quantity in cfm designed for each hood.

(b) Elevators, etc.- Plans for elevators, escalators, moving walks and stairways, dumbwaiters, and similar equipment shall contain at least the following data and information.

(1) The location of all machinery, switchboards, junction boxes, and reaction points, with loads indicated.

(2) The details of all hoistway conditions including bracket spacing.

(3) The estimated maximum vertical forces on the guide rails on application of the safety device.

(4) In the case of freight elevators for class B or C loading, the horizontal forces on the guide-rail faces during loading and unloading; and the estimated maximum horizontal forces in a post wise direction on the guide-rail faces on application of the safety device.

(5) The size and weight per foot of any rail reinforcements where provided.

(c) Fuel-burning and fuel-oil storage equipment.-Plans for fuel-burning equipment and fuel-oil storage equipment shall contain at least the following data and information:

(1) The kind or grade of fuel to be used.

(2) The location, arrangement, size, load, and maximum capacity of the burning, storage and fuel-pumping equipment.

(3) The method or means of providing air to the equipment space, showing duct and opening sizes.

(4) The location, size, and materials for all breechings; the height and size of all chimneys and gas vents; the thickness and type of all insulation materials; and the clearances from combustible walls, partitions, and ceilings.

(5) Diagrams of all piping, including vent and fill piping for oil systems, and all safety cut-off and relief devices and valves in piping.

(6) Where the alteration or replacement of parts for a fuel-oil burning installation does not affect the size of the combustion chamber, the atomization of the fuel, the grade of fuel used, or the maximum capacity of the system, a descriptive statement of the proposed work may be submitted in lieu of plans.

(d) Refrigerating systems.- Plans for refrigerating systems shall contain at least the following data and information:

(1) The location of all machinery; the horsepower of compressors; the type and number of pounds of refrigerant to be used; and the air quantities for, and means of, ventilating the machinery space.

(2) The location of emergency switches for compressors and for ventilation in the machinery rooms.

(3) The location of pressure relief piping and any city water connections and water-saving devices.

(4) The tonnage capacity of the machine and the suction and discharge pressures at which the machine is rated.

(5) The operating weight of the equipment.

(e) Heating systems.- Plans for heating systems shall contain at least the following data and information:

(1) The temperature to be maintained in every room.

(2) The amount of heat in btu per hour to be provided in every room, and the output capacity in btu per hour of the central heat sources.

(f) Boilers.- Plans for boiler installations and boiler alterations shall contain at least the following data and information:

(1) The btu per hour output capacity and operating weight of each boiler; and the pressure setting of the relief valves.

(2) Such other data and information as are required to be contained on plans for fuel-burning equipment, as hereinabove provided.

****(g) Fire suppression piping systems. -** All applications shall include a plot plan to scale indicating the location of the system in relation to the rest of the building.

(1) Standpipe systems. Plans for standpipe systems shall contain at least the following data and information:

(a) The location and size of all risers, cross-connections, hose racks, valves, siamese connections, sources of water supply, piping, and other essential features of the system.

(b) A floor plan for floors that have typical riser locations and no special features within the floor level, with the title of this plan indicating clearly the floors to which the arrangement is applicable.

(c) A riser diagram showing the essential features of the system and indicating the risers, cross-connections, valves, siamese connections, tanks, pumps, sources of water supply, pipe sizes, capacities, floor heights, zone pressures, and other essential data and features of the system.

(d) The available water pressure at the top and bottom floors of each zone, and at each floor where the weight pipe fittings change, shall be shown on the riser diagram. For street pressure-fed systems and fire pumps, a statement from the department of environmental protection, giving the minimum water pressure in the main serving the building, shall be supplied.

****(2) Sprinkler systems.** Plans for sprinkler systems, whether automatic or non-automatic, shall contain at least the following data and information:

(e) The location and size of water supplies and the location, spacing, number, and type of sprinklers to be used, with approximate location and size of all feed mains, risers, valves, siamese connections, and other essential features of the system.

(f) A diagram showing the proposed sprinkler system in relation to principal construction features of the building, such as its size, walls, columns, and partitions; and such other information as may be necessary for the evaluation of the system.

(g) The location, number, and type of any electrical or automatic devices to be used in the system.

(h) The available water pressure at the top and bottom floors of each zone shall be shown on the riser diagram. For street pressure-fed systems and fire pumps, a statement from the department of environmental protection, giving the minimum water pressure in the main serving the building, shall be supplied.

****(3) Other fire suppression piping systems.** Plans for chemical or gaseous fire suppression piping systems shall contain at least the following data and information.

(a) Type, model number and location of all surface, plenum and duct nozzles; the type, location and surface dimensions of all cooking appliances; the location and type of the automatic fuel shut-off and

statement as to type (gas or electric); location and distance of the remote control or manual pull station.

(a) A statement that board of standards and appeals or department approved grease filters are to be used in any kitchen hood; the dimensions of all hoods and all related ducts.

(b) The brand name, model and board of standards and appeals or department approval number of the fire suppression piping system; the type of extinguishing agent and number and size of agent containers; size, length, and type of all piping that will be used; number and location of all fusible links or detectors and the temperature setting; type, model number and location of all surface, plenum and duct nozzles.

(c) For halon systems, the plan should also include type and concentration of the halon, the method of providing power supply to smoke or heat detectors; if reserve supply is being provided, fire rating of partitions and if the area involved is sprinklered, location of all audible/visible alarms within and outside the location involved and the details of construction of the room to contain the halon.

*****Local Law 107-1993.***

§[C26-116.4] 27-183 Exemptions from plan requirements.- The submission of plans shall not be required in connection with applications for permits to install or alter fuel-burning and fuel-oil storage equipment under any of the following conditions. However, the commissioner may require the filing of sketches showing compliance with the provisions of this code.

(a) The equipment is to be used for heating a one- or two-family dwelling.

(b) The equipment is fed by gas fuel and is not used with an incinerator.

(c) The capacity of the equipment does not exceed three hundred fifty thousand btu per hour and the capacity of each of the oil storage tanks for the equipment does not exceed two hundred seventy-five gallons, unless the tanks are buried, or are in a multiple dwelling, or in a building adjacent to the line of a subway, or are located above the lowest story of a building, or unless the fuel-burning equipment is located above the lowest story of a building.

§[C26-116.5] 27-184 Exemptions from permit requirement.- An equipment work permit shall not be required in any of the following cases:

(a) Air-conditioning and ventilating systems.- Where the system is a voluntary system serving only one floor of a building and:

(1) Does not use lot line windows for the intake or exhaust of air or the mounting of equipment.

(2) Is not installed in any public hallway, passageway, or stairway.

(3) Does not in any way reduce the ventilation of any room or space below that required by code provisions.

(4) Does not penetrate any fire division, roof, floor, or wall (except that a packaged air-conditioning unit not exceeding 3 tons rated capacity may be used in windows or in sleeves under windows, provided that health, fire and/or structural safety is not thereby impaired).

(b) Elevators, etc.- Where the equipment consists of a portable elevating device used only for handling materials and located and operated entirely within one story.

(c) Fuel-burning and fuel-oil storage equipment.- Where the equipment consists of any of the following:

(1) Portable fuel-burning equipment that does not require a chimney or vent connection.

(2) Portable heaters used in construction work.

(3) Oil-fired heaters having a fuel-storage capacity of 6 gallons or less (except that internal combustion engines of any size shall require a permit).

(d) Refrigerating systems.- Where the system:

***(1) Has a capacity of twenty-five tons or less and uses a Group A1 refrigerant.

(2) Is to be installed in a vehicle, railroad car, or vessel.

(3) Uses water or air as the refrigerant.

(e) Hot water boilers and steam boilers operating at a gauge pressure of not more than fifteen pounds per square inch located in dwellings occupied by less than six families.

******Local Law 32-2004.***

***§ 27-184.1 Alteration and repair slip. -**

(a) An application for an equipment work permit for work on an existing combined standpipe or sprinkler system may be treated as an application for an alteration and repair slip where the total cost of the proposed work within the building, as certified by the permit applicant, does not exceed ten thousand dollars in any twelve month period and the proposed work consists of any of the following:

(1) Replacement of parts required for the operation of a combined standpipe or sprinkler system. In the event of emergency an application for an alteration and repair slip must be filed within twenty-four hours after the commencement of the repairs.

(2) Replacement of sprinkler heads. Provided that orifice sizes, type and deflector position remain the same.

(3) Changes that do not alter the type of sprinkler system.

(4) Relocation of piping that does not effect the operation of the sprinkler system.

(5) Rearrangement of not more than twenty sprinkler heads in areas presently sprinklered in light hazard occupancy which will remain light hazard

occupancy, provided that the addition of sprinkler heads in existing systems shall be limited to light hazard occupancy in rooms or spaces not exceeding eight hundred square feet requiring only one head with the maximum spacing allowed by the code, and provided that the number of new heads does not exceed a total of five.

(6) Relocation of combined fire standpipe auxiliary hose sources and cabinets within ten feet of their original location, provided that the existing covered area is not affected and provided that such relocation complies with subchapter seventeen and reference standard RS 17-1.

(b) Notwithstanding any inconsistent provision of this section, an application for an equipment work permit for work on an existing combined standpipe or sprinkler system may not be treated as an application for an alteration and repair slip for any alteration of primary or auxiliary water supplies.

(c) Upon the approval of the application an alteration and repair slip shall be issued in lieu of an equipment work permit, with the same force and effect as if an equipment work permit had been issued.

(d) The submission of plans shall not be required for an alteration and repair slip.

Local Law 6-1997.

ARTICLE 18 APPLICATIONS FOR EQUIPMENT USE PERMITS

§[C26-117.1] 27-185 When equipment use permits required.- Equipment use permits shall be required for the use and operation of the following types of service equipment:

(a) Air-conditioning and ventilating systems.

(b) Elevators, escalators, moving walks and stairways, dumbwaiters, etc.

(c) Fuel-burning and fuel-oil storage equipment.

(d) Refrigeration systems.

(e) Heating systems.

(f) Boilers.

§[C26-117.2] 27-186 Application requirements.- All applications for equipment use permits shall be subject to the requirements of article ten of this subchapter**.**

§[C26-117.3] 27-187 Inspections and tests.- No equipment use permit shall be issued unless and until the equipment shall have been inspected and tested to determine proper functioning and compliance with the provisions of this code and other applicable laws and regulations. All inspections and tests shall be conducted in accordance with required inspection and test procedures; and signed copies of all required inspection and test reports shall be filed with the department and form part of the papers accompanying the permit application. In the case of heating systems, a signed statement by an architect or engineer shall be submitted with the permit application, stating that the system has been operated and functions satisfactorily and that, to the best of his or her knowledge and belief, the system will meet code temperature requirements.

§[C26-117.4] 27-188 Temporary use permit.- The commissioner may, upon request, issue a temporary use permit authorizing partial use and operation of the equipment prior to completion of the installation or alteration work, provided that such partial use and operation may be made safely and without endangering public health, safety and welfare, and further provided that such temporary use permit shall not be issued for a period of more than thirty calendar days, subject to renewal for additional thirty-day periods at the discretion of the commissioner. All temporary use permits shall be required to be posted in a conspicuous location in or near the equipment covered by the permit, and shall state the nature and extent of the partial use and operation permitted and indicate clearly that full use and operation of the equipment is not permitted.

§[C26-117.5] 27-189 Exemptions from equipment use permit requirement.- No equipment use permit shall be required for equipment exempted from the requirement of an equipment work permit under section 27-184 of article seventeen of this subchapter; nor shall an equipment use permit be required for the use and operation of equipment specifically exempted under the provisions of subchapters thirteen and fourteen of this chapter.

§[C26-117.6] 27-190 Duration and renewal of permit.- Equipment use permits shall be of indefinite duration, subject to the provisions of section 27-196 of article nineteen of this subchapter, except that permits for the use and operation of elevators and similar equipment and boilers shall be limited to a term of one year from the date of issuance of the permit, subject to annual renewal upon application and proof of compliance with the requirements for periodic inspections as prescribed in subchapters fourteen and eighteen of this chapter. Applications for renewal of such permits shall be submitted on forms furnished by the department, not later than thirty calendar days prior to the expiration date of the permit, accompanied by the required fee; and late applications for renewal shall be subject to the payment of an additional fee of one (1) dollar.

ARTICLE 19 ISSUANCE OF PERMITS

§[C26-118.1] 27-191 Approval of permit application.-All applications for permits and any accompanying plans and papers, including any amendments thereto, shall be examined promptly after their submission for compliance with the

provisions of this code and other applicable laws and regulations. Except as otherwise provided in section 27-198 of this article, applications complying with the provisions of this code and other applicable laws and regulations shall be approved by the commissioner and the permit issued promptly and not later than forty calendar days after the submission thereof, and applications failing to comply with the requirements of this code and other applicable laws and regulations shall be rejected and written notice of rejection, stating the grounds of rejection, shall be given the applicant promptly and not later than forty calendar days after the submission thereof, except that on or before the fortieth day, the commissioner may on good cause shown, and upon notification to the applicant, extend such time for an additional twenty days. Whenever a permit application has been rejected and is thereafter revised and resubmitted to meet stated grounds of rejection, the revised application shall be approved if it meets the stated grounds of rejection, or shall be rejected if it fails to meet the stated grounds of rejection; and the permit shall be issued or written notice of rejection, stating the grounds of rejection, shall be given the applicant promptly and not later than 20 calendar days after the resubmission thereof.

§[C26-118.2] 27-192 Approval of application in part.- The commissioner may approve the application and issue a permit for construction of part of a building, including foundations, before complete plans and specifications for the entire building have been submitted and approved, provided that adequate information and detailed plans or statements have been submitted complying with the provisions of this code and any other applicable laws and regulations, and provided further that the holder of such permit shall proceed with the building operation at his or her own risk and without assurance that a permit for construction of the entire building will thereafter be issued**.**

§[C26-118.3] 27-193 Signature to permit.- Every permit issued by the commissioner shall have his or her signature affixed thereto; but the commissioner may authorize any subordinate to affix such signature.

§[C26-118.4] 27-194 Posting of permit.- A permit card bearing the permit number, application number, location of the premises or equipment for which the permit is issued, and such other information as the commissioner may determine, shall be furnished the applicant in connection with the issuance of the permit; and such permit card shall be posted in a conspicuous place at such location open to public inspection during the entire time of the prosecution of the work or the use and operation of the equipment, or until the expiration of the permit. No such permit card shall be posted or displayed at any location other than the location of the premises or equipment for which the permit was issued.

§[C26-118.5] 27-195 Notice of commencement of work.- At least twenty-four hours written notice shall be given to the commissioner before the commencement of any work for which a permit has been issued. Before any work is commenced on an item of construction requiring controlled inspection, all persons responsible for such controlled inspection shall be notified in writing at least seventy-two hours prior to such commencement.

***§[C26-118.6] 27-196 Expiration of permit.-** Except as otherwise provided in section 27-190 of article eighteen of this subchapter, all permits issued by the commissioner shall expire by limitation and become invalid if the permitted work or use is not commenced within twelve months from the date of issuance of the permit or, if commenced, is suspended or abandoned for a period of twelve months thereafter. All permits for work in a special flood hazard area as delineated in reference standard RS4-4 shall expire if the actual start of permanent construction has not occurred within one hundred eighty-eight days of the date on which such permit is issued. The commissioner may, however, upon good cause shown, reinstate a work permit at any time within a period of two years from the date of issuance of the original permit, provided that the work shall comply with all the requirements of this code and other applicable laws and regulations in effect at the time application for reinstatement is made, and provided further that the applicant shall pay a renewal fee in accordance with section 26-211 of the code.
****Local Law 38-1990; Local Law 33-1988.***

****§[C26-118.7] 27-197 Revocation of permit.-** The commissioner may, on notice to the applicant, revoke any permit for failure to comply with the provisions of this code or other applicable laws and regulations; or whenever there has been any false statement or any misrepresentation as to a material fact in the application or accompanying plans and papers upon the basis of which the permit was issued; or whenever any permit has been issued in error and conditions are such that a permit should not have been issued. Such notice shall inform the applicant that he or she shall have the right to present to the commissioner or his or her representative within five business days or personal service or ten days of the posting of service by mail information as to why the permit should not be revoked. The commissioner may suspend a permit immediately when the commissioner has determined that an imminent peril to life or property exists and shall at the same time notify the applicant that the permit shall be revoked

and that the applicant has the right to present to the commissioner or his or her representative within five business days of personal service or ten days of the posting of service by mail information as to why the permit should not be revoked.
Local Law 11-1988.

§[C26-118.8] 27-198 Approval of plans and permit applications for alteration or demolition of single room occupancy multiple dwellings.-

a. For the purposes of this section "single room occupancy multiple dwelling" means either a class A multiple dwelling used in whole or in part as a rooming house or furnished room house or for single room occupancy pursuant to section two hundred forty-eight of the multiple dwelling law or containing rooming units, as such term is defined in section 27-2004 of the housing maintenance code or a class B multiple dwelling. Notwithstanding the foregoing provision, the term "single room occupancy multiple dwelling" shall not include:

(1) college or school dormitories;

(2) clubhouses;

(3) luxury hotels, as such term is defined by the commissioner of housing preservation and development;

(4) residences whose occupancy is restricted to an institutional use such as housing intended for use primarily or exclusively by the employees of a single company or institution;

(5) city-owned multiple dwellings;

(6) any multiple dwelling containing fewer than nine class B dwelling units used for single room occupancy unless the total number of such units is more than fifty percent of the total number of dwelling units in such multiple dwelling; and

(7) any class A or class B multiple dwelling which is

(a) The subject of a program approved by the commissioner of housing preservation and development and related to the rehabilitation and preservation of single room occupancy multiple dwellings other than a program of tax abatement or tax exemption including, but not limited to, programs of tax abatement or tax exemption authorized by subchapter two of chapter two of title eleven of the administrative code or section four hundred twenty-one-a of the real property tax law, and

(b) exempted from the provisions of this section by such commissioner.

b. (1) The commissioner shall not approve any plans pursuant to article nine of this subchapter, issue an alteration permit pursuant to article twelve of this subchapter or a demolition permit pursuant to article fourteen of this subchapter for a single room occupancy multiple dwelling:

(a) for the alteration of such dwelling to a class A multiple dwelling to be used in whole or in part for other than single room occupancy purposes or for the demolition of such dwelling, or

(b) with respect to the addition or removal of kitchen or bathroom facilities in such multiple dwelling or such other types of alteration work as shall be prescribed by regulation of the commissioner of housing preservation and development, in consultation with the commissioner, unless

(i) the commissioner of housing preservation and development has certified that there has been no harassment of the lawful occupants of such multiple dwelling within the thirty-six month period prior to the date of the submission of an application for a certification of no harassment or has issued a waiver of such certification,

(ii) the applicant has submitted a sworn statement by or on behalf of all the owners, as such term is defined in paragraph forty-five of subdivision a of section 27-2004 of the housing maintenance code, of such multiple dwelling that there will be no harassment of the lawful occupants of such multiple dwelling by or on behalf of such owners during the construction period, and

(iii) the applicant has submitted a plan which provides for the safety and health of the occupants thereof during the construction period.

(2) Notwithstanding the foregoing provisions, if within the thirty-six month period prior to the date of the submission of an application for a certification of no harassment to the commissioner of housing preservation and development, title to a single room occupancy multiple dwelling was vested in the city, the period of time for which the commissioner of housing preservation and development shall certify whether there has been no harassment of the lawful occupants of such multiple dwelling shall commence from the date on which the title to such property was no longer vested in the city.

(3) An applicant for such plan approval, alteration or demolition permit shall forward a copy of such application to the commissioner of housing preservation and development, together with an application for a certification of no harassment pursuant to section 27-2093 of the housing maintenance code.

(4) The time period in which the commissioner is required to approve or reject an application, or resubmission thereof, for such plan approval or alteration permit pursuant to section 27-144 or 27-191 of this subchapter shall commence from the date that the commissioner receives either such certification or a waiver thereof, or notice of the denial of such certification or waiver thereof from the commissioner of housing preservation and development and such sworn statement and plan.

(5) Where the commissioner of housing preservation and development denies the certification required by this section the commissioner shall reject

the application for such plan approval, alteration permit or demolition permit.

(6) The commissioner shall be empowered to issue a stop-work notice and order with respect to an alteration or demolition permit or rescind such plan approval, alteration or demolition permit at the request of the commissioner of housing preservation and development pursuant to section 27-2093 of the housing maintenance code.

(7) Where the commissioner rejects an application for such plan approval, alteration or demolition permit pursuant to paragraph five of this subdivision or where the commissioner rescinds such plan approval, alteration or demolition permit pursuant to paragraph six of this subdivision, no further application for plan approval, an alteration or demolition permit, for the purposes described in subdivision b of this section, with respect to the alteration or demolition of such multiple dwelling shall be considered by the commissioner for a period of thirty-six months following the date of the denial of the certification of no harassment by the commissioner of housing preservation and development or the date of the rescission of such certification of no harassment by such commissioner.

(8) The provisions of this subdivision shall not apply to repairs, demolition or any other work performed by a city agency or by a contractor pursuant to a contract with a city agency.

* (9) The commissioner shall not approve any plans or issue any permits based upon a certification of no harassment issued prior to February second, nineteen hundred eighty-seven unless the commissioner of housing preservation and development issues a supplemental certification that there is no reasonable cause to believe that there has been harassment at the multiple dwelling during the period of time from the date of the issuance of the original certification of no harassment to the date of the application for such a supplemental certification. If the commissioner of housing preservation and development finds that there is reasonable cause to believe that harassment has occurred during such period of time he or she shall suspend the original certification of no harassment pursuant to paragraphs two and three of subdivision f of section 27-2093 of the code.

Local Law 9-1987; Local Law 59-1985, language juxtaposed per Ch. 907-1985.

****§[C26-118.9] 27-198.1 Approval of plans and permit applications where an asbestos project is performed.-**

a. The commissioner shall not approve any plans pursuant to article nine of this subchapter except plans for the construction of new buildings unless an asbestos investigator has certified that work to be performed will not constitute an asbestos project or the applicant submits with the application for approval of plans an asbestos inspection report completed in accordance with the provisions of section 24-146.1 of subchapter six of chapter one of title twenty-four of the code.

b. Where the commissioner of environmental protection has by regulation required that, in connection with other work for which a permit but not plans is required under this chapter, that an asbestos investigator certify that the work to be performed will not constitute an asbestos project or that an asbestos inspection report be completed in accordance with the provisions of section 24-146.1 of subchapter six of chapter one of title twenty-four of the code, the commissioner shall not issue such permit unless such certification or such report is submitted in connection with the application for such permit.

c. Where the commissioner of environmental protection has by regulation required that, in connection with work for which an alteration permit or demolition permit is required under this chapter, that an asbestos investigator certify that the work to be performed will not constitute an asbestos project or that the applicant submit with the application for such permit proof that an asbestos removal plan has been approved by the commissioner of environmental protection in accordance with the provisions of section 24-146.1 of subchapter six of chapter one of title twenty-four of the code, the commissioner shall not issue such permit unless such certification or proof of such approval has been submitted in connection therewith.

d. The commissioner shall not issue any permit under this chapter for work which constitutes an asbestos project and for which an asbestos inspection report is required unless the applicant at the time of application for such permit certifies on forms prescribed by the commissioner of environmental protection that he or she is familiar with federal, state and local laws and regulations applicable to asbestos related work.

e. Whenever proof of approval of an asbestos removal plan is required for plan or permit approval, any requirement for the submission of an asbestos inspection report shall be deemed waived.

f. For purposes of this section, the terms "asbestos", "asbestos inspection report", "asbestos investigator", "asbestos project" and "asbestos removal plan", shall have the meanings as are ascribed in section 24-146.1 of subchapter six of chapter one of title twenty-four of the code.

*****Local Law 80-1986. Not applicable to plans submitted prior to April 1, 1987 oramendments or revisions to such plans submitted prior to March 31, 1988; Local Law 76-1985, language juxtaposed per Ch. 907-1985.***

***§[C26-118.10] 27-198.2 Conversion, alteration and demolition of single room occupancy multiple dwellings prohibited.-**

a. Except as otherwise provided in this section and notwithstanding any other provision of law to the contrary, no single room occupancy dwelling unit or

units or portions thereof (i) shall be altered for or converted to use as apartments, whether such alteration or conversion is effected with or without physical alterations, or (ii) shall be altered for or converted to use other than as single room occupancy dwelling units, whether such alteration or conversion is effected with or without physical alterations, or (iii) shall be altered to add either kitchens or bathrooms if such units lacked either of such facilities as of January ninth, nineteen hundred eighty-five or to remove such facilities. No single room occupancy multiple dwelling shall be altered to reduce the number of single room occupancy dwelling units and no single room occupancy multiple dwelling shall be demolished. No single room occupancy multiple dwelling shall be altered to remove kitchens or bathroom facilities which are used for any single room occupancy dwelling unit.

b. 1. For the purposes of this section the term "single room occupancy multiple dwelling" means a multiple dwelling which is either (i) a class A multiple dwelling which is either used in whole or in part for single room occupancy or as a rooming house or furnished room house pursuant to section two hundred forty-eight of the multiple dwelling law or which contains rooming units or (ii) a class B multiple dwelling including, without limitation, hotels, lodging houses, rooming houses, boarding houses and furnished room houses. Notwithstanding the foregoing provision, the term "single room occupancy multiple dwelling" shall not include:

(a) any multiple dwelling which had a certificate of occupancy as a college or school dormitory on January ninth, nineteen hundred eighty-five or if the dwelling had no certificate of occupancy was lawfully used as a college or school dormitory on such date;

(b) any multiple dwelling which had a certificate of occupancy as a clubhouse on January ninth, nineteen hundred eighty-five or if the dwelling had no certificate of occupancy was lawfully used as a clubhouse on such date;

(c) any multiple dwelling which was a residence whose occupancy was restricted to an institutional use such as housing intended for use primarily or exclusively by the employees of a single company or institution on January ninth, nineteen hundred eighty-five;

(d) multiple dwellings owned by the city, the state, or any political subdivision thereof;

(e) hotels in which the rent on October first, nineteen hundred eighty-four, exclusive of governmentally assisted rental payments, charged for seventy-five percent or more of the total number of occupied individual dwelling units was more than fifty-five dollars per day for each unit rented on a daily basis, or more than two hundred fifty dollars per week for each unit rented on a weekly basis or more than eight hundred fifty dollars per month for each unit rented on a monthly basis;

(f) any class A or class B multiple dwelling in which, on January ninth, nineteen hundred eighty-five, either less than five dwelling units were rooming units or dwelling units other than apartments or less than ten percent of the total number of dwelling units were rooming units or dwelling units other than apartments;

(g) any class A or class B multiple dwelling which is (a) the subject of a project or program related to the rehabilitation and preservation of single room occupancy multiple dwellings approved by the commissioner of housing preservation and development other than a program of tax abatement or tax exemption including, but not limited to, programs of tax abatement or tax exemption authorized by subchapter two of chapter two of title eleven of the code or section four hundred twenty-one-a of the real property tax law, and (b) exempted from the provisions of this section by such commissioner;

(h) any wood-frame multiple dwelling.

(i) any hotel in which during the twelve month period commencing on January first, nineteen hundred eighty-four ninety percent or more of the dwelling units were occupied for less than thirty consecutive days by any one occupant and in which there are no dwelling units subject to regulation pursuant to the rent stabilization law of nineteen hundred sixty-nine, as amended, provided however that this provision shall not apply unless an application for exemption is filed with the department of housing preservation and development in such form and containing such information as the department shall prescribe on or before April thirtieth, nineteen hundred eighty-seven.

2. The status of a vacant building as a single room occupancy multiple dwelling shall be determined by its last legal use prior to vacancy.

3. For the purposes of this section the term "single room occupancy dwelling unit" means a dwelling unit, other than an apartment, in a single room occupancy multiple dwelling.

4. For the purposes of this section the terms "apartment", "dwelling unit", "owner" and "rooming unit" shall be as defined in the housing maintenance code.

c. 1. The commissioner shall not approve any plans pursuant to article nine of this subchapter, issue an alteration permit pursuant to article twelve of this subchapter or a demolition permit pursuant to article fourteen of this subchapter for a single room occupancy multiple dwelling:

(a) for the alteration of such dwelling to a class A multiple dwelling to be used in whole or in part for other than single room occupancy purposes or for the demolition of such dwelling, or

(b) with respect to the addition or removal of kitchen or bathroom facilities in such multiple

dwelling prohibited pursuant to subdivision a of this section, or

(c) with respect to any other alterations or other work prohibited pursuant to subdivision a of this section.

2. Except as provided in paragraph three of this subdivision, the department shall revoke any such permit or approval granted on or after January ninth, nineteen hundred eighty-five.

3. If demolition of a single room occupancy multiple dwelling has been completed pursuant to a permit issued on or after January ninth, nineteen hundred eighty-five and prior to August fifth, nineteen hundred eighty-five, the department shall not issue a permit for new construction on the site of such demolished dwelling and shall revoke any such permit for new construction issued on or after January ninth, nineteen hundred eighty-five unless the owner makes the payment or provides for replacement units pursuant to subparagraph (a) of paragraph (4) of subdivision d of this section for each single room occupancy dwelling unit which was demolished.

4. The provisions of this section shall not apply to work done pursuant to any permit issued by the department prior to January ninth, nineteen hundred eighty-five.

a. The provisions of subdivisions a and c shall not apply to a single room occupancy multiple dwelling if:

1. (a) such multiple dwelling had twenty-four or fewer dwelling units on January ninth, nineteen hundred eighty-five and

(i) on January first, nineteen hundred eighty-three and on January ninth, nineteen hundred eighty-five had seven or fewer occupied single room occupancy dwelling units, excluding any owner occupied single room occupancy dwelling units; or

(ii) an individual owner with at least a fifty percent fee interest in the multiple dwelling establishes to the satisfaction of the commissioner of the department of housing preservation and development prior to the issuance of any permit by the department of buildings for work which would otherwise be prohibited pursuant to subdivisions a and c of this section that he or she intends to occupy such premises as his or her primary residence for a period of not less than three years after completion of such work; and

(iii) an application to establish an exemption pursuant to this subparagraph is submitted to the department of housing preservation and development and such application is approved by the department; or

(b) such multiple dwelling had twenty-five or more dwelling units on January ninth, nineteen hundred eighty-five and the residential portion of such dwelling has been continuously vacant since January first, nineteen hundred eighty-three, an application to establish an exemption pursuant to this subparagraph is submitted to the department of housing preservation and development on or before May twenty-ninth, nineteen hundred eighty-seven and such application is approved by such department; or

2. such multiple dwelling is within an area for which the department of city planning has issued a special permit prior to January ninth, nineteen hundred eighty-five which was conditioned upon a commitment by the developer to provide dwelling units as set forth in such special permit to replace the single room occupancy dwelling units which are lost; or

3. such multiple dwelling is determined by the department or by the fire department to be an unsafe building and the department determines there is no alternative to demolition; or

4. (a) (i) Prior to the issuance of a permit for work which would otherwise be prohibited pursuant to subdivisions a and c of this section, the owner of such single room occupancy multiple dwelling complies with the provisions of §27-198.3 of this code and further provides for the replacement of the single room occupancy dwelling units which would be altered, converted or demolished by paying, to the single room occupancy housing development fund company established pursuant to subdivision i of this section for each dwelling unit which would be altered, converted or demolished as a result of the work, forty-five thousand dollars or such other amount which the commissioner of housing preservation and development determines by regulation would equal the cost of creating a dwelling unit, other than an apartment, to replace such single room occupancy dwelling unit. No such regulation shall be promulgated before January first, nineteen hundred eighty-eight provided, however, that on and after such date such regulation shall be promulgated where the commissioner determines that the cost of creating such a dwelling unit, exceeds forty-five thousand dollars. Each regulation shall indicate the manner in which the cost of creating such a dwelling unit was determined. Notwithstanding the foregoing, where fifty percent or more of the dwelling units of such multiple dwelling are occupied as of January twentieth, nineteen hundred eighty-seven, the owner of such multiple dwelling shall be required to provided for replacement units pursuant to clause (ii) of this subparagraph for such units occupied as of such date; or

(ii) Prior to the issuance of a permit for work which would otherwise be prohibited pursuant to subdivisions a and c of this section, the owner replaces the single room occupancy dwelling units which would be altered, converted or demolished as a result of such work elsewhere within the city by providing dwelling units affordable to persons of low and moderate income, under a plan approved by such commissioner which complies with the provisions of §27-198.3 of this code. "Replacement" shall include but not be limited to the acquisition of an existing

multiple dwelling or the creation of such dwelling units either by the construction of a new multiple dwelling or the substantial rehabilitation of an existing multiple dwelling. "Multiple dwelling" shall include but not be limited to a "single room occupancy multiple dwelling". In the event that an existing multiple dwelling is acquired for the purpose of providing replacement units, such multiple dwelling shall be located in the same or adjacent community board in which the single room occupancy multiple dwelling which is to be altered, converted or demolished is located. Where a replacement Plan is submitted to such commissioner, the commissioner shall give notice to the council member and community board for the community district in which the dwelling units to be provided pursuant to such plan are to be located. Such plan shall provide either for the sale or net lease of the multiple dwelling containing such dwelling units to a not-for-profit organization or for such other form of transfer of ownership, management or possession of such multiple dwelling approved by such commissioner.

(iii) Notwithstanding the provisions of item (i) or (ii) of this subparagraph, upon the submission of an application for a permit for such work an owner shall make an application for a certification of no harassment or supplemental certification of no harassment pursuant to the provisions of section 27-2093 of this code and if such application is denied by the commissioner of housing preservation and development or a certification is granted and thereafter revoked and the basis for such denial or revocation is predicated in whole or in part on a determination by such commissioner that harassment occurred at such multiple dwelling after January ninth, nineteen hundred eighty-five, no permit shall be issued on the basis of any payment made pursuant to item (i) or the provision of dwelling units pursuant to item (ii) and such owner shall be subject to the provisions of section 27-2151 of this code and subdivisions a and c of this section. In addition, the sanctions provided by section 27-198 shall apply and no permit shall be issued for a period of two years following the expiration of the sanction period set forth in section 27-198 unless the owner, prior to the issuance of such permit, makes a payment of twice the amount required by item (i) or provides for twice the number of replacement units required by item (ii) for each single room occupancy dwelling unit which would be demolished, altered or converted as a result of the issuance of such permit. Any payment made or replacement units provided prior to such denial or revocation shall be credited against such required amount or units.

(b) The amount of the payment required to be made or the number of dwelling units required to be provided pursuant to subparagraph (a) of this paragraph may be reduced in whole or in part by the commissioner of housing preservation and development if such commissioner determines that the owner has established:

(i) that there is no reasonable possibility that such owner can make a reasonable rate of return unless the property is altered or converted in a manner prohibited by subdivisions a and c of this section or demolished; and (ii) that neither the owner nor any prior owner intentionally managed the property to impair the ability to earn such return, and (iii) that the requirement that all single room occupancy dwelling units be replaced would substantially impair the feasibility of redeveloping the property for any other use. Such application shall be made to the commissioner of housing preservation and development in a form and manner and containing such information as the commissioner of housing preservation and development shall prescribe. The term "reasonable rate of return" is defined to mean a net annual return of eight and one-half percent of the assessed value of the subject property without recourse to the alteration, conversion or demolition prohibited by subdivisions a and c of this section. If the department of housing preservation and development determines that the assessed value of the subject property has increased as the result of the sale of such property, such department shall disregard the increase in the assessed value resulting from such sale to the extent that such department determines that the amount paid for the property at such sale was in excess of the fair market value of the property on the date of the sale if the property continued to be used for single room occupancy rental housing of the same type and quality after the sale. For the purpose of such determination the property shall be valued subject to the continuation of tenancies existing at the subject property immediately prior to the date of the sale. Notwithstanding the foregoing provision the commissioner shall revoke a determination reducing the payment or the number of replacement dwelling units if the denial or revocation of a certification of no harassment or supplemental certification of no harassment is predicated in whole or in part on a determination by such commissioner that harassment occurred at such multiple dwelling after January ninth, nineteen hundred eighty-five.

e. The department shall not issue a building permit to allow new construction on the site after demolition pursuant to paragraph three of subdivision d of this section unless the owner makes the payment or provides replacement units pursuant to subparagraph (a) of paragraph four of subdivision d of this section for each single room occupancy dwelling unit which is demolished, provided however that if the department of housing preservation and development determines that the conditions which necessitated or significantly contributed to the need for the demolition were not the result of violations of the housing maintenance code which resulted from intentional acts or substantial negligence of an owner or former owner or his or her agent or was the owner of record prior to January ninth, nineteen hundred eighty-five and such acts did not occur during the period of his or her ownership, the owner may

apply for a reduction of the required replacement units pursuant to subparagraph (b) of paragraph four of subdivision d of this section.

f. Notwithstanding the provisions of section 27-2077 of the code for purposes of this section, rooming units for persons of low and moderate income provided pursuant to paragraph two or four of subdivision d of this section may be created through alterations of apartment units in a class A multiple dwelling.

g.** i Any person who violates the provisions of this section shall be subject to all of the remedies and penalties provided for in this title except that no civil or criminal penalties shall apply with respect to acts in violation of this section committed prior to August fifth, nineteen hundred eighty-five.

***As enacted but "1" probably intended.*

2. In addition to any other penalties set forth in this subdivision or in any other provisions of law, any person who violates the provisions of this section following August fifth, nineteen hundred eighty-five shall also be liable for a civil penalty in the amount of one hundred fifty thousand dollars for each single room occupancy dwelling unit unlawfully altered, converted or demolished.

3. An owner who falsely represents an intention to occupy a dwelling in order to obtain a permit pursuant to clause (ii) of subparagraph (a) of paragraph one of subdivision d of this section to do work which would otherwise be prohibited pursuant to subdivisions a and c of this section shall be liable for a civil penalty of fifty thousand dollars for each single room occupancy dwelling unit demolished or converted to use as apartments under such permit.

4. Such civil penalties shall be recovered by the corporation counsel in an action in any court of competent jurisdiction. A judgement recovered in such an action shall constitute a lien against the premises with respect to which the violation occurred from the time of the filing of a notice of pendency in the office of the clerk of the county in which such premises is situated. A notice of pendency may be filed at the time of the commencement of this action or at any time before final judgement or order.

5. In addition to any other penalties set forth in this subdivision or in any other provisions of law, the commissioner shall either (i) refuse to issue or shall seek to have revoked the certificate of occupancy of a dwelling which has been altered, converted or demolished after August fifth, nineteen hundred eighty-five to reduce the number of single room occupancy dwelling units in violation of this section unless the owner makes the payment or provides replacement units pursuant to subparagraph (a) of paragraph four of subdivision d of this section for each single room occupancy dwelling unit which was unlawfully altered, converted or demolished, provided, however, that such owner shall not be eligible for a reduction in such payment pursuant to subparagraph (b) of paragraph four of subdivision d of this section; or (ii) order any single room occupancy multiple dwelling to be restored so that the number of single room occupancy dwelling units is increased up to the number of such units prior to such alteration or conversion.

h. All applications submitted pursuant to this section shall be accompanied by an affidavit of the owner attesting to the accuracy and truthfulness of the information contained therein and an application fee. The department of housing preservation and development is authorized to establish such reasonable fees as may be appropriate.

i. The commissioner of housing preservation and development shall establish a single room occupancy housing development fund company pursuant to the provisions of article eleven of the private housing finance law or such other provision of law as may be deemed appropriate by the corporation counsel. Monies paid to the company shall be used for the preservation, acquisition and development of dwelling units for persons of low and moderate income pursuant to applicable provisions of law and a preference in the occupancy of such dwelling units shall be given to individuals who are of low income, are single adults and whose last residence was in a single room occupancy multiple dwelling unit which was altered, demolished or converted. On or before June thirtieth, nineteen hundred eighty-eight and annually thereafter the company shall submit a report to the city council and to the mayor describing its activities during the preceding calendar year.

j. All civil penalties recovered pursuant to any provision of this section shall be single room occupancy housing fund development company established pursuant to subdivision i of this section.

k. The provisions of this section shall not be construed to alter, affect or amend any of the provisions of the emergency housing rent control act, the emergency tenant protection act of nineteen seventy-four or any local laws enacted pursuant thereto, the emergency housing rent control law, the rent stabilization law of nineteen hundred sixty-nine and the local hotel stabilization law of nineteen hundred sixty-nine.

l. For the purpose of this section and §27-198.3, "commissioner of housing preservation and development" may also mean such other agency or office of the city, as the mayor may direct.

***Local Law 9-1987. However, 27-198.2 and 27-198.3 have no force or effect pursuant to Seawall v. New York, 74 N.Y. 2d 92.*

***§ 27-198.3 Relocation of tenants in occupancy in certain single room occupancy multiple dwellings.-**

a. An owner who, pursuant to either clause (i) or (ii) of subparagraph (a) of paragraph four of subdivision d of section 27-198.2, seeks an exemption from the provisions of subdivisions a and c of such section, shall be required to offer tenants in

occupancy as of January twentieth, nineteen hundred eighty-seven, or thereafter, an opportunity for relocation to a comparable unit at a comparable rent and such comparable unit shall be located in the same borough in which the single room occupancy unit which is to be exempted is located. Any owner subjected to the provisions of subdivisions a and c of such section shall, on or before April first, nineteen hundred eighty-seven, submit to the commissioner of housing preservation and development a sworn statement containing a list of tenants in occupancy as of January twentieth, nineteen hundred eighty-seven. A "tenant in occupancy" shall be defined as an occupant of a dwelling unit within a single room occupancy multiple dwelling who has lawfully occupied such dwelling unit for thirty consecutive days or longer or who has entered into a lease with respect to such dwelling unit.

b. On or before April first, nineteen hundred eighty-seven, an owner of a single room occupancy multiple dwelling subject to the provisions of subdivisions a and c of section 27-198.2 of this code shall both post in a conspicuous, common area in such multiple dwelling and mail to each occupant on an annual basis thereafter and to each new occupant within ten days of occupancy, a notice, in a form approved by the commissioner of housing preservation and development, setting forth the rights of tenants in occupancy pursuant to this section and other applicable provisions of law. Such owner shall be subject to a civil penalty of one hundred dollars per day for each and every day that such owner fails to mail, or to post such notice after April first, nineteen hundred eighty-seven.

c. The commissioner of housing preservation and development shall not authorize the exemption of any single room occupancy dwelling unit from the prohibitions contained in subdivisions a and c of section 27-198.2 of this code unless the owner of such single room occupancy multiple dwelling shall submit a sworn statement to such commissioner accounting for all vacancies occurring at such multiple dwelling after January twentieth, nineteen hundred eighty-seven by submitting to such commissioner a sworn statement by each and every tenant in occupancy at such multiple dwelling, on January twentieth, nineteen hundred eighty-seven, or thereafter, who has vacated such multiple dwelling, that such tenant was advised by the owner, prior to vacating such dwelling, of his or her right to remain at such dwelling and his or her right to be offered relocation by such owner pursuant to this section. Where a vacancy has occurred at such multiple dwelling after January twentieth, nineteen hundred eighty-seven and the owner does not submit the affidavit of such tenant, the owner shall submit an affidavit to such commissioner stating either that such tenant wrongfully refused to sign such affidavit or, if the owner lacks knowledge of the cause for such vacancy, setting forth the period of such tenant's occupancy at such multiple dwelling, the date of such tenant's vacating of such multiple dwelling and the circumstances thereof. The commissioner shall have the discretion not to accept an affidavit which such commissioner has reason to believe is substantially or materially inaccurate.

d. Where an owner, pursuant to either clause (i) or (ii) of subparagraph four of subdivision d of section 27-198.2, seeks an exemption from the provisions of subdivisions a and c of such section for single room occupancy dwelling units which had tenants in occupancy as of the date of the application for such exemption, such owner shall submit to the commissioner of housing preservation and development a relocation plan for such tenants. If such plan is approved by such commissioner, the owner shall notify such tenants, in a form approved by such commissioner, of their right to elect to accept the offer of relocation pursuant to such plan within the period of ninety days from the date of such notification. A tenant in occupancy who fails to accept such an offer within such ninety day period or rejects such offer shall be deemed to have waived his or her right to relocation pursuant to this section. Upon approval of a relocation plan by such commissioner, the commissioner, shall notify those parties who have registered with the commissioner as being interested in providing tenants in occupancy with alternative offers of relocation.

Local Law 9-1987. However, 27-198.2 and 27-198.3 have no force or effect pursuant to Seawall v. New York, 74 N.Y. 2d 92.

ARTICLE 20 CONDITIONS OF PERMIT

§[C26-119.1] 27-199 Payment of fees.- No permit shall be issued unless and until the required fee or fees therefor, as prescribed in subchapter three of chapter one of title twenty-six of the administrative code shall have been paid.

§[C26-119.2] 27-200 Compliance with code, etc.- Permits shall be deemed to incorporate the provisions [*sic*] that the applicant, his or her agent, employees, and contractors shall carry out the permitted work or use in accordance with the provisions of this code and other applicable laws and regulations, whether specified or not, except insofar as variations therefrom have been legally permitted or authorized.

§C26-119.3] 27-201 Compliance with application, plans, etc.-
All work shall conform to the approved application and accompanying plans and papers, and any approved amendments thereto.

§[C26-119.4] 27-202 Adherence to lot diagram.- All work shall be located strictly in accordance with the approved lot diagram; and no lot or plot shall be changed, increased or diminished in area from that shown on the approved lot diagram, unless and until a revised diagram showing such changes, accompanied by the necessary statement of the owner or applicant,

shall have been submitted to and approved by the commissioner.

§[C26-119.5] 27-203 Compliance with safety requirements.- All building operations shall be conducted in accordance with and subject to the safety requirements of this code and other applicable laws and regulations, including any order or requirement by the commissioner that the building under construction or alteration be vacated, in whole or in part during the progress of the work and until the issuance of a certificate of occupancy.

***§[C26-119.6] 27-204 Builder's pavement.-**

a. Every permit issued for the construction or alteration of any building shall contain a statement that no certificate of occupancy or letter of completion shall be issued with respect to such building unless the sidewalk in front of or abutting such building, including but not limited to the intersection quadrant for corner property, shall have been installed and paved or repaired by the owner at his or her own cost, in the manner, of the materials, and in accordance with the standard specifications prescribed by the department of transportation pursuant to sections 19-113 and 19-115 of the code except where the commissioner has determined that such sidewalk is not required, unless the owner of such premises furnishes to the department prior to the issuance of a certificate of occupancy or letter of completion security satisfactory to the department that the sidewalk will be installed and paved or repaired within the time specified by the department. Nothing contained in this subdivision shall impair or diminish the power of the commissioner to waive the requirements of this subdivision if he or she shall determine that conditions do not require the construction [*sic*] of such sidewalks, nor affect the obligations of an owner of property specified under subdivision (a) of section 19-152 of the code, or relieve such owner of any such obligations, or impair or diminish the rights of the city or its agencies to enforce such obligations.

b. No permit shall be granted for the construction or alteration of any building, unless the owner of such premises has furnished to the department a policy of liability insurance, marked paid, in such amounts as may be fixed by the department. Such policy shall insure, indemnify and save the city harmless from all claims, suits, demands, causes of action and judgments by reason of personal injuries, including death, sustained by any person and from any claims, suits, demands, causes of action and judgments for damages to property, occurring on any sidewalk on, abutting or in front of such premises, including but not limited to the intersection quadrant for corner property, up to the date of issuance of such certificate of occupancy or letter of completion or up to the date on the completion of the installation and pavement of such sidewalk in accordance with the standard specifications and regulations prescribed by the commissioner of the department of transportation pursuant to sections 19-113 and 19-115 of the code, whichever is later. In the event that the owner of the premises is covered by a policy of liability insurance, the department may accept a certificate of endorsement extending such policy to include the city within the policy's coverage.

Local Law 65-1996.

ARTICLE 21 DEPARTMENT INSPECTIONS

§[C26-120.1] 27-205 Right of entry and inspection.- The commissioner or his or her authorized representatives, in the discharge of their duties, shall have authority to enter upon and examine and inspect at all reasonable times any building, enclosure, or premises, or any part thereof, or any signs or service equipment attached thereto or contained therein, for the purpose of determining compliance with the provisions of this code and other applicable laws and regulations.

§[C26-120.2] 27-206 Identification of inspectors.- Officers and employees of the department, in the discharge of their duties, shall identify themselves by exhibiting the official badge of the department; and other authorized representatives of the commissioner shall identify themselves by producing and exhibiting their authority in writing signed by the commissioner.

§[C26-120.3] 27-207 General provisions.- All examinations and inspections, including all tests in connection therewith, as required by the provisions of this code and other applicable laws and regulations, shall be made and conducted under the direction of the commissioner and in accordance with such inspection and test procedures as may be prescribed by the provisions of this code or other applicable laws and regulations, with the expense of all tests to be borne by the owner or lessee, or the contractor performing the work. The commissioner may accept inspection and test reports from officers and employees of the department and other government agencies. The commissioner may accept signed statements and supporting inspection and test reports filed by architects, engineers or persons superintending construction work and the installation of equipment, under and pursuant to the requirements of sections 27-131, 27-132, 27-135 and 27-136 of this subchapter.

§[C26-120.4] 27-208 Preliminary inspection.- Before the issuance of a work permit, the commissioner may cause an examination and inspection to be made at the site of the proposed work.

§[C26-120.5] 27-209 Inspections during progress of work.- After the issuance of a work permit, inspections shall be made during the progress of the work at such times or at such stages of the work and in such manner as the commissioner shall direct; and such inspections shall include inspection of machinery

and equipment used for hoisting purposes, cableways and rigging purposes. The commissioner may accept signed statements by architects or engineers and supporting inspection and test reports which have been filed with the department covering materials and equipment subject to controlled inspection and semi-controlled inspection, as provided under sections 27-132, 27-133, 27-136 and 27-137 of this subchapter, and the work may, unless otherwise specifically provided by code provisions or directed by the commissioner, proceed without any verifying inspections or test by the department, provided that the names and business addresses of such architects or engineers shall have been set forth in the work permit application or filed in writing with the department not later than ten calendar days prior to the commencement of work thereunder.

§[C26-120.6] 27-210 Final inspection.- Upon completion of the work, and before the issuance of any certificate of occupancy or equipment use permit, a final inspection of the work shall be made by the department, at which the architect, engineer, or other person who supervised or superintended the construction, installation or alteration work shall be present; and any and all failures to comply with the provisions of this code or other applicable laws and regulations shall be noted and the owner or lessee promptly notified thereof in writing.

§[C26-120.7] 27-211 Inspection of completed buildings.- The commissioner shall cause inspections to be made periodically of completed buildings, and of signs and service equipment installations when so required by the provisions of subchapter four of chapter one of title twenty-six, or other applicable laws and regulations.

§[C26-120.8] 27-212 Inspection reports.- All inspection reports shall be in writing and signed by the inspector, or the responsible individual, or an officer of the inspection service, making the examination of inspection; and a record of all inspections shall be kept by the department.

ARTICLE 22 CERTIFICATES OF OCCUPANCY

***§[C26-121.1] 27-213 General provisions.-**All certificates of occupancy shall be issued by the commissioner and the issuance thereof shall be subject to the provisions of this section, and to the provisions of subdivision (b) of section six hundred forty-five of the New York city charter and article five of subchapter three of chapter one of title twenty-six.

Local Law 91-1989.

§[C26-121.2] 27-214 New buildings; sidewalk requirements.-

a. Except as permitted under the provisions of section 27-218 of this article, no building hereafter constructed shall be occupied or used, in whole or in part, unless and until a certificate of occupancy shall have been issued certifying that such building conforms substantially to the approved plans and the provisions of this code and other applicable laws and regulations.

***b. (1) No certificate of occupancy or letter of completion shall be issued for any building, completed on or after April twenty-third, nineteen hundred sixty-three unless the sidewalk in front of or abutting such building, including but not limited to the intersection quadrant for corner property shall have been installed and paved or repaired by the owner at his or her own cost, in the manner, of the materials, and in accordance with the specifications prescribed by the department of transportation pursuant to sections 19-113 and 19-115 of the code, or unless the owner of such premises has furnished to the department security satisfactory to it that such sidewalk will be installed and paved or repaired within the time specified by the department or unless the commissioner waives such requirement where conditions do not require the installation of a sidewalk.

(2) The commissioner of buildings shall insure that streets are suitably improved in accordance with the standards and specifications of the department of transportation as required by subdivision two of section thirty-six of the general city law and shall otherwise carry out the provisions of such subdivision.

c. No certificate of occupancy or temporary certificate of occupancy (excluding amendments to previously issued certificates of occupancy) shall be issued on or after April first, nineteen hundred eighty-seven for any existing building which has not fully complied with all requirements of this code applicable to such existing building.

*****Local Law 65-1996.***

§[C26-121.3] 27-215 Altered buildings.- Except as permitted under the provisions of section 27-218 of this article, no building hereafter altered so as to change from one occupancy group to another, either in whole or in part, or so as to affect any existing means of egress, or so as to increase the number of habitable rooms in the building, and no building hereafter altered for which a certificate of occupancy has not theretofore been issued, shall be occupied or used unless and until a certificate of occupancy shall have been issued certifying that the alteration work for which the permit was issued has been completed substantially in accordance with the approved plans and the provisions of this code and other applicable laws and regulations. If the building was not required to be vacated, either in whole or in part, during the course of the alteration work, the occupancy or use of the building shall not continue more than thirty calendar days after completion of the alteration work, unless a certificate of occupancy has been issued, as above provided.

****§[C26-121.4] 27-216 Existing buildings.-** Upon application by the owner of an existing building, and subject to the provisions of section 27-111 of article three of this subchapter, the commissioner shall issue a certificate of occupancy for such building, provided that at the time of issuing such certificate, no notices of violation or other notices or orders affecting the building as they relate to the provisions of this code are pending before the department of buildings, and provided further that it is established to the satisfaction of the commissioner, after inspection and investigation, that the alleged use of the building has heretofore legally existed. The issuance of a certificate of occupancy for any existing building on waterfront property not used in conjunction with and in furtherance of waterfront commerce and/or navigation shall be conditioned upon compliance with the provisions of this code regulating means of egress, and upon the issuance of a certificate of completion by the commissioner of ports and trade, and shall be limited to the uses and purposes certified to therein.

***Local Law 14-1989; Local Law 5-1986, language juxtaposed per Ch. 907-1985.*

§[C26-121.5] 27-217 Change of occupancy or use.-

(a) No change shall be made in the occupancy or use of an existing building which is inconsistent with the last issued certificate of occupancy for such building, or which would bring it under some special provision of this code or other applicable law or regulation, unless a new certificate of occupancy is issued by the commissioner certifying that such building or part thereof conform to all of the applicable provisions of this code and all other applicable laws and regulations for the proposed new occupancy or use.

(b) Except as provided by law, a new certificate of occupancy shall not be required where the change of use is within the same use group as listed in the amended zoning resolution. Where a building exceeds three stories in height and the change does not exceed twenty per cent of the total floor area, an amendment to the existing certificate of occupancy for such new use shall be issued by the commissioner certifying that the proposed new occupancy and use conforms to the provisions of the laws governing building construction and that the proposed use will not be in conflict with any provisions of the labor law, multiple dwelling law or the zoning resolution.

†**§[C26-121.6] 27-218 Temporary occupancy.-** The commissioner may, upon request, issue a temporary certificate of occupancy for a part or parts of a building before the entire work covered by the permit shall have been completed, provided that such part or parts may be occupied safely prior to completion of the building and will not endanger public safety, health or welfare, and further provided that the temporary certificate of occupancy shall be issued initially for a period between ninety and one hundred eighty days, in the case of all buildings classified in occupancy group J-3 or three-family homes, and ninety days for all other buildings subject to renewal for additional ninety-day periods at the discretion of the commissioner. When an applicant applies for an initial temporary certificate of occupancy for longer than ninety days, he or she must state the reason necessary for the longer time period.

†Local Law 12-1993.

***§[C26-121.7] 27-219 Applications for certificates of occupancy.-** All applications for certificates of occupancy shall be submitted on forms furnished by the department. Each application shall be accompanied by an accurate and complete lot survey made by a licensed surveyor showing the location of any new building and/or any extension to an existing building, the elevation of the first tier of beams or the first floor, the finished grades of all open spaces on the lot, the location and controlling grades of watercourses, paved swales and similar above-grade methods of storm water disposal when permitted by this code, the locations of all catch basins on the property, the established curb level, and the location of all other structures and impervious surfaces, as defined in subdivision (a) of section P110.2 of reference standard RS-16, on the lot. Such lot survey shall also show the location and boundaries of the lot or plot upon which such buildings and structures are located. The commissioner may waive the requirement of such survey in the case of small sheds, stands, signs, and similar small structures. In addition, prior to the issuance of a certificate of occupancy the department shall confirm by inspection that all work relating to the installation of the part of the storm water drainage system which shall lie outside of such property, if and as required by section 24-526 of this code, has been satisfactorily completed.

***Local Law 65-1996; Note: For Excerpts from Local Law 7-1974, see end of Subchapter 1; Local Law 103-1989.*

§[C26-121.8] 27-220 Applicant.- The application for a certificate of occupancy shall be made by or in behalf of the owner of the building premises; and if made by a person other than the owner, the application shall be accompanied by a signed statement of the applicant stating that he or she is authorized by the owner to make the application. The full names and addresses of the owner, lessee, and applicant, and of the principal officers thereof, if a corporation shall be stated in the application.

§[C26-121.9] 27-221 Statement of compliance.- When a certificate of occupancy for a new or altered building is applied for, the application shall be accompanied by a signed statement of the architect, engineer or other person who supervised or superintended

the construction or alteration work, stating that he or she has examined the approved plans and specifications of the building for which the certificate of occupancy is sought, and that, to the best of his or her knowledge and belief, the building has been erected or altered in accordance with the approved plans and specifications and, as erected or altered, complies with the provisions of this code and all other applicable laws and regulations, except insofar as variations or variances therefrom have been legally permitted or authorized, specifying such variations or variances in such required statement.

§[C26-121.10] 27-222 Issuance of certificates of occupancy.-

(a) All applications for certificates of occupancy and accompanying papers shall be examined promptly after their submission. If the building is entitled to the certificate of occupancy applied for, the application shall be approved and the certificate of occupancy issued by the commissioner within ten calendar days after submission of the application. Otherwise, the application shall be rejected and written notice of rejection stating the grounds of rejection, shall be given to the applicant within ten calendar days of the submission of the application. Wherever an application has been rejected and proof is thereafter submitted establishing that the grounds of rejection have been met and that the building is entitled to the certificate of occupancy applied for, the application shall be approved and the certificate of occupancy issued within ten calendar days after submission of such proof.

(b) No certificate of occupancy or temporary certificate of occupancy shall be issued until a fire protection plan, if required under the provisions of article twenty-five, has been filed and accepted.

**(c) No certificate of occupancy shall be issued until compliance with such provisions of chapter three of title twenty-seven of this code as may be required in regulations promulgated by the commissioner is certified by the bureau of electrical control. This subdivision shall not apply to temporary certificates of occupancy issued by the commissioner pursuant to section 27-218 of this code.

Local Law 73-1988.

§[C26-121.11] 27-223 Contents of certificates.- In addition to the required certification by the commissioner, each certificate of occupancy shall state the purposes for which the building may be used in its several parts, and shall specify:

(a) The occupancy group or groups which apply to all parts of the building.

(b) The maximum permissible live loads on the several floors of the building.

(c) The occupancy loads in the building and all parts thereof.

(d) Any special stipulations and conditions of the building permit.

§[C26-121.12] 27-224 Record of certificates.- A record of all certificates of occupancy shall be kept by the department; and copies thereof shall be furnished by the department upon request, and on the payment of the fee prescribed in section 26-214 of the administrative code. The certificate of occupancy or a copy thereof shall be available for inspection at the building at all reasonable times.

ARTICLE 23 POSTING BUILDINGS

§[C26-122.1] 27-225 Posted occupancy and use.- All buildings other than buildings classified in occupancy group J shall be posted by the owner with a sign or placard in a form prescribed by the commissioner, which shall be permanently affixed to the structure in a conspicuous location in a public hall or corridor of the building, and which shall state the live loads and the occupant loads in the building and all parts thereof, as provided in subchapters six, eight and nine of this chapter.

§[C26-122.2] 27-226 Replacement of posted signs.- All posted signs shall be furnished by the owner and shall be of permanent design, shall not be removed or defaced, and if lost, removed or defaced, shall be immediately replaced. The commissioner may inspect or cause to be inspected periodically all existing buildings for compliance with the provisions of this code in regard to posting; and the inspection reports shall specify any violation thereof.

ARTICLE 24 STOP-WORK ORDER

§[C26-123.1] 27-227 Stop-Work notice and order.- Upon notice from the commissioner, or his or her authorized representatives, that any work at any building or building site is being executed in violation of the provisions of this code or other applicable laws or regulations, or in a dangerous or unsafe manner, such work shall immediately be stopped. The notice shall be given to the owner or lessee of the property involved, or to the agent of either of them, or to the person or persons doing the work, and may be continued in a stop-work order issued by the commissioner stating the reasons for the issuance of the order and the conditions under which the work may be resumed.

[Conditions warranting issuance of a stop work order include but are not limited to, failure to have a construction site safety coordinator present in the course of on-going construction at those sites where department rules and regulations requires that a construction site safety coordinator be designated and present; the failure to erect a sidewalk shed (or portions thereof), as required by Section C26-1901.5 of the administrative code, or the removal of a sidewalk shed or portions thereof, when such sidewalk shed is still required pursuant to Section C26-1901.5 of the administrative code.

In addition to the penalties provided for in this title, failure to comply with a stop work order shall be subject to the payment of a penalty in the sum of $500 for each day there is non-compliance, to be recovered in a civil action brought in the name of the commissioner;

provided, however, this shall not apply to any work performed to remedy an unsafe or hazardous condition.]*
Copy in brackets not enacted but probably intended.
(§C26-1901.5 referred to is renumbered §27-1021.)

§[C26-123.2] 27-228 Unlawful continuance.- No person shall, with knowledge or notice of a stop-work order, continue or cause to be continued any work covered by such order, except such work as is directed to be performed to remove the violation or the dangerous or unsafe condition.

ARTICLE 25 FIRE PROTECTION PLAN

§[C26-124.1] 27-228.1 Applicability.- This article shall apply to the following buildings and building sections:

(a) High rise buildings or building sections exceeding seventy-five feet in height.

(b) Buildings or building sections classified in occupancy group A, B, C, D, E or G which are two or more stories in height with over twenty thousand gross square feet per floor or are two or more stories in height with a total building floor area exceeding fifty thousand gross square feet.

(c) Any building containing an assembly use having an occupant load of three hundred or more persons.

(d) Buildings or building sections classified in occupancy group H or J-1 which are two or more stories in height and contain sleeping accommodations for thirty or more persons.

(e) Buildings or building sections classified in occupancy group J-2 which contain thirty or more dwelling units and over ten thousand gross square feet of floor area used for mercantile, assembly, educational or institutional purposes.

(f) Alterations to a building or building section listed in subdivisions (a) through (e) of this section, if the cost of the alterations, computed in accordance with section 27-119, exceeds one million dollars or involves a change of use.

§[C26-124.2] 27-228.2 Scope.-

(a) The plan shall include the following information, where applicable:

(1) Building description: address; block and lot numbers; number of stories; height in feet; occupancy group; construction classification; occupancy load and department of buildings application number.

(2) Key plans showing all floors, exits, corridors, partitions serving as fire separations or fire divisions, locations and ratings or required enclosures, stairs with pressurization, roof access, exit discharges, locations of frontage space.

(3) Descriptions in narrative form of safety systems and features, including:

a. Communications systems
b. Alarm systems
c. Smoke detection equipment
d. Location of fire command station
e. Elevator recall
f. Emergency lighting and power
g. Standpipes
h. Sprinklers
i. Compartmentation
j. Mechanical ventilation and air conditioning
k. Smoke control systems and equipment
l. Furnishings types and materials
m. Places of assembly
n. Fire department access
o. Other systems, required and voluntary, to be installed

(4) Proof that the fire safety plan, if required, has been filed with the fire department and accepted by that department.

§[C26-124.3] 27-228.3 General Requirements.- A fire protection plan, as defined in subchapter two shall be filed with the department by a registered architect or licensed professional engineer whose seal and signature shall be on the plan.

§[C26-124.4] 27-228.4 Retroactivity.- The requirements of this article shall apply to all alterations to, and construction of, buildings listed in section 27-228.1 in progress and not yet completed on March twenty-seventh, nineteen hundred eighty-four.

ARTICLE 26 SPECIAL FILING REQUIREMENTS

****§[C26-125.1] 27-228.5 General requirements.-** (a) Owners of all existing buildings which are required to comply with the provisions of subdivision (a) of section 27-353.1 (elevator vestibules), section 27-381 and subdivision (b) of section 27-382 (exit lighting), subdivision (b) of section 27-384 (exit signs), section 27-396.3 (signs in sleeping rooms), section 27-777.2 (ventilation in J-1 buildings), subdivision (b) of section 27-929 (sprinklers, fire alarm systems, fire command and communication systems), paragraph two of subdivision (c) of section 27-989 (elevators in readiness), section 27-996.1 (locks on hoistway doors) and section 27-996.2 (firemen's service) shall file with the department a report on or before April first, nineteen hundred eighty-seven certifying to the installation of the required fire protection systems in accordance with approved plans and appropriate permits prior to such date. Owners of all existing buildings not already subject to the requirements of article nine of subchapter six of this chapter as of January eighth, nineteen hundred seventy-three shall file with the department a report on or before October first, nineteen hundred eighty-five certifying to the installation of stair and elevator signs meeting the requirements of article nine of subchapter six of this chapter prior to such date. Owners of all existing buildings that are required to comply with the provisions of subdivision (c) of section 27-384 (power source of exit signs) shall file with the department, on or before July 1, 2007, a report of an architect or engineer certifying that all required exit and/or directional signs are connected to an emergency power source or to storage battery equipment in compliance with such subdivision except that no such report shall be required to be filed if an owner of a building submits an affidavit to the department, within

ninety days after October 22, 2004 certifying that all required exit and/or directional signs are connected to an emergency power source or to storage battery equipment as required by such subdivision. Such reports shall be on such forms and in such manner as prescribed by the commissioner. Failure to file such report by such dates shall be a violation of this section, which shall be punishable pursuant to section 26-125 of title twenty-six of the administrative code.

(b) (1) Owners of all buildings one hundred feet or more in height required to comply with the provisions of subdivision (a) of section 27-929.1 (sprinklers) shall file with the department on or before July 1,2019 a final report prepared by an architect or engineer certifying to the installation of the required sprinklers in accordance with such provisions and, pending the filing of such final report, such owner shall be required to file the following interim reports as described below. Failure to file such final report and/or, where required, such interim reports by the dates indicated or within any extended period of time granted by the commissioner pursuant to paragraph (2) of this subdivision shall be a violation of this section, which shall be punishable pursuant to section 26-125 of the code. Such reports shall be on such forms and in such manner as prescribed by the commissioner and shall be filed as follows:

Unless a final report is filed on or prior to such date, a one year report shall be filed no later than July 1, 2005.	The one year report shall contain an affidavit by the owner of the building acknowledging that sprinklers are required to be installed in such building on or before July 1, 2019 in compliance with subdivision (a) of section 27-929.1 of this code and indicating his or her intention to comply with such requirement.
Unless a final report is filed on or prior to July 1, 2011, a seven year report shall be filed no earlier than January 1, 2011 and no later than July 1, 2011.	Such seven year report shall contain a certification by an architect or engineer of the percentage of the building in which sprinklers have been installed as of the date of such report and an implementation plan prepared by such architect or engineer detailing when and how the remaining portions of the building will be made fully compliant.
Unless a final report is filed on or prior to July 1, 2018, a fourteen year report shall be filed no earlier than January 1, 2018 and no later than July 1, 2018.	Such fourteen year report shall contain a certification by an architect or engineer of the percentage of the building in which sprinklers have been installed as of the date of such report and an implementation plan, prepared by such architect or engineer detailing when and how the remaining portions of the building will be made fully compliant.
Except as otherwise provided in paragraph (2) of this subdivision, a final report shall be filed no later than July 1, 2019.	Such final report shall contain a certification by an architect or engineer that the building is fully compliant.

(2) Where the owner of a building is unable to comply with the requirements of subdivision (a) of section 27-929.1 on or before July 1,2019 because of undue hardship, and where such owner timely filed all interim reports as required in paragraph (1) of this subdivision and has obtained approval of all required applications, plans and permits relating to the required work, such owner may submit to the department an application for additional time to comply with such requirements. Such application shall be submitted to the department on or before July 1, 2018, along with supporting documents indicating the basis for such claim of undue hardship. The commissioner shall appoint a committee consisting of employees of the department and the fire department and a representative of the real estate industry to review such application. Such committee shall issue findings and recommendations relating to the application. After reviewing such findings and recommendations, if the commissioner finds that the owner has made a good faith effort to complete the required work and has substantiated his or her claim of undue hardship, the commissioner may grant an extension of time in which to complete the work and submit the final report.

*****Local Law 26-2004.***

***ARTICLE 27**
ALTERNATIVE PROCEDURE FOR CERTAIN PERMITS

27-228.6 Contract with not-for-profit corporation.- Notwithstanding any other provision of law, the commissioner may enter into a contract with a not-for-profit corporation described in section 27-228.7 to provide for the examination and approval of plans and the issuance of permits by such corporation on behalf of the department for the installation or alteration of plumbing and plumbing systems, including gas piping, as provided in article fifteen of this subchapter, and for the installation or alteration of fire suppression piping systems, as provided in article seventeen of this subchapter. Such contract shall require the not-for-profit corporation to agree to provide such services in conformity with sections 27-228.8, 27-228.9, 27-228.10, 27-228.11, 27-228.12, 27-228.13 and 27-228.14.

****27-228.7 Not-for-profit corporation.-** No contract shall be entered into pursuant to this article except with a not-for-profit corporation, a majority of the members of the board of directors of which are city officials. Such members shall include one person designated by the speaker of the council and officers or employees of the department and the fire department, serving ex officio, and such other persons as provided in the bylaws of such corporation. No such bylaws shall be adopted by such corporation prior to January 18, 1994. For the purposes of this article the term "corporation" shall mean a not-for-profit corporation as set forth in this section.
***Local Law 109-1993; Local Law 107-1993.*

27-228.8 Examination and approval of plans.-

(a) The corporation shall examine and approve plans in accordance with and in the manner prescribed by the provisions of the charter, the code and the rules of the department relating to the examination and approval of plans by the department, except as hereinafter provided.

(b) Except where authorized by the commissioner, the corporation shall not have the authority to designate

(c) portions of the examination of plans submitted by architects or engineers for limited supervisory check pursuant to section 27-143 of the code.

(d) All plans approved by the corporation shall be endorsed with the official seal of the corporation.

(e) The corporation shall use forms for applications which shall be prescribed by the commissioner.

27-228.9 Issuance of permits.-

(a) The corporation shall issue permits in accordance with and in the manner prescribed by the provisions of the charter, the code and the rules of the department relating to the issuance of permits by the department, except as hereinafter provided.

(b) Whenever work which requires a plumbing permit or a fire suppression piping system permit is a part of the construction of a new building or the alteration of an existing building, the corporation shall not issue such plumbing permit or fire suppression piping system permit until after the department has issued a new building permit or a building alteration permit to the applicant. The applicant shall submit to the corporation the final plans, approved by the department, for such new building or alteration and a copy of the new building permit or the building alteration permit issued by the department before the plumbing permit and/or the fire suppression piping system permit may be issued.

(c) The corporation shall act in accordance with guidelines which the commissioner shall establish under which the corporation shall defer the approval of plans or the issuance of permits pending appropriate action by other city agencies.

(d) The corporation shall not have the power to revoke any of the permits issued by the corporation but may recommend revocation to the commissioner. The commissioner may revoke permits issued by the corporation pursuant to section 27-197 of the code.

(e) All determinations of the corporation shall be subject to review by the board of standards and appeals to the same extent and in the same manner as if such determination were made by the department.

(f) All permits issued by the corporation shall bear the signature of the chief operating officer of the corporation.

27-228.10 Fees.- The corporation shall collect fees on behalf of the department for permits which the corporation issues. The disposition of such fees shall be governed by the contract between the corporation and the city.

27-228.11 Employment conditions.-

(a) The corporation shall require its salaried officers and employees to agree in writing:

(1) to refuse to accept gratuities in the performance of their duties for the corporation;

(2) to be subject to the restrictions set forth in chapter sixty-eight of the New York city charter; and

(3) to be subject to the restrictions upon outside work, employment and financial interests set forth in section 26-114 of the code.

(b) The corporation shall require its per diem employees and consultants to agree in writing to refuse to accept gratuities in the performance of their duties for the corporation.

(c) The corporation shall adopt disciplinary and other procedures to ensure compliance with such agreements.

27-228.12 Inspection.- With respect to the permits issued by the corporation, the corporation shall perform the inspections described in sections 27-208, 27-209 and 27-210 of the code. For such purpose, employees of the corporation shall be designated as authorized representatives of the commissioner pursuant to section 27-205 with authority to enter upon and examine and inspect at all reasonable times any building.

27-228.13 Records.- The corporation shall keep and maintain records relating to the services performed on behalf of the department in a manner and for such period of time as shall be agreed upon between the department and the corporation.

27-228.14 Corruption prevention program.- The corporation shall develop and implement a corruption prevention program to detect and punish corrupt conduct by employees in carrying out their duties on behalf of the corporation which shall not be less restrictive than the corruption prevention program for employees of the department. Such program shall provide for the dismissal of employees who are found to be engaged in corrupt activities, including the solicitation and acceptance of gratuities. The corporation shall not commence services pursuant to the contract until a plan for the implementation of such program has been reviewed and approved by the commissioner.

27-228.15 Performance review by the commissioner.- The commissioner shall establish such procedures for the audit, inspection, examination and review of services performed by the corporation on behalf of the department as may be necessary to ensure that the examination and approval of plans, the issuance of permits and conduct of inspections performed by the corporation are carried out in a manner consistent with the provisions of this article.

27-228.16 Jurisdiction of the fire department.- The provisions of this article shall not be construed to affect, alter or amend the jurisdiction of the fire department over the inspection and testing of plumbing and fire suppression piping systems.
Local Law 107-1993.

Footnote: The following §§ 1 and 10 are unconsolidated provisions of Local Law 7 of 1974 (see §27-160)
Section 1. the council finds that serious flooding and ponding problems exist in areas of the city of New York which are presently without adequate sewers for the disposal of storm water. The council further finds that these flooding and ponding problems endanger human life and cause substantial property damage. As the primary means of reducing these problems, the city of New York currently is engaged in an accelerated sewer construction program, approved by the council, of unprecedented scope. The city is also engaged in an active program of maintaining existing watercourses and other storm water disposal systems, pursuant to orders of the city's Board of Health. It is the expectation of the council that in the next twenty years the city sewer construction program will provide a large network of storm sewers for the areas of the city which presently lack them. In addition, however, the council recognizes that present construction of new buildings and developments without adequate storm water drainage in these unsewered areas is worsening existing flooding and ponding problems, and that the stringent storm drainage requirements for property owners set forth in this local law, which terminate December thirty-first, nineteen hundred ninety-three, are necessary as a temporary measure until the city has substantially advanced its accelerated sewer construction program.
§10. This local law shall take effect thirty days after it shall have become law. Its requirements insofar as they differ from or are additional to those of the administrative code of the city of New York in effect immediately prior to the effective date of this local law shall apply to the construction of all new buildings for which applications for new building permits have been filed on or after such effective date; provided, however, that such new of different requirements shall not apply to the construction of new buildings on specific sites for which schemes for storm water drainage have been approved by the environmental protection administration on or before such effective date if such construction lawfully commences within five years after such approval. A scheme for storm water drainage for the purpose of this section is an undetailed plan which shows the proposed drains, sewers and/or other means of storm water disposal, which the environmental protection administration normally require property owners to submit to it prior to the submission of a detailed plan for the construction of such facilities.
Effective date, May 16, 1974.

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SUBCHAPTER 2
DEFINITIONS

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ARTICLE 1 GENERAL

§[C26-200.1] 27-229 Application of terms.- The words and terms listed in this subchapter shall have the meanings given herein. Where terms are not defined they shall have their ordinarily accepted meanings or such as the context may imply.

§[C26-200.2] 27-230 Definitions in reference standards.- Definitions that appear in any building code reference standard shall apply to the provisions of that reference standard only.

§[C26-200.3] 27-231 Tense, gender, and number.- Words used in the present tense include the future; words used in the masculine gender include the feminine and neuter; words used in the singular include the plural, and the plural the singular.

*** ARTICLE 2 DEFINITIONS

****Italicized words within definitions are themselves defined elsewhere in this section.***

§[C26-201.0] 27-232 Definitions.-Words that are capitalized are defined in this section.

ACCESSORY BUILDING. -A *building*, the *use* or occupancy of which is incidental to that of the main *building.*

ACCESSORY USE.-A *use* or *occupancy* incidental to the principal *use* or *occupancy* of a *building.*

†**ACCESSIBLE**.-A building or portion thereof and the accessory public areas thereof are accessible when they comply with subarticle two of article two of subchapter four of chapter one of title twenty-seven of this code and can be approached, entered and used by people having physical disabilities.

†**ACCESSIBLE ROUTE**.-A continuous unobstructed path connecting all accessible spaces and rooms in a building that can be negotiated by all categories of people having physical disabilities. Interior accessible routes may include corridors, doorways, floors, ramps, elevators, lifts and clear floor space adjacent to fixtures. Exterior accessible routes may include parking access aisles, curb ramps, walks, ramps and lifts.

ACCESS STAIR.-A stair between two floors, which does not serve as a *required exit*. (See EXTERIOR STAIR and INTERIOR STAIR).

†**ADAPTABLE DWELLING UNITS**.-Dwelling units which are constructed on an accessible route and equipped as set forth in reference standard RS 4-6, so that they may be converted to be used, with a minimum of structural change, by all categories of people having physical disabilities.
†***Local Law 58-1987.***

ADDITION. An extension or increase in *floor area* or *height* of a *building* that increases its exterior dimensions.

ADJOINING GRADE ELEVATION.- The average elevation of the final *grade* adjoining all exterior *walls* of a *building*, calculated from grade elevations taken at intervals of ten feet around the perimeter of the *building*.

AIR CONDITIONING.-The process by which the temperature, humidity, movement, cleanliness, and odor of air circulated through a space are controlled simultaneously.

AIR-SUPPORTED STRUCTURE.-A *structure* consisting of skin diaphragms made of flexible material, which achieves its shape, support, and stability from internal air pressure.

ALLOWABLE SOIL PRESSURE.-The maximum stress permitted in soil of a given type and under given conditions.

ALLOWABLE STRESS.-The maximum stress permitted at a given point in a structural member under given conditions.

ALTERATIONS.- Any *addition*, or change or modification of a *building*, or the *service equipment* thereof, that affects safety or health and that is not classified as a *minor alteration* or *ordinary repair*. The moving of a *building* from one location or position to another *shall* be deemed an alteration.

AMUSEMENT ATTRACTION.- A game of chance or skill or similar activity in which the public participates as a form of amusement.

AMUSEMENT DEVICE.- A mechanically operated device or *structure*, open to the public, *used* to convey persons in any direction as a form of amusement.

APARTMENT HOUSE.-(See **MULTIPLE DWELLING**.)

††**APPROVED**.-When used in connection with plans, materials and equipment *shall* mean approved by the *commissioner;* when used in connection with materials and equipment, *shall* also mean previously approved by the *board*, unless such approval is amended or repealed by the commissioner; otherwise *shall* mean approved by the department or agency indicated by the text.
††***Local Law 49-1991.***

ARCHITECT.-A *person* licensed to practice the profession of architecture under the education law of the state of New York.

AREA OF REFUGE.-A floor area to which egress is made through a *horizontal exit* or *supplemental vertical exit.*

AREAWAY.-A space below *grade,* adjacent to a *building,* open to the outer air and enclosed by walls.

ASSEMBLY SPACE.-Any part of a *place of assembly,* exclusive of a stage, that is occupied by numbers of *persons* during the major period of *occupancy*. Every *tier of seating* shall be considered a separate assembly space.

ATRIUM.-A vertical opening or series of openings within a building connecting three or more floors, which may be covered at the top, and which is used for purposes other than an enclosed stairway, elevator hoistway or utility shaft.

ATTIC.-The space between the ceiling framing of the top most *story* and the underside of the *roof* framing.

AUTOMATIC.-As applied to an *opening protective, shall* mean a door, window, damper, or other device, and its assembly, which is normally open and is designed to close automatically when subjected to a predetermined temperature, rate of temperature rise, or abnormal smoke condition.

AUTOMATIC DRY STANDPIPE SYSTEM.- A *standpipe system* in which all piping is filled with air, either compressed or at atmospheric pressure. Water enters the system through a control valve actuated either automatically by the reduction of air pressure within the system or by the manual activation of a remote control located at each hose station.

AUTOMATIC DRY PIPE SPRINKLER SYSTEM.- A *sprinkler system* in which the piping up to the sprinkler heads is filled with air, either compressed or at atmospheric pressure, with the water supply controlled by a Type A or Type B *dry pipe valve*.

AUTOMATIC FIRE PUMP.-A pump that maintains a *required* water pressure in a fire extinguishing system and which is actuated by a starting device adjusted to cause the pump to operate when the pressure in the system drops below a predetermined pressure, and to stop the pump when the pressure is restored.

AUTOMATIC OPERATION.- As applied to an *elevator, shall* mean operation whereby the starting of the car is effected in response to the momentary actuation of operating devices at the landing, and/or of operating devices in the car identified with the landings, and/or in response to an automatic starting mechanism, and whereby the car is stopped automatically at the landings.

AUTOMATIC WET PIPE SPRINKLER SYSTEM.-A *sprinkler system* in which all piping and sprinkler heads are at all times filled with water under pressure which is immediately discharged when a sprinkler head operates, with the water continuing to flow until the system is shut off.

AUTOMOTIVE LIFT.-A vehicle-lifting device, the purpose of which is to raise an entire vehicle to provide accessibility for under-chassis service.

AUTOMOTIVE REPAIR SHOP.-A *building* or space in which *motor vehicles* are repaired.

AUTOMOTIVE SERVICE STATION.-A *building,* space, or *premises used* for the storage and sale of motor fuels, and which may also have facilities for lubrication, minor repairs, or washing of *motor vehicles.*

BACKFLOW (water supply).-The flow of water or other substances into the distribution pipes of a *potable water* supply from any source other than the intended source.

BALLOON FRAME.-Light timber *construction* in which the exterior *walls* consist of studs that are either continuous through floors or interrupted only by thickness of plates.

BASEMENT.-A *story* partly underground, but having less than one-half its clear height (measured from finished floor to finished ceiling) below the *curb level;* except that where the *curb level* has not been legally established, or where every part of the *building* is set back more than twenty-five feet from a *street line*, the height *shall* be measured from the *adjoining grade elevation* .(See CELLAR.)

BEARING.-As applied to a wall or *partition, shall* mean supporting any vertical load in addition to its own weight.

BELT-DRIVE MACHINE.-As applied to an *elevator, shall* mean an indirect-drive machine having a single belt or multiple belts as the connecting means.

BOARD.-The board of standards and appeals of the city of New York.

BOARDER (ROOMER, LODGER).- An individual living within a household who pays a consideration for such residence and does not *occupy* such space as an incident of employment therein.

BREEZEWAY.-A *structure* open to the outdoors consisting of a *roof,* roof supports, and floor, connecting a garage or other *accessory building* with a *dwelling.*

BUILDING.-An enclosed *structure* including *service equipment* therein. The term *shall* be construed as if followed by the phrase *"structure, premises,* or part thereof" unless otherwise indicated by the text.

BUILDING HOUSE DRAIN.-That part of the lowest piping of a *drainage system* that receives the discharge from the soil, waste, and other drainage pipes and conveys it to the *building house sewer* by gravity. The building house drain *shall* be considered to extend five feet outside the exterior wall of the *building*.

BUILDING HOUSE DRAIN (COMBINED).-A *building house drain* that conveys storm water in combination with *sewage* or other drainage.

BUILDING HOUSE DRAIN (SANITARY).-
A *building house drain* that carries *sewage* only.

BUILDING HOUSE DRAIN (STORM).-That part of the lowest piping of a storm *drainage system* that receives clear water drainage from *leaders,* surface run-off, ground water, subsurface water, condensate, cooling water, or other similar storm or clear drainage and conveys it to the *building house storm sewer* by

gravity. The building house storm drain *shall* be considered to extend five feet outside the exterior wall of the *building.*

BUILDING HOUSE SEWER.-That part of the horizontal piping of a drainage system that extends from the end of the *building house drain* and that receives the discharge of the *building house drain* and conveys it to a *public sewer, private sewer,* individual *sewage-disposal system,* or other point of disposal.

BUILDING HOUSE SEWER (COMBINED).- A *building house sewer* that conveys *sewage* in combination with storm water and other clear water wastes.

BUILDING HOUSE SEWER (SANITARY).- A *building house sewer* that carries sewage only.

BUILDING HOUSE STORM SEWER.-That part of the horizontal piping of a storm *drainage system* that extends from the *building house storm drain* to the public storm sewer, combined sewer, or other point of disposal.

BUILDING SECTION.-A room, floor, group of floors, wing, or any other portion of a *building* contained within *fire divisions.*

BUILDING SUB-HOUSE DRAIN.-That portion of a house *drainage system* that cannot drain by gravity into the *building house sewer*.

BULKHEAD.-An enclosed *structure* on or above the *roof* of any part of a *building,* enclosing a *shaft,* stairway, tank, or *service equipment,* or other space not designed or *used* for human occupancy. (See PENTHOUSE and ROOF STRUCTURE.)

CABARET.-The term cabaret shall mean any room, place or space in which any musical entertainment, singing, dancing or other similar amusement is permitted in connection with an eating and drinking establishment.

CABLEWAY.-A power operated system for moving loads in a generally horizontal direction in which the loads are conveyed on an overhead cable, track or carriage.

CAR DOOR OR GATE.-As applied to an *elevator*, *shall* mean the sliding portion of the car that closes the opening giving access to the car.

CAR DOOR OR GATE SWITCH.-As applied to an *elevator, shall* mean an electrical device, the function of which is to prevent operation of the driving machine by the normal operating device unless the car door or gate is in the closed position.

CAR-SWITCH OPERATION.- Operation of an *elevator* wherein the movement and direction of travel of the car are directly and solely under the control of the operator by means of a manually operated car switch or of continuous-pressure buttons in the car.

CASING-OFF.-The elimination of the frictional forces between a portion of a *pile* and the surrounding soil by use of a sleeve between the *pile* and the soil.

CATCH PLATFORM.- A platform or other *construction* projecting from the face of a *building,* supported therefrom, and *used* to intercept the fall of objects and to protect individuals and property from falling debris.

CELLAR.-A story partly or wholly underground, but having one-half or more of its clear height (measured from finished floor to finished ceiling) below the curb level; except that where the curb level has not been legally established, or where every part of the building is set back more than twenty-five feet from a street line, the height shall be measured from the adjoining grade elevation. Cellars shall not be counted as stories in measuring the height of buildings. (See BASEMENT.)

CERTIFICATE OF OCCUPANCY.- (See article twenty-two of subchapter one of this chapter.)

CHAIN-DRIVE MACHINE.-As applied to an *elevator, shall* mean an indirect-drive machine having a chain as the connecting means.

CHARGING CHUTE (INCINERATOR) . - An enclosed vertical passage through which refuse is fed to an incinerator.

CHARGING GATE (INCINERATOR) . - A gate in an incinerator *used* to control the flow of combustion gases into the *charging chute* and the entry of refuse into the combustion chamber.

CHIMNEY.-A vertical enclosure containing one or more *flues used t*o remove hot gases from burning fuel, refuse, or from industrial processes.

CHIMNEY CONNECTOR.-A pipe or metal breeching that connects combustion equipment to a *chimney*.

CITY.-The city of New York.

CLOSED SHAFT.-A shaft enclosed at the top.

COATINGS, FIRE-RETARDANT.- A material applied to the surface of a building material to improve its flame spread rating.

COLLECTING SAFE AREA.-A *safe area* that receives occupants from the *assembly space it serves*, as well as from other *safe areas.*

COMMISSIONER.-The commissioner of buildings of the city of New York, or his or her duly authorized representative.

COMPRESSOR (REFRIGERATION).-A machine used for the purpose of compressing a *refrigerant.*

CONCENTRATED LOAD.- A conventional representation of an element of *dead* or *live load* whereby the entire load is assumed to act either at a point or within a limited area.

CONCURRENT LOADS.-Two or more elements of *dead* or *live load* that, for purposes of design, are considered to act simultaneously.

CONSTRUCTION.-Any or all work or operations necessary or incidental to the erection, demolition, assembling, installing, or equipping of buildings, or any alterations and operations incidental thereto. The term "construction" *shall* include land clearing, grading, excavating, and filling. It *shall* also mean the finished product of any such work or operations.

CONSTRUCTION CLASS (GROUP).-The category in which a *building* or space is classified by the provisions of subchapter three of this chapter, based on the *fire-resistance ratings* of its *construction* elements.

CONSOLE LIFT.-A section of the *floor area* of a theater or auditorium that can be raised and lowered.

CONTRACTOR.-A *person* undertaking *construction*.

CONTROLLED INSPECTION.-(See section 27-132 of subchapter one of this chapter.)

CORRIDOR.-An enclosed public passage providing a means of access from rooms or spaces to an *exit.* (See EXIT PASSAGEWAY.)

COURT.-An *inner court* or *outer court*.

CRANE.-A machine for lifting or lowering a load and moving it horizontally which utilizes wire rope and in which the hoisting mechanism is an integral part of the machine.

CROSS AISLE.-An aisle in a *place of assembly* usually parallel to rows of seats, connecting other aisles or an aisle and an exit.

CROSS-CONNECTION (FIRE EXTINGUISHING SYSTEM).- Piping between risers and *siamese connections* in a *standpipe* or *sprinkler system.*

CROSS-CONNECTION (POTABLE WATER SYSTEM).- A physical connection or arrangement between two otherwise separate piping systems, one of which contains *potable water,* and the other of which contains water of questionable safety, or steam, gases, or chemicals whereby there can be a flow from one system to another.

CURB LEVEL.-The legally established level on the curb in *front* of a *building,* measured at the center of such *front.* When a *building* faces on more than one *street,* curb level *shall* mean the average of the legally established levels of the curbs at the center of each *front.*

CURB LINE.-The line coincident with the face of the *street* curb adjacent to the roadway.

DATUM.-(See section 27-158 of subchapter one of this chapter.)

DEAD END.-A portion of a *corridor* in which the travel to an *exit* is in one direction only.

DEAD LOAD.-Materials, equipment, *constructions,* or other elements of weight supported in, on, or by the *building* (including its own weight) that are intended to remain permanently in place.

DECIBEL.-A unit of measurement of the loudness of sound. A division of a logarithmic scale for expressing the ratio of two amounts of power or energy. The number of decibels denoting such a ratio is ten times the logarithm of the ratio.

DELUGE SPRINKLER SYSTEM.-An open head *sprinkler system* without water in the system piping, with the water supply controlled by an automatic valve operated by smoke or heat-responsive devices installed throughout the sprinklered area, and independent of the sprinkler heads.

DEMOLITION.-The dismantling or razing of all or part of a *building,* including all operations incidental thereto.

DEPARTMENT.-The department of buildings of the city of New York.

DERRICK.-An apparatus consisting of a mast or equipment members held at the top by guys or braces, with or without a boom, for use with a hoisting mechanism and operating ropes, for lifting or lowering a load and moving it horizontally.

DRAINAGE SYSTEM.-All the piping within public or private *premises,* which conveys *sewage,* rain water, or other liquid wastes to a legal point of disposal, but shall not include the mains of public sewer system or private or public sewage-treatment or disposal plant.

DRAFT CURTAIN.- A *noncombustible* curtain suspended in a vertical position from a ceiling for retarding the lateral movement of heated air, gases, and smoke along the ceiling in the event of fire.

DRAFT HOOD.-A device placed in and made part of a *chimney, vent connector,* or combustion equipment, to (1) insure the ready escape of the products of combustion in the event of no draft, back-draft, or stoppage beyond the draft hood, (2) prevent a back-draft from entering the equipment, or (3) neutralize the effect of excessive stack action of the *chimney flue* upon the operation of the equipment.

DRY PIPE VALVE.-A valve that automatically controls the water supply to a *sprinkler system* so that the system beyond the valve is normally maintained dry.

DUCT (VENTILATION) . - A pipe, tube, conduit, or an enclosed space within a wall or *structure*, used for conveying air.

DUMBWAITER.-A hoisting and lowering mechanism equipped with a car that moves in guides in a substantially vertical direction, the floor area of which does not exceed nine square feet, whose total inside height whether or not provided with fixed or movable shelves does not exceed four feet, the capacity of which does not exceed five hundred pounds, and that is used exclusively for carrying materials.

DWELLING.-Any *building occupied* in whole or in part as the temporary or permanent home or residence of one or more *families.*

DWELLING UNIT.-One or more rooms in a *dwelling* or building that are arranged, designed, *used* or intended for *use* by one or more *families.*

ELECTRICALLY SUPERVISED.-As applied to a control circuit, *shall* mean that in the event of interruption of the current supply or in the event of a break in the circuit, a specific signal will be given.

ELEVATOR.-A hoisting and lowering mechanism equipped with a car or platform that moves in guides in a substantially vertical direction, and that serves two or more floors of a *building.*

*****ELEVATOR VESTIBULE**.- A room or space enclosed with *noncombustible smoke barrier partitions* with smoke stop doors conforming to subdivision (c) of section 27-371. Except for such *smoke-stop doors,* openings to *elevators* and to *exits* shall be the only other door openings permitted in the enclosing *partitions*.
******Local Law 26-2004.***

EMERGENCY INTERLOCK RELEASE SWITCH.- As applied to an *elevator, shall* mean a device to make inoperative, in case of emergency, door or gate electric contacts or door interlocks.

ENGINEER.-A *person* licensed to practice the profession of engineering under the education law of the state of New York.

EQUIVALENT UNIFORM LOAD.- A conventionalized representation of an element of *dead* or *live load*, used for the purposes of design in lieu of the actual *dead* or *live load.*

ESCALATOR.-A power driven, inclined, continuous stairway used for raising or lowering passengers.

EXISTING BUILDING.-A building, whether high rise or low rise:

(1) Which on April first, nineteen hundred eighty-four is complete or under construction, or

(2) For which an application for approval of plans has been filed with the department prior to October first, nineteen hundred eighty-four and construction commenced prior to April first, nineteen hundred eighty-six, provided that those requirements of this code applicable to existing buildings classified in the same occupancy group as the proposed building shall be complied with in accordance with the time limitations set forth in this code.

EXISTING HIGH RISE BUILDING.-A building, classified as a high rise structure:

(1) Which on April first, nineteen hundred eighty-four is complete or under construction, or

(2) For which an application for approval of plans has been filed with the department prior to October first, nineteen hundred eighty-four and construction commenced prior to April first, nineteen hundred eighty-six, provided that those requirements of this code applicable to existing buildings classified in the same occupancy group as the proposed building shall be complied with in accordance with the time limitations set forth in this code.

(1)* EXISTING OFFICE BUILDING, ONE HUNDRED FEET OR MORE IN HEIGHT.-An office building one hundred feet or more in height or a building classified in occupancy group E, one hundred feet or more in height:

(1) which on January eighteenth, nineteen hundred seventy-three is complete or under construction, or

(2) for which plans have been filed before January eighteenth, nineteen hundred seventy-three and construction commenced on or before January eighteenth, nineteen hundred seventy-four, or

(3) for which plans are filed on or before January eighteenth, nineteen hundred seventy-four and construction commenced on or before January eighteenth, nineteen hundred seventy-five and further provided that all the requirements for such existing office buildings are fully complied with in the course of construction and before completion.

****As enacted but "(1)" probably intended to be omitted.***

*****EXIT.-** A means of egress from the interior of a *building* to an *open exterior space* which is provided by the use of the following, either singly or in combination: exterior door openings, *vertical exits*, *exit passageways*, *horizontal exits*, *interior stairs*, exterior stairs, fire towers or fire escapes; but not including *access stairs*, aisles, corridor doors or *corridors*.

******Local Law 26-2004.***

EXIT PASSAGEWAY.-A horizontal extension of a *vertical exit,* or a passage leading from a *yard* or *court* to an *open exterior space*.

EXTERIOR SEPARATION.-The shortest distance across an unobstructed outdoor space measured from the furthest projection of the exterior wall of a *building* to an *interior lot line* or to a line halfway between the wall and that of any other *building* on the same lot, or to the centerline of an adjacent *street* or other *public space.*

EXTERIOR STAIR.-A stair open to the outdoor air, that serves as a *required exit.* (See ACCESS STAIR and INTERIOR STAIR.)

FACING.-As applied to a *sign, shall* mean the surface of the *sign*, upon, against or through which the message of the *sign* is exhibited.

****FAMILY**.-A single individual; or two or more individuals related by blood or marriage or who are parties to a domestic partnership, and living together and maintaining a common household, with not more than four *boarders*, *roomers* or *lodgers*; or a group of not more than four individuals, not necessarily related by blood, marriage or because they are parties to a domestic partnership, and maintaining a common household.

*****Local Law 27-1998.***

FIRE ALARM.- A system, automatic or manual, arranged to give a signal indicating a fire emergency.

FIRE AREA.- A *floor* area enclosed by *fire divisions* and/or exterior walls.

FIRE CANOPY.- A solid horizontal projection, extending beyond the exterior face of a *building* wall, located over a wall opening so as to retard the spread of fire through openings from one *story* to another.

FIRE DISTRICTS.- The geographical territories established under subchapter four of this chapter for the regulation of *occupancy groups* and *construction classes* within such districts.

FIRE DIVISION.- Any construction, vertical, horizontal or otherwise, having the *required fire-resistance rating* and structural stability under fire conditions to provide a fire barrier between adjoining *buildings* or between adjoining or superimposed *fire areas* or *building sections* within the same *building.*

FIRE DOOR.-An *opening protective* in the form of a door and its assembly.

FIRE PROTECTION PLAN.-A report containing a narrative description of the life and fire safety systems and evacuation system for a structure, in accordance with section 27-228.2.

FIRE-PROTECTION RATING.-The time in hours or fractions thereof that an *opening protective* and its assembly will withstand fire exposure as determined by a fire test made in conformity with specified standards of subchapter five of this chapter.

FIRE-RESISTANCE RATING.-The time in hours or fractions thereof that materials or their assemblies will withstand fire exposure as determined by a fire test made in conformity with a specified standard of subchapter five of this chapter.

FIRE RETARDANT TREATED WOOD.-Wood that has been pressure impregnated with chemicals so as to reduce its combustibility.

FIRE SAFETY PLAN.-A description of the fire drill and evacuation procedures for a structure which is required to be submitted to the fire department in accordance with the requirements of section 27-4267 of the administrative code and the regulations of the fire Commissioner.

FIRE SECTION.-A sprinklered area within a *building* that is separated from other areas by *noncombustible* construction having a least a two-hour *fire-resistance rating.*

FIRE SEPARATION.-Any construction, vertical, horizontal, or otherwise, having the *required fire-resistance rating* to provide a fire barrier between adjoining rooms or spaces within a *building, building section,* or *fire area.*

FIRESTOP.- A solid or compact, tight closure to retard the spread of flames or hot gases within concealed spaces.

**FIRE SUPPRESSION PIPING SYSTEM*.- Any system including any and all equipment and materials in connection therewith the purpose of which is to control, to contain, to suppress or to extinguish fire.

****Local Law 107-1993.***

FIRE WALL.-A *fire division* in the form of a wall.

FIRE WINDOW.-An *opening protective* in the form of a window and its assembly.

FLAME SPREAD RATING.-The measurement of the comparative rate of propagation of flame over the surface of a material as determined by a fire test made in accordance with a specified standard in subchapter five of this chapter.

FLAMMABLE.-Capable of being easily ignited when exposed to flame, and which burns intensely, or has a rapid rate of flamespread.

FLASH POINT.-The lowest temperature at which a liquid gives off sufficient vapor to form an ignitable mixture with air near the surface of the liquid or within the vessel used.

FLOOR AREA.-The projected horizontal area inside of walls, *partitions*, or other enclosing *construction.*

FLOOR AREA (NET).-When used to determine the *occupant load* of a space, *shall* mean the horizontal occupiable area within the space, excluding the thickness of walls, and *partitions*, columns, furred-in spaces, fixed cabinets, equipment, and accessory spaces such as closets, machine and equipment rooms, toilets, stairs, halls, *corridors, elevators* and similar unoccupied spaces.

FLUE.-An enclosed passageway in a *chimney* to carry products of combustion to the outer air.

FOLDED PLATE.-An assembly consisting of one or more units, each unit of which is formed by two or more individually planar elements, termed plates, intersecting at angles.

FOOTING.-A *foundation* element consisting of an enlargement of a *foundation pier* or *foundation* wall, wherein the soil materials along the sides of and underlying the element may be visually inspected prior to and during its construction.

FOUNDATION (BUILDING).-A *construction* that transfers *building* loads to the supporting soil.

FOUNDATION PIER.-A *foundation* element consisting of a column embedded into the soil below the lowest floor to the top of a *footing* or *pile cap*. Where a pier bears directly on the soil without intermediate *footings* or *pile caps,* the entire length of the column below the lowest floor level *shall* be considered as a foundation pier. Foundation piers *shall* be limited to piers so constructed that the entire surface of the sides of the pier and the *bearing* material under the lower end of the pier can be visually inspected prior to or during *construction,* but which will be concealed in the final work. Piers below the lowest floor or *basement l*evel that will be exposed and open to inspection in the final work *shall* be considered as columns. Types of *construction* wherein the sides cannot be visually inspected *shall* be considered as piling.

FOUNDATION WALL.-A wall extending below *grade.*

FRAMEWORK.-As applied to a *sign, shall* mean the supports, uprights and bracing of the *sign.*

FRESH AIR.-Outdoor air.

FRONT. - As applied to *building* location on a *lot, shall* mean the distance between lines drawn through the most remote points of the *building* perimeter, projected at right angles to a *frontage space*.

FRONTAGE SPACE.-A *street*; or an open space outside of a *building*, not less than thirty feet in any dimension, that is accessible from a *street* by a driveway, lane, or alley at least twenty feet in width, and that is permanently maintained free of all obstructions that might interfere with its use by the fire department.

FRONT YARD.-A *yard* extending along the full length of a *street line.*

GAS DISTRIBUTION PIPING.-All piping from the house side of the *gas meter piping* that distributes gas supplied by a public utility to all fixtures and apparatus used for illumination or fuel in any *building*.

GAS METER PIPING.-The piping from the gas service line valve to the outlet of the meter regulator set or the meter if no regulator is required.

GAS PIPING SYSTEMS.-The gas service piping, meter piping and distribution piping.

GAS SERVICE LINE VALVE.-The valve located at or below grade on the supply side of the meter or service regulator, if a service regulator is required. If a plug type valve is used it shall be constructed so as to prevent the core from being blown out by the pressure of the gas. In addition, it shall be of a type capable of being locked in the off position by the local gas utility.

GAS SERVICE PIPING.-The supply piping from the street main up to and including the gas service line valve.

GRADE.-The finished surface of the ground, either paved or unpaved.

GRADE BEAM.- A beam, at, near, or below *grade*, spanning between footings, *pile caps* or *foundation piers*, and supporting walls or other elements of a *building.*

GRANDSTAND.- A *structure used* to support spectators, either standing or seated, usually outdoors.

GROUND SIGN.- A *sign* supported by uprights or braces in or upon the surface of the ground.

GROUP HOME- A facility for the care and maintenance of not less than seven nor more than twelve children, operated pursuant to subdivision (c) of section three hundred seventy-four of the social services law, or other provisions of applicable laws, and supervised by the New York state board of social welfare.

****HABITABLE ROOM**.-A residential room or space, having the minimum dimensions required by section 27-751 of article six of subchapter twelve of this chapter in which the ordinary functions of domestic life are carried on, and which includes bedrooms, living rooms, studies, recreation rooms, kitchens, dining rooms and other similar spaces, but does not include closets, halls, stairs, laundry rooms, or bathrooms.

*****Chapter 559,Laws of 1995.***

HEIGHT (BUILDINGS).-The vertical distance from the *curb level* to the highest point of the *roof beams* in the case of flat roofs, or to a point at the average height of the gable in the case of roofs having a pitch of more than one foot in four and one-half feet; except that where the *curb level* has not been legally established, or where every part of the building is set back more than twenty-five feet from a *street line*, the height *shall* be measured from the *adjoining grade elevation.*

HEREAFTER.-On or after the effective date of this code.

HERETOFORE.-Before the effective date of this code.

HIGH RISE.-A structure seventy-five feet or more in height.

HOISTWAY.-An enclosed or partly enclosed *shaft* used for the travel of an *elevator, dumbwaiter*, platform or bucket.

HOISTWAY DOOR.-As applied to an *elevator shall* mean the hinged or sliding portion of a *hoistway* enclosure, which closes the opening giving, access to a landing.

HOISTWAY DOOR INTERLOCK.-A device used to prevent the operation of the driving machine of an *elevator* by the normal operating device unless the *hoistway door* is locked in the closed position, and also used to prevent the opening of the *hoistway door* from the landing side unless the car is within the landing zone and is either stopped or being stopped.

***HOISTING MACHINE.-**A power operated machine used for lifting or lowering a load utilizing a drum and wire rope, excluding elevators. This shall include but not be limited to a crane, derrick and cableway.

****As enacted but this definition probably intended to follow definition of "HIGH RISE".***

HORIZONTAL EXIT.-(See Section 27-373 of article five of subchapter six of this chapter.)

ILLUMINATED SIGN.-A sign designed or arranged to give forth or reflect light from an attached artificial source.

IMPACT LOAD.-A kinetic load of short duration such as that resulting from moving machinery, *elevators*, craneways, vehicles, etc.

INDEPENDENT POLE SCAFFOLD.-A scaffold supported by multiple rows of uprights, and not depending on the *building* for support.

INDIRECT WASTE PIPE.-A drain pipe used to convey liquid wastes which does not connect directly with the *drainage system*, but which discharges into the house *drainage system* through an air break into a *trap*, fixture, receptacle, or interceptor.

INDUSTRIAL LIFT.- A hoisting and lowering mechanism of a nonportable power-operated type for raising or lowering material vertically, operating entirely within one *story* of a *building.*

INDUSTRIAL WASTE.- Liquid, gaseous or solid substances, or a combination thereof, resulting from any process of industry, manufacturing, trade or business, or from the development or recovery of any natural resource.

INNER COURT.-Any open area, other than a *yard* or portion thereof, that is unobstructed from its lowest level to the sky and that is bounded by either *building walls*, or *building walls* and one or more *lot lines* other than a *street line* or *building walls*, except for one opening on any open area along an *interior lot line* that has a width of less than thirty feet at any point.

INTERIOR LOT LINE.-A *lot line* other than a *street line.*

INTERIOR STAIR.-A stair within a *building*, that serves as a *required exit.* (See **ACCESS STAIR** and **EXTERIOR STAIR**.)

LAGGING (PILE).-Pieces of timber or other material attached to the sides of *piles* to increase resistance to penetration through soil.

LAMELLA.-*Shell construction* in which the *shell* is formed by a lattice of interlacing members.

LANDING DOOR.-(See HOISTWAY DOOR.)

LEADER.-A vertical drainage pipe for conveying storm water from *roof* or gutter drains to a *building house storm drain, building house drain (combined),* or other means of disposal. The leader *shall* include the horizontal pipe to a single *roof* drain or gutter drain.

LESSEE.-The *person* in possession of a *building* under a lease from the owner thereof.

LICENSE.- A *written* document issued by the *commissioner* authorizing a *person* to perform specific acts in or in connection with the *construction* or *alteration* of *buildings*, or the installation, *alteration*, and *use* and operation of *service equipment* therein.

LIVE LOAD. - All occupants, materials, equipment, *constructions* or other elements of weight supported in, on or by a *building* that will or are likely to be moved or relocated during the expected life of the *building.*

LOAD-BEARING.-(See BEARING.)

LOADING RAMP.-A hinged, mechanically operated lifting device *used* for spanning gaps and/or adjusting heights between loading surfaces, or between loading surfaces and carriers.

LODGER.-(See BOARDER.)

LOT.-A portion or parcel of land considered as a unit. A zoning lot.

LOT LINE.-A line dividing one land unit from another, or from a *street* or other public space. A boundary line of a zoning *lot.*

LOW RISE.-A structure less than seventy-five feet in height.

MALL.-An enclosed or roofed area used as a pedestrian circulation space and connecting no more than three stories or portions of stories of a building or buildings housing single and/or multiple tenants.

MANUAL FIRE PUMP.-A pump that feeds water into a fire extinguishing system that must be started by either the building personnel or members of the fire department.

MARQUEE SIGN.-A *sign* placed flat against the front or side fascia of a marquee.

MECHANICAL VENTILATION.-The process of introducing outdoor air into, or removing vitiated air from a *building* by mechanical means. A mechanical ventilating system may include air heating, air cooling, or *air conditioning* components.

MECHANIZED PARKING GARAGE EQUIPMENT.-Special devices in mechanical parking garages that operate in either stationary or horizontal moving hoistways, that are exclusively for the conveying of automobiles, and in which no *persons* are normally stationed on any level other than the receiving level and in which each automobile during the parking process is moved by means of a power driven transfer device, on and off the elevator directly into parking spaces or cubicles.

MEZZANINE.-An intermediate floor between the floor and ceiling of any space. When the total gross *floor area* of all mezzanines occurring in any story exceeds thirty-three and one-third percent of the gross *floor area* of that story such mezzanine shall be considered as a separate story.

MINOR ALTERATIONS.-(See Section 27-124 of article five of subchapter one of this chapter.)

MORTAR (GROUT).-A mixture of cementitious materials, fine-aggregates and water.

MOTOR VEHICLE.-A conveyance propelled by an internal combustion engine and having a fuel storage tank capacity of more than two gallons.

MOVING WALK.-A passenger-carrying device on which *persons* stand or walk, and in which the passenger-carrying surface remains parallel to its direction of motion and is uninterrupted.

MULTIPLE DWELLING.-A building containing three or more *dwelling units.* Multiple dwelling shall not be deemed to include a hospital, school, convent, monastery, asylum or other public institution.

NONAUTOMATIC SPRINKLER SYSTEM.-A *sprinkler system* in which all pipes and sprinkler heads are maintained dry and which is supplied with water through a fire department *siamese connection*.

NONAUTOMATIC STANDPIPE SYSTEM.- A *standpipe system* in which all piping is maintained dry, and which is supplied with water through a fire department *siamese connection.*

NONBEARING.-As applied to a wall or *partition, shall* mean one that supports no vertical load other than its own weight.

***NONCOMBUSTIBLE.-**A material which, in the form in which it is used in construction, will not ignite and burn when subjected to fire. However, any material which liberates flammable gas when heated to any temperature up to one thousand three hundred eighty degrees Fahrenheit for five minutes shall not be considered noncombustible. No material shall be considered noncombustible which is subject to increase in combustibility beyond the limits established above, through the effects of age, fabrication or erection techniques, moisture, or other interior or exterior atmospheric conditions.

****Local Law 13-1987.***

NONCURRENT LOADS.-Two or more elements of *dead* or *live* load which, for purposes of design, are considered not to act simultaneously.

NONLOADBEARING.-(See NONBEARING.)

OCCUPANCY.-The purpose or activity for which a *building* or space is *used* or is designed or intended to be *used*.

OCCUPANCY GROUP.-The category in which a building or space is classified by the provisions of subchapter three of this chapter, based on its occupancy or use.

OCCUPANT LOAD.-The number of occupants of a space, floor or *building* for whom exit facilities shall be provided.

OCCUPIABLE ROOM.-A room or space, other than a *habitable room* designed for human *occupancy* or *use*, in which *persons* may remain for a period of time for rest, amusement, treatment, education, dining, shopping, or other similar purposes, or in which occupants are engaged at work.

OCTAVE.-The interval between two sounds having a basic frequency ratio of two. By extension, the octave is the interval [*sic*] between any two frequencies having the ratio 2:1. The standard octave bands are:

	FREQUENCY (CPS)							
Mid-Frequency	63	125	250	500	1000	2000	4000	8000
Approximate Frequency Limits								
Lower	45	90	180	355	710	1400	2800	5600
Upper	90	180	355	710	1400	2800	5600	11120

****OFFICE BUILDING.-**A *building* constructed pursuant to the code in effect prior to December 6, 1968 in which the main use or dominant occupancy is offices or a *building* classified in *occupancy group* E.

*****Local Law 26-2004.***

OIL BUFFER.-As applied to an *elevator,* shall mean a buffer using oil as a medium which absorbs and

dissipates the kinetic energy of a descending car or counterweight.

OPEN EXTERIOR SPACE.-A *street* or other *public space;* or a *yard*, *court*, or *plaza* open on one or more sides and unroofed or open on all sides, which provides egress to a street or public space.

OPEN PARKING LOT.-A *lot*, or portion thereof, *used* for the storage or sale of more than four *motor vehicles*, but not *used* for the repair or servicing of such vehicles.

OPEN PARKING STRUCTURE.-A structure open to the outdoors fifty percent or more on two or more sides of *each story*, *used* for the parking of *motor vehicles*.

OPEN SHAFT.-A *shaft* open to the outdoor air at the top.

OPENING PROTECTIVE.-An assembly of materials and accessories, including frames and hardware installed in an opening in a wall, *partition*, floor, ceiling or *roof* to prevent, resist, or retard the passage of flame, smoke or hot gases.

ORDINARY REPAIRS.-(See section 27-125 of this chapter.)

OUTER COURT.-Any open area, other than a *yard* or portion thereof, that is unobstructed from its lowest level to the sky and that, except for an outer court opening upon a *street line*, a *front yard*, or a *rear yard*, is bounded by either *building* walls or *building* walls and one or more *lot lines* other than a *street line.*

OUTRIGGER SCAFFOLD.-A scaffold, the platform of which is built upon supports cantilevering beyond the walls of the *building*.

OUTSIDE GAS SERVICE LINE VALVE.-The valve located on the gas service piping which can be either exposed or buried.

OWNER.-A *person* having legal title to *premises;* a mortgagee or vendee in possession; a trustee in bankruptcy; a receiver or any other *person* having legal ownership or control of *premises*.

PARAPET.-The continuation of an exterior wall, fire wall, or party wall above the roof line.

PARKING TIER.-A general level of parking.

PARTITION.-A vertical unit or assembly of materials that separates one space from another within any *story* of a *building*.

PARTY WALL.-A *fire division* on an interior lot line common to two adjoining buildings.

PENTHOUSE.-An enclosed *structure* on or above the roof of any part of a building, which is designed or used for human occupancy. (See BULKHEAD and ROOF STRUCTURE.)

PERMIT.-A *written* document issued by the *commissioner* authorizing the *construction*, *alteration*, or *demolition* of a *building*, or the installation, *alteration* or *use* and operation of *service equipment* therein.

PERSON.-An individual, partnership, corporation, or other legal entity.

***PHYSICAL DISABILITY**.-Any of the following:

(a) impairment requiring use of a wheelchair; or

(b) impairment causing difficulty or insecurity in walking or climbing stairs or requiring the use of braces, crutches or other artificial supports; or impairment caused by amputation, arthritis, spastic condition or pulmonary, cardiac or other ills rendering the individual semi-ambulatory; or

(c) total or partial impairment of hearing or sight causing insecurity or likelihood of exposure to danger in public places; or

Local Law 58-1987.

(d) impairment due to conditions of aging and incoordination. The term"physical handicap" shall have the same meaning as the term "physical disability" and the phrase people having "physical disabilities" shall include those having one or more physical disabilities.

PILE.-A structural element introduced into the ground to transmit loads to lower strata and of such construction that the material underlying the base of the unit or along the sides cannot be visually inspected.

PILE CAR.-A construction encasing the heads of one or more piles which transfers loads to the *pile* or *piles*.

*** PLACE OF ASSEMBLY**.-An enclosed room or space in which seventy-five or more persons gather for religious, recreational, educational, political or social purposes, or for the consumption of food or drink, or for similar group activities or which is designed for use by seventy-five or more persons gathered for any of the above reasons, but excluding such spaces in dwelling units; or an outdoor space in which two hundred or more persons gather for any of the above reasons or which is designed for use by two hundred or more persons gathered for any of the above reasons.

Local Law 23-1990.

PLASTIC.-A material that contains as an essential ingredient an organic substance of large molecular weight, is solid in its finished state and, at some stage in its manufacture or its processing into finished articles, can be shaped by flow.

PLASTIC, SLOW BURNING.-A *plastic* having a rate of combustion within the limits of a specified standard of subchapter five of this chapter.

PLATFORM FRAME.-Light timber *construction* in which the exterior walls and bearing walls consist of studs which are interrupted at floors by the entire thickness of the floor *construction.*

PLUMBING.-The practice, materials, and fixtures used in the installation, maintenance, extension, and *alteration* of all piping, fixtures, appliances, equipment, and appurtenances in connection with any of the following: sanitary drainage or storm drainage facilities, the venting system and the public or private water supply systems, within or adjacent to any *building*; also the practice and materials used in the installation, maintenance, extension, or *alteration* of storm water, liquid-waste, or sewerage, and water-supply systems of any *premises* and their connection with any point of public disposal or other acceptable terminal.

PLUMBING FIXTURES.-Installed receptacles, devices, or appliances that are supplied with water or which receive or discharge liquids or liquid-borne wastes.

PLUMBING SYSTEM.- The water-supply and distribution pipes; plumbing fixtures and traps; soil, waste, and vent pipes; *building house drains* and *building house sewers* including their respective connections, devices, and appurtenances within the property lines of the *premises;* and water-treating or water-using equipment.

POLE FOOTING.-A type of *construction* in which a pole embedded in the ground and extending upward to form a column is used for both column and *footing.*

PONDING.-The collection of rainwater.

***POTABLE WATER**.-Water free from impurities present in amounts sufficient to cause disease or harmful physiological effects. Its bacteriological and chemical quality shall conform to the requirements of the department of health and mental hygiene.

****Local Law 22-2002***

POWER-OPERATED SCAFFOLD.-Any form of scaffold that is propelled vertically by the use of power machinery.

PREMISES.-Land, improvements thereon, or any part thereof.

*****PRIMARY ENTRANCE(S)**.-

The principal entrance(s) to a building primarily and expressly utilized for day-to-day pedestrian ingress and egress. Side, rear and other entrances solely used for freight and service shall not constitute a primary entrance.

******Local Law 58-1987.***

PRIVATE GARAGE.-A *building* or enclosed space used for the parking or storage of not more than four *motor vehicles* having fuel storage tanks of twenty-six gallon capacity or less, and in which no repair, body work, or painting of vehicles is conducted, and in which no gasoline, oil, or similar products are dispensed.

PRIVATE SEWER.-A sewer privately owned and controlled by public authority only to the extent provided by law.

PROJECTING SIGN.-A *sign* affixed to an exterior wall of a building and extending more than fifteen inches beyond the wall surface.

PUBLIC AREAS.-Area(s) within a building usually open to or used by the general public, such as lobbies, corridors, waiting rooms, reception rooms, rest rooms, etc.

PUBLIC GARAGE.-A *building* or space used for the parking or storage of *motor vehicles*, other than an *automotive service station, automotive repair shop, open parking structure, or private garage.* Truck loading and shipping areas shall be classified as public garages.

PUBLIC SEWER.-A sewer entirely controlled by public authority.

PUBLIC SPACE.-An open space outside of a *building,* which is dedicated or devoted to public use by lawful mapping or by any other lawful procedure.

PURE TONE.-A soundwave of a single frequency, so called to distinguish it from a complex tone.

REAR LOT LINE.-Any *lot line*, except a *street line*, that is parallel or within forty-five degrees of being parallel to, and does not intersect any *street line* bounding such *lot.*

REAR YARD.-A *yard* extending for the full length of a *rear lot line.*

REBOUND.-Recovery of displacement due to release or reduction of applied load.

REFRIGERATION.-The process by which heat is absorbed from a substance by expansion or vaporization of a refrigerant.

REQUIRED.-Shall mean required by the provisions of this code.

RETAINING WALL.-A wall designed to prevent the lateral displacement of soil or other materials.

RIGGING LOFT.-A space above a stage, designed and used for the flying and storage of *scenery and scenic elements.* A space used for the occasional flying of incidental props during a performance shall not be deemed to constitute a rigging loft.

ROOF.-The topmost slab or deck of a *building,* either flat or sloping, with its supporting members, not including vertical supports.

ROOF COVERING.-The covering applied to the exterior surface of a *roof* for weather resistances, fire resistance, wear, and/or appearance, but not including insulation.

ROOF SIGN.-A *sign* erected and maintained on or above the *roof* of a *building*.

ROOF STRUCTURE.-An unenclosed *structure* on or above the *roof* of any part of a *building.* (See BULKHEAD and PENTHOUSE.)

ROOMER.-(See BOARDER.)

SAFE AREA.-An interior or exterior space that serves as a means of egress by providing a transitional area from, and that also serves as a normal means of entry to, an *assembly space*.

SAFETY (CAR OR COUNTERWEIGHT).- A mechanical device attached to an *elevator* car frame or to an auxiliary frame, or to the counterweight frame, to stop and hold the car or counterweight in case of predetermined overspeed or free fall, or if the hoisting ropes slacken.

SCENERY AND SCENIC ELEMENTS.-Any or all of those devices ordinarily used on a stage in the presentation of a theatrical performance, such as back drops, side tabs, teasers, borders or scrim, rigid flats, set pieces, and all properties, but not including costumes.

SCHOOL.-An elementary school, high school, or college, either public or private.

SEATING SECTION.-An area of seating bounded on all sides by aisles, *cross aisles,* walls or *partitions.*

SELF-CLOSING.-As applied to an *opening protective shall* mean a door, window, damper, or other device, and its assembly that is normally kept in a closed position and that is equipped with an *approved* device to insure immediate closing after having been opened for use.

SELF-RELIEVING CONSTRUCTION.- *Construction* using a type of framing in which the connections are capable of developing a known and dependable moment capacity but which, under larger moments, are capable of rotating (without fracture) an amount sufficient to accommodate the deflection due to the excess of the applied moment over the moment capacity.

SERVICE EQUIPMENT.-Equipment, including all components thereof, which provides sanitation, power, light, heat, cooling, ventilation, air-conditioning, refuse disposal, fire-fighting, transportation, or similar facility for a building which by design becomes a part of the *building*, and which is regulated by the provisions of this code.

SEWAGE.-Any liquid waste containing animal or vegetable matter in suspension or solution, and may include liquids containing chemicals in solution.

SEWAGE DISPOSAL SYSTEM.-A system for the disposal of *sewage* by means of a septic tank, cesspool, or mechanical treatment, all designed for use apart from a *public sewer* to serve a single establishment, *building*, or development.

SEWAGE EJECTOR.-A mechanical device used to pump or eject *sewage*.

SHAFT.-A vertical, inclined, or offset passage, or *hoistway*, penetrating through two or more floors of a *building* or through a floor and *roof*. (See CLOSED SHAFT and OPEN SHAFT.)

SHALL.-As used in this code, is always to be construed as mandatory.

SHELL.-A *structure* consisting of a curved or folded slab whose thickness is small compared to its other dimensions, and which is characterized by its three dimensional load-carrying behavior. The term *shall* include those forms of *construction* that approximate slab surfaces, such as *lamellas* and lattices.

SIAMESE CONNECTION.-A fitting connected to a fire extinguishing system and installed on the outside of a *building*, with two hose inlets for use of the fire department, to furnish or supplement the water supply to the system.

SIDE LOT LINE.-Any *lot line* that is not a *street line* or a *rear lot line*.

SIDEWALK ELEVATOR.-A freight *elevator* that operates between a sidewalk or other area outside of a *building* and floor levels inside the *building* below such area which has no landing opening into the *building* at its upper limit of travel, and which is not used to carry automobiles.

SIDE YARD.-A *yard extending* along a *side lot line* from the *required front yard* (or from the *street line* if no *front yard* is *required*) to the *required rear yard* (or to the *rear lot line if* no rear yard is *required*).

SIDEWALK SHED.-A construction over a public sidewalk, used to protect pedestrians from falling objects.

SIGN.-An outdoor *structure*, banner or other device, designed or *used* as an advertisement, or announcement for the information or attraction of the public; consisting of the *framework* and all letters, words, numerals, illustrations, illumination, decorations, trade marks, emblems, symbols or other figures or characters.

SINGLE POLE SCAFFOLD.-A platform resting on putlogs or crossbeams, the outer ends of which are supported on ledgers secured to a single row of posts or uprights, and the inner ends of which are supported by a wall.

*****SMOKE BARRIER.-** Any continuous *non-combustible construction*, vertical, horizontal, or otherwise, such as a wall, floor, or ceiling assembly, that is designed and constructed to restrict the spread of smoke and constructed in accordance with the provisions of section 27-353.3 of this code.

******Local Law 26-2004.***

SMOKE-STOP DOOR.-A door or set of doors placed in a *corridor* to restrict the spread of smoke and to retard the spread of fire by reducing draft.

SOIL VENT.-(See STACK VENT.)

SOUND POWER.-The rate at which sound energy is radiated by a source.

SOUND POWER LEVEL.-The ratio, expressed in *decibels*, [*sic*] of the *sound power* of a source to the reference power of ten-thirteen watts.

SOUND PRESSURE LEVEL.-The square ratio, expressed in decibels, of a sound pressure to a reference pressure of 0.0002 dynes per square centimeter.

SPANDREL WALL.-That portion of an exterior wall between the top of one opening and the bottom of another in the *story* directly above.

SPARK ARRESTER.-A device to prevent sparks, embers, or other ignited material above a given size from being expelled to the atmosphere from the top of a *chimney*.

SPECIAL WASTE.-Wastes that require special treatment before entry into the normal *plumbing system*.

SPRAY BOOTH.-A compartment in which spraying with any substance is carried on, consisting of at least two sides, a back, and a top.

SPRAYING SPACE OR DIPPING SPACE.-Any portion of a *building* in which the actual work of spraying, dipping, or immersing any article with or into *flammable* substances takes place.

SPRINKLER ALARM.-An apparatus constructed and installed so that a flow of water through the sprinkler system equal to, or greater than, that required for a single automatic sprinkler head will cause an alarm to be given.

SPRINKLER SYSTEM.-A system of piping and sprinkler heads connected to one or more sources of water supply.

STACK.-(See CHIMNEY.)- Also, a general term applying to any vertical line of soil, waste, vent, or inside leader piping. It shall not include vertical fixture and vent branches that do not extend through the *roof* or that pass through not more than two *stories* before being reconnected to the *vent stack* or *stack vent*.

STACK VENT.-The extension of a soil or waste stack above the highest horizontal drain connected to a plumbing *stack*.

STAGE.-An area used in the presentation of a live performance at anytime and includes: the performing area and non-audience areas that are open to the performing area. It may be level or raised with or without scenic elements, and generally is serviced by stage illumination appliances and control panels. For places of assembly classified as occupancy group F-1A or F-1B, the word stage shall be defined in accordance with the definition set forth in sections 27-546 and 27-547 of article three of subchapter eight of this code.

STAGE LIFT.-A movable section of a stage floor, designed to carry scenery between staging areas and the stage, and also *used* to be raised to and temporarily retained at elevations above or below the stage level.

STANDPIPE SYSTEM.-A system of piping, for fire-fighting purposes, consisting of connections to one or more sources of water supply, and serving one or more hose outlets.

STORM DRAIN.-(See BUILDING STORM DRAIN.)

STORM SEWER.-A sewer used for conveying rain water, surface water, condensate, cooling water, or similar clear liquid wastes which do not contain organic materials or compounds subject to decomposition.

STORY.-That portion of a *building* that is between a floor level and the next higher floor level or *roof* above.

STREET.-A thoroughfare dedicated or devoted to public use by legal mapping or other lawful means.

STREET FLOOR.-A floor, usually the principal entrance floor, that is not more than one-half *story* above or below *grade* at the location from which egress is provided to the *street*.

STREET LINE.-A *lot line* separating a *street* from other land.

STREET MAIN.-(See WATER MAIN and GAS SERVICE PIPING.)

STRUCTURE.-An assembly of materials forming *construction* for *occupancy* or *use*, including among others: *buildings*, stadia, tents, reviewing stands, platforms, stagings, observation towers, radio towers, tanks, trestles, open sheds, coal pockets, shelters, fences, and display *signs*.

SUBSTRATE.-A surface upon which a finish material is directly applied and which extends completely behind such finish material.

SUMP PIT.-A tank or pit that receives clear liquid wastes that do not contain organic materials or compounds subject to decomposition, located below the normal grade of the gravity system and that must be emptied by mechanical means.

SUMP PUMP.-A mechanical device used to pump the liquid waste from a *sump pit* into the gravity *drainage system*.

SUPPLEMENTAL VERTICAL EXIT.-An enclosed stair, ramp or *escalator* providing means of egress to an area of refuge at another level nearer to the *street floor*.

THIS CODE.-The building code.

TIER OF SEATING.-A general level of seating, such as an orchestra (usually the main tier), a balcony, or gallery.

TRAILER CAMP.-A *lot* or parcel of land used for temporary or permanent *occupancy* by two or more mobile homes or travel trailers.

TRANSFER COLUMN.-A column supported by beams, girders, trusses or similar members and reacting on two or more columns at a lower level.

UNIFORMLY DISTRIBUTED LOAD.- A conventionalized representation of an element of *dead* or *live load* as a load of uniform intensity, distributed over an area.

***USABLE DWELLING UNITS.-**Dwelling units which are accessible, constructed and equipped as set forth in reference standard RS 4-6, so as to be usable by all categories of people having physical disabilities.

****Local Law 58-1987.***

USE (USED).-The purpose for which a *building, structure,* or space is *occupied* or utilized, unless otherwise indicated by the text. Use (used) *shall* be construed as if followed by the words "or is intended, arranged, or designed to be used".

VAULT (SIDEWALK).-Any space below the surface of the sidewalk portion of a *street*, that is covered over, except those openings that are used exclusively as places for descending, by means of steps, to the *cellar* or *basement* of any *building*.

VENT (GAS).-A *flue* or *duct*, used to convey the products of combustion from gas-fired equipment to the outdoor air by natural draft.

VENT STACK (PLUMBING).-A vertical vent pipe extending through more than two *stories*, which is then connected to a *stack vent* or is otherwise extended through the *roof*, installed primarily for the purpose of providing circulation of air to and from any part of a *drainage system.*

VENT SYSTEM (COMBUSTION).-A *gas vent* or *chimney*, together with a *vent connector* that forms a continuous unobstructed passageway from gas burning equipment to the outdoor air for the purpose of removing *vent gases*.

VENT SYSTEM (PLUMBING).-A pipe or pipes installed to provide a flow of air to or from a *drainage system* or to provide a circulation of air within such system to protect *trap seals* from siphonage and back pressure.

VERTICAL EXIT.-A stair, ramp, or *escalator* serving as an *exit* from one or more floors above or below the street floor.

WALL SIGN.-A *sign* affixed to the exterior wall of a *building*, no part of which projects more than fifteen inches from the wall surface.

WATER-DISTRIBUTION PIPING.-The pipes in a *building* or *premises* that convey water from the *water service pipe* to the *plumbing fixtures* and other water outlets.

WATER (STREET) MAIN.-A water-supply pipe for public or community use controlled by public authority.

WATER-SERVICE PIPE.-The pipe from the *water (street) main* or other source of water supply to the *building* served.

WATER SUPPLY SYSTEM.-The *water-service pipe,* the *water-distribution piping*, and all of the necessary connecting pipes, fittings, control valves, and appurtenances used for conveying water in a *plumbing system.*

WET STANDPIPE SYSTEM.-A *standpipe system* in which all of the piping is filled with water under pressure that is immediately discharged upon the opening of any hose valve.

WINDING-DRUM MACHINE.-As applied to an *elevator, shall* mean a geared-drive machine in which the hoisting ropes are fastened to and wind on a drum.

WORKERS' HOIST.-A hoisting and lowering mechanism equipped with a car that moves in guides in a substantially vertical direction and that is used primarily for raising and lowering workers to the working levels.

WRITING (WRITTEN).-The term *shall* be construed to include handwriting, typewriting, printing, photo-offset, or any other form of reproduction in legible symbols or characters.

WRITTEN NOTICE.-A notification in *writing* delivered by hand to the *person* or parties intended, or delivered at or sent by mail to the last business address known to the party giving such notice.

YARD.-That portion of a *lot* extending open and unobstructed from the lowest level to the sky along the entire length of a *lot line*.

ZONE.-A vertical division of a *building* fire *standpipe system* used to establish the water working pressures within the system and also to limit the pressure at the lowest hose outlet in the zone.

ZONING RESOLUTION.-The zoning resolution of the city of New York, adopted December fifteenth, nineteen hundred sixty-one, including all amendments thereto.

ARTICLE 3 ABBREVIATIONS

Abbreviations. §[C26-202.0]27-233

bhp: brake horsepower
Btu: British [*sic*] thermal unit
C: centigrade
cfm: cubic feet per minute
cps: cycles per second
cu. ft.: cubic feet
db: decibel
dia.: diameter
F: fahrenheit
fpm: feet per minute
fps: feet per second
fsp: fire standpipe
ft.: foot
gal.: gallon
gpm: gallons per minute
gps: gallons per second
h.p.: horsepower
hr.: hour
in.: inch
INR: impact noise rating
I.P.S.: iron pipe size
lb.: pound
mph: miles per hour
oz.: ounce
P.C.E.: pyrometric cone equivalent
pcf: pounds per cubic foot
plf: pounds per linear foot
psf: pounds per square foot
psi: pounds per square inch
psia: pounds per square inch absolute
psig: pounds per square inch gauge
rpm: revolutions per minute
sec.: second
swp: steam working pressure
sq. ft.: square foot
sq. in.: square inch
sq. yd.: square yard
STC: sound transmission class
Tag: tagliabue
wwp: water working pressure

Note—For abbreviation of name of referenced national organizations, see reference standard RS 2-1.

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SUBCHAPTER 3
OCCUPANCY AND CONSTRUCTION CLASSIFICATION

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ARTICLE 1 GENERAL

§[C26-300.1] 27-234 Scope.-The provisions of this subchapter shall establish and control the classification of all buildings, and spaces therein, with respect to occupancy group and class of construction.

§[C26-300.2] 27-235 Reference standards.-

Occupancy and construction classifications which appear in the several reference standards of this code shall apply to the provisions of the reference standard only unless otherwise indicated.

§[C26-300.3] 27-236 Definitions.-For definitions to be used in the interpretation of this subchapter, see subchapter two of this chapter.

ARTICLE 2 OCCUPANCY CLASSIFICATIONS

§[C26-301.1] 27-237 Occupancy groups.-Table 3-1 lists occupancy groups and sub groups that shall be established for classifying buildings and spaces in accordance with the provisions of articles three through twelve of this subchapter.

TABLE 3-1 OCCUPANCY CLASSIFICATIONS

Occupancy Group	Classification	Fire Index
A	High hazard	4
B-1	Storage (moderate hazard)	3
B-2	Storage (low hazard)	2
C	Mercantile	2
D-1	Industrial (moderate hazard)	3
D-2	Industrial (low hazard)	2
E	Business	2
F-1a	Assembly (theaters, etc.)	1
F-1b	Assembly (churches, concert halls, etc.)	1
F-2	Assembly (outdoors)	1
F-3	Assembly (museums, etc.)	1
F-4	Assembly (restaurants, etc.)	1
G	Education	1
H-1	Institutional (restrained)	1
H-2	Institutional (incapacitated)	1
J-1	Residential (hotels, etc.)	1
J-2	Residential (apartment houses, etc.)	1
J-3	Residential (one-and-two-family dwellings)	1
K	Miscellaneous	1

§[C26-301.2] 27-238 Classification of spaces.-Every space or room hereafter altered or erected shall, for the purposes of this code, be classified in one of the occupancy groups listed in Table 3-1 according to the occupancy or use of the space or room.

§[C26-301.3] 27-239 Classification of buildings.-Every building hereafter erected or altered under the provisions of section 27-115 of article four of subchapter one of this chapter shall, for the purposes of this code, be classified in one of the occupancy groups listed in table 3-1 according to the main use or dominant occupancy of the building. However, at the option of the applicant, subject to the approval of the commissioner, buildings may be classified in any other occupancy group, provided such occupancy group has a higher fire index, as listed in table 3-1, than the fire index of the occupancy group classification of the main use or dominant occupant.

§[C26-301.4] 27-240 Separation of occupancies.-Occupancies within buildings shall be separated from one another as follows:

a. Spaces classified in occupancy groups having a higher fire index, as listed in table 3-1, than the fire index of the occupancy group classification of the building, shall be separated from adjoining spaces by construction meeting the fire-resistance rating requirements for fire divisions under the provisions of subdivision (a) of section 27-339 of article five of subchapter five of this chapter. Such occupancies shall, for the purposes of this code, be classified and treated as separate buildings (hereinafter referred to as "building section").

b. Spaces classified in occupancy groups having the same or lower fire index, as listed in table 3-1, than the fire index of the occupancy group classification of the building, shall be separated from adjoining spaces by construction meeting the fire-resistance rating requirements for fire separations under the provisions of subdivision (b) of section 27-339 of article five of subchapter five of this chapter.

§[C26-301.5] 27-241 Classification tables.-Table 3-2 and reference standard RS 3-3 list representative

occupancies that shall be used as a basis for classifying buildings and spaces by occupancy.

§[C26-301.6] 27-242 Multiple occupancy or use.- When a building or space is used for multiple purposes, involving different activities at different times, the building or space shall be given a separate occupancy group classification for each of the activities involved. The design and construction of the building or space shall be in accordance with the most restrictive provisions of this code that apply to any of the occupancy group classifications utilized. However, a minor variation of any occupancy or use of a space from technical compliance with a particular space occupancy classification shall not be prohibited if such variation is normally associated with the occupancy classification and no specific danger or hazard is created.

ARTICLE 3 OCCUPANCY GROUP A-HIGH HAZARD

§[C26-302.1] 27-243 Classification.-Buildings and spaces shall be classified in the high hazard occupancy group when they are used for storing, manufacturing, or processing potentially-explosive products or materials, or highly-combustible or highly-flammable products or materials that are likely to burn with extreme rapidity. The high hazard group shall also include: uses that involve storing, processing, or handling any materials that produce explosive dust, or that result in the division of matter into fine particles subject to spontaneous ignition; uses that employ solids or substances that ignite or produce flammable gases on contact with water; and any other uses that constitute a high fire hazard because of the form, character, or volume of the materials involved.

(a) Typical material contents.-Acetylene gas and gases under pressure of fifteen psig or more and in quantities greater than twenty-five hundred cubic feet, including hydrogen, illuminating gas, natural gas, and all other gases subject to explosion; gas piping at pressure levels above fifteen psig regardless of the quantities of gas; celluloid and celluloid products; cotton batting; kerosene; fuel or other oils having a flash point under 200^{o}F [*sic*] (tag closed cup), except five hundred fifty gallons or less in one- and two-family dwellings; refrigerating systems using high hazard refrigerants as defined in subchapter thirteen of this chapter, and except that in buildings lawfully occupied as garages prior to December sixth, nineteen hundred sixty-eight the storage of tank trucks or other vehicles, approved by the fire commissioner for the transportation of products having a flash point of over 100^{o}F [*sic*] (tag open cup), and where the product contained in the cargo space of the vehicles is pending delivery, shall only be considered to constitute a high hazard occupancy when the product is stored in quantities greater than forty-five thousand gallons.

(b) Typical occupant activities.-Artificial [*sic*] flower and synthetic leather manufacture; ammunition, explosives, and fireworks manufacture, sales or storage; dry cleaning or dyeing; using or storing gasoline or other combustible solvents as outlined in article six of subchapter seven of this chapter; feather renovating; fruit ripening processes; hydrogenation processes; match manufacture or storage; metal enamelling or japanning; paint and varnish manufacture; paint spraying or dipping, as specified in article three of subchapter seven of this chapter; derivation of petroleum products by application of heat; processing of paper or cardboard in loose form; pyroxylin products manufacture and storage; rag sorting and storage; shoe polish manufacture; straw goods manufacture or broom corn storage; tar, pitch, or resin processing; waste paper sorting, shredding, storage, or baling; cotton waste processes.

§[C26-302.2] 27-244 Location restrictions.-No space classified in the high hazard occupancy group shall be located above the second story of any building or building section classified in construction group II containing a space classified in occupancy group J-1 or J-2.

ARTICLE 4 OCCUPANCY GROUP B-STORAGE

§[C26-303.1] 27-245 Classification.-Buildings and spaces shall be classified in the storage occupancy group when they are used primarily for storing goods. When the goods stored are highly combustible, flammable, or potentially explosive, the building or space shall meet the requirements for high hazard occupancies when the latter are more restrictive than the corresponding requirements for the storage classification. The storage occupancy group consists of sub groups B-1 and B-2.

§[C26-303.2] 27-246 Occupancy group B-1.-Shall include buildings and spaces used for storing any flammable or combustible materials that is likely to permit the development and propagation of fire with moderate rapidity.

(a) Typical material contents: bags (cloth, burlap, and paper); bamboo and rattan; baskets; belting (canvas and leather); books and paper in rolls or packs; buttons, including cloth-covered, pearl, or bone; boots and shoes; cardboard and cardboard boxes; wearing apparel; cordage; furniture; furs; glue, mucilage, paste, and size; horn and combs other than celluloid; leather enamelling or japanning; linoleum; livestock; lumber; photo-engraving supplies; silk; soap; sugar; tobacco; cigars, cigarettes, and snuff; upholstery and mattresses; wax candles.

***TABLE 3-2 TYPICAL OCCUPANCIES FOR OCCUPANCY CLASSIFICATION**

Occupancy Group	Designation	Representative Occupancies
HIGH HAZARD	A	Paint shop and storerooms; industrial smoke houses; grain elevators; tanneries with enamelling or japanning; distilleries; sugar, starch, cereal, feed, flour, and grist mills; any space containing gas distribution piping at pressure levels above fifteen psig
STORAGE	B-1	Warehouses; storerooms; freight depots; stables; coal pockets; group 1 public garages**
	B-2	Warehouses; storerooms; private garages; green houses; group 2 public garages**
MERCANTILE	C	Retail stores; shops; sales rooms; markets
INDUSTRIAL	D-1	Baking plants; breweries; automotive repair shops; foundries [*sic*]*;* heliports; scenery shops
	D-2	Mechanical and electrical equipment rooms; power plants, and boiler and furnace rooms, except those containing gas distribution piping at pressure levels above fifteen psig; commercial laundries; vocational training shops; laboratories; nonresidential kitchens
BUSINESS	E	Office buildings; banks; civic administration buildings; radio and television stations not classified as places of assembly or as equipment rooms; telephone exchanges; barber and beauty shops; automotive service stations; neighborhood family care centers; medical offices or group medical centers
[ASSEMBLY	F-1a	Theaters; playhouses; opera houses]***
	F-1b	Churches; lecture halls; court rooms; convention halls; concert halls; sports arenas; planetariums; motion picture theaters
	F-2	Grandstands; bleachers; stadiums; drive-in theaters; amusement attractions and devices; bandstands; skating rinks
	F-3	Exhibition halls; galleries; gymnasiums; museums; passenger terminals; bowling alleys; billiard parlors; skating rinks
	F-4	Restaurants; night clubs; cabarets; dance halls; ballrooms; banquet rooms; cafeterias; snack bars; taverns; coffee houses
EDUCATIONAL	G	Schools; academies; universities; libraries
INSTITUTIONAL	H-1	Jails; prisons; reformatories; mental institutions
	H-2	Hospitals; sanitariums; clinics; nursing homes; orphanages; homes for the aged; day nurseries
RESIDENTIAL	J-1	Hotels; motels; lodging houses; rooming houses
	J-2	Apartment houses; apartment hotels; school dormitory buildings
	J-3	One-family and two-family dwellings; rectories; convents; [group homes]***
MISCELLANEOUS	K	Sheds; fences; signs

*This list of occupancies is representative only and is not complete.
See reference standard RS 3-3 for additional listings.
**See article ten of subchapter seven of this chapter.
***Copy in brackets not enacted but probably intended.

§[C26-303.3] 27-247 Occupancy group B-2.-Shall include buildings and spaces used for storing noncombustible materials and materials that do not ordinarily burn rapidly.

ARTICLE 5 OCCUPANCY GROUP C - MERCANTILE

§[C26-304.1] 27-248 Classification.-Buildings and spaces shall be classified in the mercantile occupancy group when they are used for display and sales of goods accessible to public inspection. Highly combustible or flammable goods, such as those made of pyroxylin products, shall be limited to small quantities that do not constitute a high hazard; if not so limited, the occupancy shall meet the requirements for high hazard occupancies when the latter are more restrictive than the corresponding requirements for the mercantile classification.

ARTICLE 6 OCCUPANCY GROUP D-INDUSTRIAL

§[C26-305.1] 27-249 Classification.-Buildings and spaces shall be classified in the industrial occupancy group when they are used for fabricating, assembling, manufacturing, or processing products, materials, or energy, except that when any products or materials, or other products or materials used in their manufacture are highly combustible, flammable, or explosive, the occupancy shall meet the requirements for high hazard occupancies when the latter are more restrictive than the corresponding requirements for the industrial classification. The industrial occupancy group consists of sub groups D-1 and D-2.

§[C26-305.2] 27-250 Occupancy group D-1.-Shall include buildings and spaces in which the fabrication, assembly, manufacturing, or processing represents a moderate fire hazard due to the extent and nature of such operations, or to the materials involved**.**

(a) Typical occupant activities-Canning, including food products and condensed and powdered milk manufacturer; dry cleaning or dyeing using or storing solvents having a flash point between 100^{o}F and 138.2^{o}F (Tag closed-cup); electrolytic processes; glass manufacture, leather tanning and treating, excluding enamelling or japanning; sugar refining; textile milling, including canvas, cotton, cloth, bagging, burlap, carpets, and rugs; upholstering; woodworking; cotton dressmaking; and manufacturing or processing materials such as those outlined in subdivision (a) of section 27-246 of article four of this subchapter.

§[C26-305.3] 27-251 Occupancy group D-2.-This group shall include buildings and spaces in which the fabrication, assembly, manufacturing, or processing represents a low fire hazard.

§[C26-305.4] 27-252 Location restrictions.-No space classified in the industrial group D shall be located above the second story of any building or building section classified in construction group II containing a space classified in occupancy group J-1 or J-2.

ARTICLE 7 OCCUPANCY GROUP E-BUSINESS

§[C26-306.1] 27-253 Classification.-Buildings and spaces shall be classified in the business occupancy group when they are occupied for transacting business; for rendering professional services; or for performing other commercial services that may incidentally involve the storage of limited quantities of stocks of goods for office use or purposes. Buildings and spaces used for prosecuting public or civic services shall also be classified in this group.

ARTICLE 8 OCCUPANCY GROUP F-ASSEMBLY

***§[C26-307.1] 27-254 Classification.-**Buildings and spaces exclusive of dwelling units shall be classified in the assembly occupancy group when they are designed for use by any number of persons for religious, recreational, political or social purposes, or for the consumption of food or drink or for similar group activities; or when occupied by seventy-five people or more for educational purposes. When such occupancies are enclosed and contain or are designed for use by seventy-five or more persons or are outdoor spaces and contain or are designed for use by two hundred or more persons, they shall comply with the requirements of subchapter eight of this chapter for places of assembly.

****Local Law 23-1990.***

§[C26-307.2] 27-255 Occupancy group F-1.-Shall include those buildings and spaces in which, during the major period of occupancy, the persons assembled comprise a seated or otherwise passive audience to a performance or presentation, and have their attention focused in a common direction or at a common subject. Occupancy group F-1 consists of two subdivisions F-1a and F-1b.

(a) Occupancy group F-1a.-Includes buildings and spaces in which scenery and scenic elements are used.

(b) Occupancy group F-1b.-Includes buildings and spaces in which scenery and scenic elements are not used.

§[C26-307.3] 27-256 Occupancy group F-2.-Shall include all outdoor structures and spaces.

§[C26-307.4] 27-257 Occupancy group F-3.-Shall include buildings and spaces in which the persons assembled are physically active and do not have a common center of attention.

§[C26-307.5] 27-258 Occupancy group F-4.-Shall include buildings and spaces in which persons assemble for dancing or for the consumption of food or drink, or for any combination of dancing, eating, drinking, or entertainment.

ARTICLE 9 OCCUPANCY GROUP G-EDUCATIONAL

§[C26-308.1] 27-259 Classification.-Buildings, building sections and spaces shall be classified in the educational occupancy group when persons occupy them for instruction or other educational purposes except those spaces occupied as a place of assembly. These spaces shall be classified in occupancy group F-assembly, under the provisions of article eight of this subchapter. Such buildings, building sections and spaces occupied for instruction and used exclusively by adults may be classified, by the commissioner in occupancy group E-business and if so classified such buildings, building sections and spaces shall comply with the requirements for such classification.

ARTICLE 10 OCCUPANCY GROUP H-INSTITUTIONAL

§[C26-309.1] 27-260 Classification.-Buildings and spaces shall be classified in the institutional occupancy group when persons suffering from physical limitations because of health or age are harbored therein for care or treatment; when persons are detained therein for penal or correctional purposes; or when the liberty of the inmates is restricted. The institutional occupancy group consists of sub groups H-1 and H-2.

§[C26-309.2] 27-261 Occupancy group H-1.-Shall include buildings and spaces used for the detention of persons under restraint.

§[C26-309.3] 27-262 Occupancy group H-2.-Shall include buildings and spaces used for the care or treatment of persons with physical limitations because of health or age. This shall not include medical or dental offices providing services to ambulatory non-hospitalized persons, such as neighborhood family care centers, medical or dental offices, group medical offices, and the like.

ARTICLE 11 OCCUPANCY GROUP J-RESIDENTIAL

§[C26-310.1] 27-263 Classification.-Buildings and spaces shall be classified in the residential occupancy group when families or households dwell therein, or when sleeping accommodations, with or without dining facilities, are provided therein for individuals. Excluded from this group are those buildings and spaces classified under the institutional occupancy group. The residential occupancy consists of sub groups J-1, J-2, and J-3.

§[C26-310.2] 27-264 Occupancy group J-1.-Shall include buildings and spaces that are primarily occupied for the shelter and sleeping accommodation of individuals on a day-to-day or week-to-week basis.

§[C26-310.3] 27-265 Occupancy group J-2.-Shall include buildings with three or more dwelling units that are primarily occupied for the shelter and sleeping accommodation of individuals on a month-to-month or longer-term basis.

§[C26-310.4] 27-266 Occupancy group J-3.-Shall include buildings occupied as one-family or two-family dwellings, or as convents or rectories.

ARTICLE 12 OCCUPANCY GROUP K-MISCELLANEOUS

§[C26-311.1] 27-267 Classification.-Structures of a temporary character, and minor occupancies not classified in any other specific occupancy group, shall be classified in the miscellaneous occupancy group. Such structures and occupancies shall be constructed, equipped, and maintained to meet the requirements of this code commensurate with the fire and life hazard incidental to their use. The miscellaneous occupancy group includes all accessory structures such as sheds, fences, and similar constructions.

ARTICLE 13 DOUBTFUL OCCUPANCIES

§[C26-312.1] 27-268 Classification.-When a building or space is used for an occupancy not specifically provided for in this code, or when its classification is otherwise uncertain, such building or space shall be included in the occupancy group that it most nearly resembles with respect to the existing or proposed life and fire hazard, and it shall be so

classified by the architect or engineer subject to the approval of the commissioner.

ARTICLE 14 CONSTRUCTION CLASSIFICATIONS

§[C26-313.1] 27-269 Construction classes.-Table 3-3 lists construction classes that shall be established for classifying buildings and spaces by construction in accordance with the provisions of articles fifteen, sixteen and seventeen of this subchapter.

TABLE 3-3 CONSTRUCTION CLASSES

Construction Group	Class
I-Noncombustible	I-A— (4-hr. protected)
	I-B— (3-hr. protected)
	I-C— (2-hr. protected)
	I-D— (1-hr. protected)
	I-E— (unprotected)
II-Combustible	II-A— (heavy timber)
	II-B— (protected wood joist)
	II-C— (unprotected wood joist)
	II-D— (protected wood frame)
	II-E— (unprotected wood frame)

§[C26-313.2] 27-270 Classification of buildings and spaces.-Every building, room, or space hereafter altered or erected shall, for the purposes of this code be classified in one of the construction classes listed in table 3-3.

§[C26-313.3] 27-271 Classification table.-The fire-resistance ratings of construction elements in hours listed in table 3-4 shall be used as a basis for classifying buildings and spaces by construction. Fire-resistance ratings shall be based on the test procedures of reference standard RS 3-1 and shall apply to all occupancy groups except as specifically noted. For hazardous occupancies involving an exceptionally high degree of fire risk or an exceptionally high concentration of combustible or flammable contents, the commissioner may increase the requirements of table 3-4.

§[C26-313.4] 27-272 False designation.-No building or space shall be designated a given construction class unless it conforms to the minimum requirements for that class; and no building or space shall be posted, used, designated, or advertised as of a given construction class unless it complies with the minimum requirements of this code for that class.

§[C26-313.5] 27-273 Minimum requirements.-When a class of construction is utilized which is superior to that required for any particular use, nothing in this code shall be construed to require full compliance with the requirements for the higher class; the designated construction classification of the building or space shall be that of the lesser classification, unless all of the requirements for the higher class are met.

ARTICLE 15 CONSTRUCTION GROUP I-NONCOMBUSTIBLE

§[C26-314.1] 27-274 Classification.-Buildings or spaces in noncombustible construction group I are those in which the walls, exitways, shafts, structural members, floors, and roofs are constructed of noncombustible materials and assemblies affording the fire-resistance ratings specified in table 3-4. The noncombustible construction group I consists of classes I-A, I-B, I-C, I-D, and I-E.

§[C26-314.2] 27-275 Construction class I-A.-Includes buildings and spaces in which the bearing walls and other major structural elements are generally of four-hour fire-resistance rating.

§[C26-314.3] 27-276 Construction class I-B.-Includes buildings and spaces in which the bearing walls and other major structural elements are generally of three-hour fire-resistance rating.

§[C26-314.4] 27-277 Construction class I-C.-Includes buildings and spaces in which the bearing walls and other major structural elements are generally of two-hour fire-resistance rating.

§[C26-314.5] 27-278 Construction class I-D.-Includes buildings and spaces in which the bearing walls and other major structural elements are generally of one-hour fire-resistance rating.

§[C26-314.6] 27-279 Construction class I-E.-Includes buildings and spaces in which the bearing walls and other major structural elements generally have no fire-resistance rating.

ARTICLE 16 CONSTRUCTION GROUP II-COMBUSTIBLE

§[C26-315.1] 27-280 Classification. - Buildings and spaces in combustible construction group II are those in which the walls, partitions, structural members, floors, and roofs are constructed wholly or partly of combustible materials affording the required degree of fire-resistance specified in table 3-4. The combustible construction group II consists of classes II-A, II-B, II-C, II-D, and II-E.

TABLE 3-4

†TABLE 3-4 CONSTRUCTION CLASSIFICATIONS

CONSTRUCTION GROUP 1 NONCOMBUSTIBLE

Required fire-resistance ratings of construction elements in hours, based on the test procedures of reference standard RS 3-1.

Key:

N.P.—Not permited
N.L.—No limit

Noncombustible Materials

CONSTRUCTION ELEMENT			CLASS I-A		CLASS I-B		CLASS I-C		CLASS I-D		CLASS I-E	
			Rating in Hrs.	Ext.[a,b] Open'g	Rating in Hrs.	Ext.[a,b] Open'g	Rating in Hrs.	Ext.[a,b] Open'g	Rating in Hrs.	Ext.[a,b] Open'g	Rating in Hrs.	Ext.[a,b] Open'g
Exterior Walls with an Exterior Separation of	3'-0" or less	Bearing	4	N.P.	3	N.P.	2	N.P.	2	N.P.	2	N.P.
		Non-bearing[f]	2		2		2		2		2	
	More than 3'-0" but less than 15'-0"	Bearing	4	3 1/3 % protected	3	3 1/3 % protected	2	3 1/3 % protected	2	3 1/3 % protected	2	6 2/3 % protected
		Non-bearing[f]	2		2		2		2		2	
	15'-0" or more but less than 30'-0"	Bearing	4	3 1/3 %	3	3 1/3 %	2	3 1/3 %	1	3 1/3 %	0	N.L.
		Non-bearing[f]	1½		1½		1		1		0	
	30'-0" or more	Bearing	4	N.L.	3	N.L.	2	N.L.	1	N.L.	0	
		Non-bearing[f]	0		0		0		0		0	
Interior bearing walls and bearing partitions.			4		3		2		1		0[g,i]	
††Enclosure of vertical exits[e], exit passageways, hoistways[m] and shafts.			2		2		2		2		2	
Fire divisions and fire separations.			See Article 5									
Columns[k], girders, trusses (other than roof trusses) and framing.		Supporting one floor	3		2		1½		1		0[g,i]	
		Supporting more than one floor[1]	4		3		2		1		0[g,i]	
Structural members supporting a wall.			Same as required fire resistance of wall supported, but not less than rating required for member by the class of construction.									
Floor construction including beams.			3		2		1½		1		0[g,i]	
Roof construction, including beams, trusses and framing, including arches, domes, shells, cable supported roofs and roof decks[h].		15'-0" or less in ht. above floor to lowest member	2		1½		1[i]		1[i]		0[g,i]	
		15'-0" to 20'-0" in ht. above floor to lowest member	2[c,i] or 1[d,i]		1½[c,i] or 1[d,i]		1[i]		1[i]		0[g,i]	
		20'-0" or more in ht. above floor to lowest member	2[c,i] or 0[d,g,i]		1½[c,i] or 0[d,g,i]		1[c,i] or 0[d,g,i]		1[c,i] or 0[d,g,i]		0[g,i]	

Notes:

a. The area of openings permitted in exterior walls at any story shall be obtained by multiplying the percentage shown in the table by the exterior separation distance in feet, and then multiplying that product by the square-foot area of the façade of that story. Requirements for protected exterior openings shall not apply to churches. [.Protected openings within an exterior separation of 3 ft. 0 inch or less are permitted for buildings classified in Occupancy Groups J-2 and J-3 provided, however said openings do not exceed in total area 10% of the façade of the story in which they are located. The openings however, may not be credited towards meeting any of the mandatory natural light or ventilation requirements of Art. 12* Protection of openings with an exterior separation of 3 ft. to 30 ft. shall not be required for J2 and J3 occupancy groups.]** or to buildings classified in occupancy groups J-2 and J-3*** See section 27-331 of article four of subchapter five of this chapter for additional requirements for exterior walls and exterior wall openings.

b. Upon special application, the commissioner may permit exterior wall openings to be constructed in excess of the permitted area established by table 3-4 if such openings at the time of their construction are located at least sixty feet in a direct line from any neighboring building except as otherwise permitted by footnote f. Such additional openings may not, however, be credited toward meeting any of the mandatory natural light or ventilation requirements of subchapter twelve of chapter on of this title. If any neighboring building is later altered or constructed to come within the above distance limitation, the affected exterior openings shall immediately be closed with construction meeting the fire-resistance rating requirements for exterior wall construction of the building in which they are located.

c. Applies to occupancy groups A,B-1,B-2, and D-1.

d. Applies to all occupancy groups other than those described in footnote c.

Now Subchapter 12.

****Copy in brackets not enacted but probably intended.***

*****Copy from closing brackets to these asterisks enacted but probably intended to be omitted.***

†Local Law 77-1988.

†† Local Law 26-2004.

TABLE 3-4 (continued)

†TABLE 3-4 CONSTRUCTION CLASSIFICATIONS (continued)

CONSTRUCTION GROUP II COMBUSTIBLE

Required fire-resistance ratings of construction elements in hours, based on the test procedures of reference standard RS 3-1.

Key:

N.P.—Not permited
N.L.—No limit

Noncombustible Materials

CONSTRUCTION ELEMENT			CLASS II-A		CLASS II-B		CLASS II-C		CLASS II-D		CLASS II-E	
			Rating in Hrs.	Ext.[a,b] Open'g	Rating in Hrs.	Ext.[a,b] Open'g	Rating in Hrs.	Ext.[a,b] Open'g	Rating in Hrs.	Ext.[a,b] Open'g	Rating in Hrs.	Ext.[a,b] Open'g
Exterior Walls with an Exterior Separation of	3'-0" or less	Bearing	2	N.P.	2	N.P.	2	N.P.	2	N.P.	2	N.P.
		Non-bearing[f]	2		2		2		2		2	
	More than 3'-0" but less than 15'-0"	Bearing	2	3 1/3 % protected	2	3 1/3 % protected	2	3 1/3 % protected	1	6 2/3 %	1	6 2/3 %
		Non-bearing[f]	2		2		2		1		1	
	15'-0" or more but less than 30'-0"	Bearing	2	3 1/3 %	2	3 1/3 %	2	3 1/3 %	1	N.L.	0	N.L.
		Non-bearing[f]	2		2		2		1		0	
	30'-0" or more	Bearing	1	N.L.	1½	N.L.	1½	N.L.	1		0	
		Non-bearing[f]	0		0		0		0		0	
Interior bearing walls and bearing partitions.			2		1		0		1		0	
††Enclosure of vertical exits[e], exit passageways, hoistways[m] and shafts.			2		2		1[i]		1[i]		1	
Fire divisions and fire separations.			See Article 5									
Columns[k], girders, trusses (other than roof trusses) and framing.	Supporting one floor		see section 27-623		1		0 or 1[j]		1		0	
	Supporting more than one floor		see section 27-623		1		0 or 1[j]		1		0	
Structural members supporting a wall.			Same as required fire resistance of wall supported, but not less than rating required for member by the class of construction.									
Floor construction including beams.			see section 27-623		1		0 or 1[j]		1		0	
Roof construction including beams, trusses and framing, including arches, domes, shells, cable supported roofs and roof decks[h].	15'-0" or less in ht. above floor to lowest member		see section 27-623		¾		0		¾		0	
	15'-0" to 20'-0" in ht. above floor to lowest member		see section 27-623		¾		0		¾		0	
	20'-0" or more in ht. above floor to lowest member		see section 27-623		¾		0		¾		0	

††e. See subdivision (i) of section 27-375 of article five of subchapter six of this chapter for additional impact resistance requirements applicable to certain stair enclosures and for certain exceptions to stair enclosure requirements.

f. When two or more buildings are constructed on the same lot, and the combined floor area of the buildings does not exceed the limits established by tables 4-1 and 4-2 for any one of the buildings, no fire-resistance rating shall be required for nonbearing portions of the exterior walls of those buildings facing each other, and there shall be no limitation on the permitted amount of exterior openings.

g. Fire retardant treated wood complying with the requirements of section 27-328 of article three of subchapter five of this chapter may be used.

h. Tabulated ratings apply to buildings over one story in height. In one story buildings roof construction may be of material having 0 hour fire-resistance rating.

i. Materials which are not noncombustible, as defined in subchapter two of chapter one of this title, may be used in nonbearing construction elements if they fall into one of the following categories:

1. Materials having a structural base of noncombustible materials as defined in subchapter two, and having a surface not over one-eighth inch thick which when tested in accordance with the provisions of reference standard RS 3-2 has a flame spread rating not higher than fifty.

2. Materials which when tested in accordance with the provisions of reference standard RS 3-2 have a surface flame spread rating not higher than twenty-five without evidence of continued progressive combustion, and which are of such composition that surfaces which would be exposed by cutting through the material in any way would not have a flame spread rating higher than twenty-five without evidence of continued progressive combustion.

Notes for Table 3-4 (continued)

j. Applies to the construction of the street floor and all construction below the level of the street floor in building or spaces classified in occupancy group J-2 except where the space below the street floor does not exceed five feet in height.

k. Columns supporting the roof of a one-story building shall have the same fire-resistance rating as required for a column supporting one floor in a building of the same construction class.

l. Members supporting loads of not more than two floors or one floor and a roof need not have a fire-resistance rating greater than the floor construction fire-resistance requirement in buildings classified in occupancy groups G, H, and J-2, not including unsprinklered spaces of other occupancies, and in fully sprinklered buildings in occupancy groups E and J-1.

†† m. See subdivision (c) of section 27-987 of article one of subchapter eighteen of this chapter for additional impact resistance requirements applicable to certain elevator enclosures.

†† Local Law 26-2004.

§[C26-315.2] 27-281 Construction class II-A.- Includes heavy timber construction in which fire-resistance is attained by limiting the minimum sizes of wood structural members and the minimum thickness and composition of wood floors and roofs; by avoiding concealed spaces under floors and roofs or by providing fire-stopping protection for these spaces; and by using fastenings, construction details, and adhesives for structural members as required by article seven of subchapter ten of this chapter. The minimum dimensions for framing members shall be prescribed in section 27-623 of article seven of subchapter ten of this chapter, except that members which are protected to provide a fire-resistance rating of at least one hour need not comply with this requirement.

§[C26-315.3] 27-282 Construction class II-B.- Includes buildings and spaces in which the exterior walls, fire walls, exitways, and shaft enclosures are of noncombustible materials having the required fire-resistance ratings; and in which the floors, roofs, and interior framing are wholly or partly of wood of smaller dimensions than required for class II-A construction, or are of other combustible or noncombustible materials, having the required fire-resistance ratings.

§[C26-315.4] 27-283 Construction class II-C.- Includes buildings and spaces in which the exterior walls, fire walls, exitways, and shaft enclosures are of noncombustible materials having the required fire-resistance ratings; and in which the floors, roofs, and interior framing are wholly or partly of wood of smaller dimensions than required for class II-A construction, or are of other combustible or noncombustible materials having no fire-resistance ratings.

§[C26-315.5] 27-284 Construction class II-D.- Includes buildings and spaces in which the exterior walls, bearing walls, floors, roofs, and interior framing are generally of wood or other combustible materials having the required fire-resistance ratings.

§[C26-315.6] 27-285 Construction class II-E.- Includes buildings and spaces in which the exterior walls are generally of wood or other combustible materials having the required fire-resistance ratings, and in which the bearing walls, floors, roofs, and interior framing are of wood or other combustible materials, generally having no fire-resistance ratings.

ARTICLE 17 MIXED CONSTRUCTION

§[C26-316.1] 27-286 Classification.- When two or more classes of construction occur within the same building, the entire building shall be subject to the most restrictive occupancy and size limitations for the classes of construction involved. However, if the occupancies within the different classes of construction are completely separated by construction that meets the fire-resistance rating requirements for fire divisions listed in table 5-2 then each occupancy so separated may, for the purposes of this code, be considered as a separate building ("building section").

§[C26-316.2] 27-287 Restrictions.- In buildings of mixed construction, no structural element shall be supported by construction having a lower fire-resistance rating than that required for the element being supported.

SUBCHAPTER 4
BUILDING LIMITATIONS

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ARTICLE 1 GENERAL

§[C26-400.1] 27-288 Scope. -The provisions of this article establish building access requirements; shall regulate the division of the city of New York into fire districts and control the occupancy groups and construction classes permitted therein; shall regulate permissible building areas, height and projections beyond the street line and shall establish special flood hazard areas and a regulatory flood datum in the city of New York and regulate permissible occupancies and construction or other improvement below such flood datum within such flood hazard areas.

§[C26-400.2] 27-289 Standards. - The provisions of reference standard RS-4 shall be a part of this subchapter.

§[C26-400.3] 27-290 Definitions. - For definitions to be used in the interpretation of this subchapter, see subchapter two of this chapter.

*ARTICLE 2 BUILDING ACCESS
SUBARTICLE 1 FIRE DEPARTMENT ACCESS

§[C26-401.1] 27-291 Frontage. - Every building, exclusive of accessory buildings, shall have at least eight per cent of the total perimeter of the building fronting directly upon a street or frontage space. For the purposes of this section, building perimeter shall be measured at that story having the maximum enclosed floor area.

§[C26-401.2] 27-292 Building access. - Provisions shall be made for access by the fire department to every building as follows:

(a) Above grade. - Access shall be provided directly from the outdoors to each story below a height of one hundred feet except to the first story or ground floor, by at least one window or readily identifiable access panel within each fifty feet or fraction thereof of horizontal length of every wall that fronts on a street or frontage space. Windows shall be openable or breakable from both the inside and the outside, and shall have a size when open of at least twenty-four inches by thirty-six inches. Panels shall be openable from both the inside and outside and shall have a height when open of forty-eight inches and a width of at least thirty-two inches. The sill of the window or panel shall not be higher than thirty-six inches above the inside floor.

(b) Below grade. - Access shall be provided directly from the outdoors to the first basement or cellar story below grade, except as provided in paragraphs two, three and four of this subdivision, within each one hundred feet or fraction thereof of horizontal length of every wall that fronts on a street or frontage space. Such access shall be by stairs, doors, windows or other means that provide an opening forty-eight inches high and thirty-two inches wide, the sill of which shall not be higher than thirty-six inches above the inside floor. If an areaway is used to provide below grade access, the minimum horizontal dimension shall be at least one-third the depth of the areaway or six feet whichever is less.

(1) Access to additional stories below grade is not mandatory since they are required to be sprinklered as provided in subdivision k of section 27-954 of article four of subchapter seventeen of this chapter.

(2) One- and two-family dwellings need not provide direct access.

(3**)** Any building classified in occupancy group J-2 not more than three stories in height and with not more than two dwelling units on any story need not provide direct access when such first basement or cellar story is used for dwelling units or for uses accessory to the residential use in the building.

(4) Except as provided in paragraph three of this subdivision, for buildings classified in occupancy group J-1 or J-2 only one direct access from the outdoors to the first basement or cellar story consisting of a stair or door shall be required when such story is used for dwelling units or for uses accessory to the residential use in the building.

(c) Signs. - Where wall signs are erected to cover doors or windows of existing buildings, access panels shall be provided as necessary to comply with the requirements of subdivisions (a) and (b) of this section.

(d) Location. - Wherever practicable, one access opening in each story shall provide access to a stairway, or where there is no stairway at the exterior wall, one access opening in each story shall be located as close as practicable to a stairway.

(e) Exemptions. - The provisions of subdivisions (a) through (d) of this section shall not apply to any story that is completely protected by an automatic sprinkler system conforming to the construction requirements of subchapter seventeen.

Local Law 58-1987.

*SUBARTICLE 2 FACILITIES FOR PEOPLE HAVING PHYSICAL DISABILITIES

§27-292.1 Scope. - As set forth in this subarticle, buildings shall be provided with accessible routes, usable or adaptable space and accessible elements and facilities to make buildings accessible and usable by, and to establish a safe environment for, all categories of people having physical disabilities.

§27-292.2 Standards. - The pertinent provisions of reference standard RS 4-6 shall be part of this subarticle.

§27-292.3 Definitions. - For definitions to be used in

the interpretation of this subarticle, see section 27-232 and reference standard RS 4-6.

§27-292.4 General Requirements. -
(a) This subarticle shall apply to all buildings or portions thereof and their accessory areas, except as specified in this subarticle.
(b) The provisions of this subarticle shall be supplemental to and take precedence over less restrictive provisions of this code in the following articles and sections and in their referenced national standards:
(1) Subchapter four, building limitations
a. §27-308 ramps
(2) Subchapter six, means of egress
a. §27-357 (d) building access
b. §27-371 (e) door opening width
c. §27-377 ramps
(3) Subchapter seven, special uses and occupancies
a. Article ten, public garages
b. Article eleven, open parking structures
c. Article thirteen, open parking lots
d. Article fifteen, swimming pools
(4) Subchapter eight, places of assembly
a. §27-531 Seating in assembly spaces
(5) Subchapter sixteen, plumbing and gas piping
a. Reference standard RS-16, paragraph (c) of section P104.1 Facilities for physically handicapped
b. Reference standard RS-16, paragraph (d) of section P104.1 accessibility
(6) Subchapter seventeen, fire alarm, detection and extinguishing equipment
c. Article six, smoke detecting devices
(7) Subchapter eighteen, elevators and conveyors
a. Reference standard RS 18-1
(c) Facilities in existence on the effective date of this subarticle which comply with the requirements of this subarticle or of other provisions of this code relating to the provision of facilities for people with physical disabilities shall not be diminished to less than those which would be required were the building in which the facilities are located hereafter erected.

§27-292.5 Accessibility. -
(a) Primary entrance(s). - The primary entrance(s) for buildings shall be accessible, except for buildings classified in occupancy group A, J-3 and/or other spaces which normally are not frequented by the public or employees of the facility.
(b) Exterior accessible route. - Except as provided in this subarticle, buildings shall be provided with an exterior accessible route to permit entry at the primary entrance(s) of the building from the following locations:
(1) Public street or sidewalk
(2) Driveways
(3) Parking areas
(4) Passenger loading zones
(5) Transportation stops
(c) Interior accessible route. - Except as provided in this subarticle, in buildings having (an) interior route(s) to one or more of the following spaces or facilities, such route(s) shall be (an) interior accessible route(s) from the entrance(s) usable by all categories of people having physical disabilities to adaptable or usable dwelling units and other spaces and facilities on the same premises including but not limited to:
(1) Laundry rooms
(2) Refuse disposal locations
(3) Mailbox areas
(4) Recreational, assembly and tenants' meeting rooms
(5) Storage rooms
(6) Management offices
(7) Stores
(8) Dining areas
(9) Parking areas
Where the only route to one or more of such spaces or facilities is an exterior route, such route shall be accessible**.**
(d) Path of travel. - The path of travel in exterior and interior accessible routes shall provide unobstructed safe access and applicable items in such path of travel shall comply with the requirements set forth in reference standard RS 4-6.
(e) Elevators. - Where provided, all elevators shall comply with subchapter eighteen, reference standard RS 18-1, where an interior accessible route is required.
(f) Assembly occupancies. - For assembly occupancies having a mezzanine or balcony which provides a similar view as that from the main floor, accessibility to the mezzanine or balcony shall not be required provided toilet rooms are on the main floor.
(g) Restaurants. - For restaurants, dining rooms and similar occupancies having the same services on levels other than the main floor, accessibility to such levels shall not be required provided that toilet rooms are on the main floor.
(h) Storage. - For buildings in which the intended use is the storage of goods or merchandise, the only requirement shall be accessibility at the primary entrance and an interior accessible route to offices where business may be conducted.
(i) Non-grade stories of small non-residential buildings. - The following non-residential buildings or parts thereof are exempt from the provisions of this subarticle concerning requirements for people having physical disabilities, to the extent set forth in subdivisions (1) and (2) of this subsection:
(1) construction of such new buildings the total floor area of which is two thousand five hundred square feet or less;
(2) alterations to such building already existing where the alterations are being made to an above. -grade story

having a total floor area of two thousand five hundred square feet or less or to a below-grade story having a total floor area of two thousand square feet or less.
Notwithstanding the foregoing, floor areas frequented by the public for assembly, governmental, public utility or health facility purposes shall not be exempted unless equivalent functional accessible facilities are provided on the first story.
(j) Where the floor area is more than two thousand five hundred square feet but less than five thousand square feet, a vertical wheelchair lift enclosed in construction having the required fire-resistance rating and connecting not more than two contiguous levels is permitted in lieu of an accessible route as set forth in reference standard RS 4-6.
(k) Where the below-grade cumulative floor area is more than two thousand square feet but not more than five thousand square feet, a vertical wheelchair lift enclosed in construction having the required fire-resistance rating and connecting not more than two contiguous levels is permitted in lieu of an accessible route as set forth in reference standard RS 4-6.

***§27-292.6 Waiver of requirements.** (1) The commissioner may waive the requirements of this subarticle or of subdivision (d) of section 27-357 of this code for the alteration of existing buildings, and for any new building for which a formal application together with plans required by such application was filed with an agency of the city or with the battery park city authority prior to September first, nineteen hundred eighty-seven, when such application was required by law or regulation to be approved by such agency; provided, however, that such waiver would not significantly adversely affect provisions for health, safety and security and that equally safe and proper alternatives are prescribed and, further, that such waiver is based upon a specific finding that strict compliance with the requirement:
(a) would create an undue economic burden; or
(b) would not achieve its intended objective; or
(c) would be physically or legally impossible; or
(d) would be unnecessary in light of alternatives which insure the achievement of the intended objective or which, without a loss in the level of safety, achieve the intended objective more efficiently, effectively or economically; or
(e) would entail a change so slight as to produce a negligible additional benefit consonant with the purposes of this code.
(2) Each application for a waiver under subdivision one of this section shall be made to the commissioner in writing, setting forth each requirement sought to be waived and the specific reason or reasons therefor. The commissioner shall determine, under all of the circumstances presented by such application, which of such requirements may appropriately be waived. The commissioner shall render such determination in a writing, which shall set forth in detail, the commissioner's findings and conclusions with respect to each requirement sought to be waived. A copy of such written determination shall be forwarded to the applicant. Such written determination shall be filed with the department and shall be available for public inspection.
(3) The mayor's office for the handicapped or its successor agency shall be consulted by and shall advise the commissioner concerning each application for a waiver under this section.
*** *Local Law 65-1988.***

§27-292.7 Special requirements of other city departments. - The commissioner upon good cause may waive the requirements of this subarticle for the construction of buildings or spaces, or for the alteration of existing buildings to meet the special requirements of other city departments in regard to any of the following:
(a) Firehouses
(b) Correctional facilities
(c) Cargo handling facilities on the waterfront
(d) Wholesale food markets

§27-292.8 Adaptable dwelling units. - (a) General requirements.
(1) Adaptable dwelling units are units that contain habitable rooms, kitchens, kitchenettes and bathrooms in residential buildings other than in occupancy group J-3 which when constructed are on an accessible route (except as set forth in this subdivision) and are constructed and equipped as defined in section 27-232 and as set forth in this subarticle so that they can be converted to be used, with a minimum of structural change, by all categories of people having physical disabilities.
(2) Such units shall be provided with door widths and clear floor spaces for making dwelling units usable as set forth in reference standard RS 4-6 when occupied by people having physical disabilities.
(3) Interior access, floor surfaces, adaptable kitchens, adaptable kitchenettes and adaptable bathrooms in these dwelling units shall comply with the requirements set forth in reference standard RS 4-6.
(4) Where an adaptable dwelling unit occupies two or more stories within itself, accessibility shall only be required at the first story of such dwelling unit provided that:
a. The second story is accessible from without; or that
b. Equivalent accessible functional facilities are provided on the first story; or that
c. The stair within the dwelling unit has a minimum width of three feet.
(b) Number of adaptable dwelling units. -
(1) All dwelling units in buildings with elevators shall

be adaptable unless usable dwelling units are provided in accordance with section 27-292.9.
(2) At least one but not less than twenty-five percent of the total number of dwelling units in buildings without an elevator, which have dwelling units on the ground floor and which contain three or more dwelling units, shall be adaptable, unless usable dwelling units are provided in accordance with section 27-292.9. Such adaptable dwelling unit(s) shall be located on the ground floor. Where determination by percentage results in a number containing a decimal of 0.5 or more, the next higher number shall be used, but such number shall not exceed the number of dwelling units actually proposed for the ground floor.
(c) Adaptable bathrooms, kitchens and kitchenettes. - Adaptable bathrooms, kitchens and kitchenettes within adaptable dwelling units shall be constructed and equipped in accordance with requirements set forth in reference standard RS 4-6 with respect to the following:
Access doorway or opening
Clear floor space
Floor surface
Bathroom, kitchen and kitchenette facilities and controls capable of being made usable
Space and utilities for usable range, (or cooktop or oven), refrigerator/freezer, (dishwasher if provided).
Such items shall include water closet and toilet paper dispenser, lavatory and removable base cabinet, mirrors, medicine cabinet, bathtub and controls, bathtub and shower enclosure, reinforced areas for grab bars, clearance between opposing base cabinets, counter tops, appliances and walls, adjustable or replaceable sink and removable base cabinet, as well as storage cabinets, drawers and shelves.
(d) Washing machines and clothes dryers within adaptable dwelling units. - Where washing machines and clothes dryers are located within adaptable dwelling units, they shall comply with or be capable of being converted to the requirements set forth in reference standard RS 4-6.
(e) Emergency warning devices within adaptable dwelling units. - Emergency warning devices within adaptable dwelling units shall be capable of being converted to audible and visual indication as required and to conform to the requirements set forth in subchapter seventeen, article six, reference standard RS 17-11, reference standard RS 17-12 and reference standard RS 4-6.

§27-292.9 Usable dwelling units. -
(a) General requirements. -
(1) Usable dwelling units are units in residential buildings in other than occupancy group J-3 which are accessible, constructed and equipped, as defined in section 27-232 and as set forth in this subarticle, so as to be usable by people having physical disabilities. A usable dwelling unit shall be established by conversion from an adaptable dwelling unit when the unit becomes occupied by a person having a physical disability.
(2) Access, storage, controls, windows, doors, floor surfaces, kitchens, kitchenettes and bathrooms, appliances and emergency warning devices in these units shall comply with the requirements set forth in reference standard RS 4-6.
(b) Number of usable dwelling units. (1) Hotels. - In lieu of the requirements of section 27-292.8 in buildings in occupancy group J-1 having ten or more units, not less than five percent of the total number of units shall be constructed as usable units. In all buildings in occupancy group J-1 there shall be available portable smoke detectors of both audible and visual design. The number of detectors available shall be three percent of the number of sleeping rooms with a minimum of one operational detector per building. Proprietors shall post conspicuously a sign at least three inches in height, at the main desk or other similar station, advising of the availability of such detectors. Such detectors shall have a flash frequency range of sixty to one hundred twenty flashes per minute; and, where the average illuminance with motion present is more than twenty lumens per square foot, the visible signaling appliance shall have an effective intensity rating between one hundred and one thousand candela. Hard wiring of audible/visual detectors into an existing central closed-circuit alarm system shall be permitted in lieu of such portable detectors. Where determination by percentage results in a number containing a decimal of 0.5 or more, the next higher number shall be used. Notwithstanding the foregoing, entrance doors to all dwelling units in occupancy group J-1 having ten or more units, and to all bathrooms in such units, shall be no less than thirty-two inches in width.
(2) Adult residential care facilities.- All units in adult residential care facilities shall be usable. "Adult residential care facility" shall mean a family type home for adults, a shelter for adults, a residence for adults, an enriched housing program or an adult home, which contains three or more dwelling units and which provides board and temporary or long-term residential care and services to adults who, though not requiring continual medical or nursing care, are by reason of physical or other limitations associated with age, physical or mental disabilities or other factors unable or substantially unable to live independently. Such facilities shall be considered to be within occupancy group J-2.
(c) Usable bathrooms, kitchens and kitchenettes. - Usable bathrooms, kitchens and kitchenettes within usable dwelling units shall be constructed and equipped in accordance with requirements set forth in reference standard RS 4-6 with respect to the following:
Access doorway or opening

Clear floor space
Floor surface
Bathroom, kitchen and kitchenette facilities and controls
Space and utilities for usable range, (or cooktop or oven), refrigerator/freezer, (dishwasher if provided).
Such items shall include usable water closet and toilet paper dispenser, lavatory and base cabinet, bathtub and controls, bathtub and shower enclosure, grab bars, clearance between opposing base cabinets, counter tops, appliances and walls, sink and base cabinet.

(d) Washing machines and clothes dryers within usable dwelling units. - Where washing machines and clothes dryers are located within usable dwelling units, they shall comply with or be capable of being converted to the requirements set forth in reference standard RS 4-6.

(e) Emergency warning devices within usable dwelling units. - Emergency warning devices within usable dwelling units shall be capable of being converted to audible and visual indication as required and to conform to the requirements set forth in subchapter seventeen, article six, reference standard RS 17-11, reference standard RS 17-12 and reference standard RS 4-6.

§27-292.10 Usable spaces. -

(a) Functional spaces and rooms.

(1) Except as otherwise provided in section 27-292.5, spaces and rooms intended for general public and occupant use shall be accessible and usable. Such spaces and rooms include but are not necessarily limited to the following:
Mercantile spaces
Industrial spaces
Business spaces
Assembly spaces
Educational spaces
Institutional spaces
Toilet rooms
Bathrooms, bathing facilities, shower rooms.

(2) Doors and floor surfaces in usable spaces shall comply with the requirements set forth in reference standard RS 4-6.

(3) Where seating, tables and/or work stations are provided in usable spaces, at least one and not less than five percent shall comply with the requirements set forth in reference standard RS 4-6.

(b) Toilet rooms. -

(1) The location and number of water closets, urinals and lavatories shall be provided in accordance with the requirements set forth in table RS 16-5.

(2) Except where exempted in subdivision (i) of section 27-292.5 or section 27-292.6, facilities for people having physical disabilities shall be provided in toilet rooms or in a readily accessible location. Where such toilet room is designed for use by not more than one person at a time and has provision for locking from the inside, such toilet room shall be permitted to be used by either sex.

(3) Where toilet rooms are not accessible by elevator, they shall be located so that people with physical disabilities need not travel more than one story thereto by ramp.

(c) Bathing facilities. -

(1) The location and number of plumbing fixtures shall be provided in accordance with the requirements set forth in table RS 16-5 and in reference standard RS 4-6.

(2) Each required bathing facility shall be accessible and at least one of each type of fixture or accessory that is provided in such bathing facility shall comply with the requirements set forth in table RS 16-4 and in reference standard RS 4-6.

§27-292.11 Assembly spaces. -

(a) Assembly spaces other than places of assembly shall be provided with a minimum of accessible wheelchair viewing positions as follows:

Capacity of Assembly Space	Number of Viewing Positions
1 to 25	Minimum 1
26 to 50	Minimum 2
51 to 74	Minimum 3

(b) Places of assembly shall be provided with accessible wheelchair viewing positions in accordance with subparagraph h of paragraph (1) of subdivision (a) of section 27-531.

(c) Size and placement of wheelchair location, surfaces, access to performing area and listening systems, where required, shall comply with the provisions of reference standard RS 4-6. These positions may be utilized by persons who do not use wheelchairs provided that the positions are delineated on the approved seating plans, the seating is readily removable and the positions are unsold one full working day before the performance.

§27-292.12 Public toilet rooms. - Where public toilet rooms are provided, there shall be at least one water closet stall and lavatory fixture for each sex which is accessible to and usable by people having physical disabilities and complies with the requirements of paragraph (c) of section P104.1 of reference standard RS 16-1 and reference standard RS 4-6.

§27-292.13 Drinking fountains. -

(a) Location and number of drinking fountains shall be provided in accordance with the requirements set forth in table 16-5.

(b) At least one drinking fountain on a story on which drinking fountains are provided shall be accessible and

comply with the requirements set forth in reference standard RS 4-6.
(c) Where outside drinking fountains are provided, at least one shall be accessible and comply with the requirements set forth in reference standard RS 4-6.

§27-292.14 Public telephones. - At each location where public telephones are provided, at least one telephone shall be accessible and usable by people who use wheelchairs and at least one telephone shall be accessible and usable by persons with hearing impairment, and each such accessible telephone shall comply with the requirements set forth in reference standard RS 4-6.

§27-292.15 Alarms. - Where emergency warning systems are provided in spaces used by people having physical disabilities such systems shall comply with the requirements set forth in reference standard RS 4-6. Portable audible/visual smoke detecting devices in existing group J-1 occupancies shall comply with the provisions of paragraph (1) of subdivision (b) of section 27-292.9.

§27-292.16 Controls and operating mechanisms. - Where controls and operating mechanisms for light switches, dispensers, alarms and other similar devices are provided, they shall be accessible and comply with the requirements set forth in reference standard RS 4-6.

§27-292.17 Tactile warnings. - Tactile warnings shall be provided at hazardous locations on floors, doors, stairs, hazardous vehicular areas and pools, and shall comply with applicable requirements as set forth in reference standard RS 4-6.

§27-292.18 Signage. -
(a) Symbols of accessibility shall be provided at the following locations:
Parking spaces designated as reserved for people having physical disabilities
Passenger loading zones
Public toilet and bathing facilities
Drinking fountains
Public telephones
(b) Information and directional signage shall be provided where deemed necessary.
(c) Symbols and characters shall comply with the applicable requirements set forth in reference standard RS 4-6.

§27-292.19 Parking spaces. -
(a) Where parking areas or garages are provided, at least one parking space but not less than five percent of the total number of parking spaces provided shall be suitable for use by people having physical disabilities. Where determination by percentage results in a number containing a decimal of 0.5 or more, the next higher number shall be used.
(b) Location, space, size and signage for parking spaces suitable for use by people having physical disabilities shall comply with provisions set forth in reference standard RS 4-6.

§27-292.20 Passenger loading zones. - Where passenger loading zones are provided, location and access aisles for at least one vehicle (with respect to multiple dwellings) or zones (with respect to other buildings) shall comply with the requirements set forth in reference standard RS 4-6.
**Local Law 58-1987.*

ARTICLE 3 FIRE DISTRICTS

§[C26-402.1] 27-293 Inside fire districts. - The following city areas are hereby established as being inside the fire districts:
(a) All of the borough of Manhattan.
(b) All of the borough of Bronx.
(c) All of the borough of Brooklyn.
(d) Such portions of the boroughs of Staten Island and Queens as are indicated on the "fire district maps" (reference standards RS 4-1 and RS 4-2).

§[C26-402.2] 27-294 Outside fire districts. - All areas not included inside the fire districts shall be designated as outside fire districts.

§[C26-402.3] 27-295 Mixed districts. - Any building located on the boundary line of a fire district, so that it is both inside and outside the district, shall be of a type of construction required for the fire districts if more than twenty-five per cent of the total floor area of the building is located therein.

ARTICLE 4 LIMITATIONS INSIDE THE FIRE DISTRICTS

§[C26-403.1] 27-296 Limitations. - No buildings in those combinations of construction classes and occupancy groups prohibited by tables 4-1 and 4-2 shall be erected inside the fire districts or shall be moved from outside to inside the fire districts, or from one lot to another inside the fire districts. No building or space classified in occupancy group J-1 or J-2 may be located on a lot containing a building classified in construction group I-E, II-D or II-E.

§[C26-403.2] 27-297 Exemptions. - The following constructions shall be exempt from the provisions of section 27-296 of this article:
(a) One- or two-family dwellings. - One- or two-

family detached or semi-detached dwellings of two stories or less in height and two thousand five hundred square feet or less in area located within zoning residence districts [R-2, R3-1, R3-2, R-4 and R-5]* may be constructed or reconstructed of construction groups II-D combustible materials, or if damaged for any cause, only the damaged portions shall be required to be reconstructed to conform to II-D construction. In addition, one-family dwellings located within zoning residence district [R. -1]* anywhere in the city, may be of combustible group II-E construction in conformance with the area and height limits established by tables 4-1 and 4-2.

** **Copy in brackets not enacted but probably intended.***

(b) Fences. - Fences not over six feet high may be erected of wood or other combustible material.

(c) Storm enclosures, bay windows, etc. - Storm enclosures, bay windows and similar appendages may be constructed of combustible materials in accordance with the provisions of section 27-336 of article four of subchapter five of this chapter.

(d) Accessory buildings for open parking lots. - Parking lot offices and similar accessory buildings not more than ten feet high and not more than one hundred fifty square feet in area may be constructed of combustible materials when on the same lot or accessory to a lot used for motor vehicle parking, and when located at least six feet from any lot line or building.

(e) Temporary structures. - Temporary platforms, reviewing stands, and similar miscellaneous structures may be constructed of combustible materials and used for a limited period of time, subject to the approval of the commissioner.

(f) Greenhouse. - Greenhouses may be constructed of combustible materials when accessory to a one - or two-family dwelling on the same lot and when located at least six feet from any lot line or building.

(g) Roof structures. - Cooling towers, antenna supports, and other roof structures may be constructed of combustible materials in accordance with the provisions of section 27-338 of subchapter five of this chapter.

(h) Bins, tanks, and towers. - Coal and material bins, water towers, tank structures, and trestles may be constructed of wood planking and timbers of dimensions not less than as required for class II-A construction when not over thirty-five feet high and having an exterior separation of at least thirty feet.

(i) Signs. - Ground signs, wall signs, roof signs, and temporary signs may be constructed of combustible materials within the limitations established in article eighteen of subchapter seven of this chapter.

§[C26-403.3] 27-298 Additions to existing buildings. - No building inside the fire districts may be increased in area or height to exceed the limitations of tables 4-1 and 4-2. (See Tables 4-1 and 4-2).

ARTICLE 5 LIMITATIONS OUTSIDE THE FIRE DISTRICTS

§[C26-404.1] 27-299 Limitations. - No buildings in those combinations of construction classes and occupancy groups prohibited by tables 4-1 and 4-2 shall be erected outside the fire districts. No building or space classified in occupancy group J-1 or J-2 may be located on a lot containing a building classified in construction group I-E, II-D or II-E. No building classified in construction group I-E, II-D or II-E shall be located on a lot containing a building or space classified in occupancy group J-1 or J-2.

§[C26-404.2] 27-300 Additions to existing buildings. - No building outside of the fire districts may be increased in area or height to exceed the limitations of tables 4-1 and 4-2.

ARTICLE 6 AREA LIMITATIONS

§[C26-405.1] 27-301 Area limitations of buildings. - No building or building section shall be constructed or altered so as to exceed the area limits established by tables 4-1 and 4-2 based on the occupancy group classification of the building or building section, except as these may be specifically modified by other provisions of this code.

§[C26-405.2] 27-302 Area limitations of spaces. - No occupancy within a building or building section shall be constructed or altered so as to exceed in total cumulative area the area limits established by tables 4-1 and 4-2, except as these may be specifically modified by other provisions of this code.

§[C26-405.3] 27-303 Frontage increase. - When a building has more than twenty-five per cent of the total perimeter of the building fronting directly upon a street or frontage space, the tabular areas listed in tables 4-1 and 4-2 may be increased 1.33 per cent for each one per cent of such excess frontage.

§[C26-405.4] 27-304 Existing excessive area. - Any building existing on December sixth, nineteen hundred sixty-eight that exceeds the maximum allowable area permitted under the provisions of this section, may be enlarged if the addition is separated from the existing building by a fire division meeting the requirements of subchapter five of this chapter, and if the additional area does not exceed the limits established by tables 4-1 and 4-2 for the specific occupancy group and construction class.

ARTICLE 7 HEIGHT LIMITATIONS

§[C26-406.1] 27-305 Height limitations of buildings. - No building or building section shall be constructed or altered so as to exceed the height limits established by tables 4-1 and 4-2 based on the occupancy group classification of the building or building section, except as these may be specifically modified by other provisions of this code.

§[C26-406.2] 27-306 Measurement. - In applying the provisions of this code governing height limits, the following appurtenant structures shall not be included in the height of the building unless the aggregate area of all such structures exceeds thirty-three and one-third percent of the area of the roof of the building upon which they are erected:

(a) Roof tanks and their supports.
(b) Ventilating, air conditioning, and similar building service equipment.
(c) Roof structures, bulkheads, and penthouses.
(d) Chimneys.
(e) Parapet walls four feet or less in height.

*TABLE 4-1 AREA AND HEIGHT LIMITATIONS FOR UNSPRINKLERED BUILDINGS AND SPACES

Occupancy Group		NONCOMBUSTIBLE CONSTRUCTION GROUP I					COMBUSTIBLE CONSTRUCTION GROUP II				
		Class IA	Class IB	Class IC	Class ID	Class IE	Class IIA	Class IIB	Class IIC	Class IID	Class IIE
HIGH HAZARD A[e]	Area	N. P.	N. P.	N. P.	N. P.	N. P.	N. P.	N. P.	N. P.	N. P.	N. P.
	Height										
STORAGE B-1	Area	1,000	1,000	1,000	1,000	1,000	1,000	1,000	N. P.	1,000	N. P.
	Height	75'-0"	75'-0"	65'-0"(5)	65'-0"(5)	40'-0"(3)	50'-0"(4)	50'-0"(4)		40'-0"(3)	
STORAGE B-2[b]	Area	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	2,100
	Height	75'-0"	N.L.	75'-0"	75'-0"(6)	40'-0"(3)	75'-0"(6)	75'-0"(6)	40'-0"(3)	40'-0"(3)	40'-0"(3)
MERCANTILE C	Area	7,500	7,500	7,500	7,500	7,500	7,500	7,500	5,600	8,400	2,100
	Height	75'-0"	75'-0"	75'-0"	75'-0"(6)	40'-0"(3)	75'-0"(6)	75'-0"(6)	40'-0"(3)	40'-0"(3)	40'-0"(3)
INDUSTRIAL D-1	Area	7,500	7,500	7,500	7,500	3,500	7,500	7,500	N. P.	1,400	N. P.
	Height	75'-0"	75'-0"	65'-0"(5)	65'-0"(5)	40'-0"(3)	50'-0"(4)	50'-0"(4)		40'-0"(3)	
INDUSTRIAL D-2	Area	N.L.	N.L.	N.L.	17,500	10,500	14,700	14,700	5,600	8,400	2,100
	Height	75'-0"	75'-0"	75'-0"	75'-0"(6)	40'-0"(3)	75'-0"(6)	75'-0"(6)	40'-0"(3)	40'-0"(3)	40'-0"(3)
BUSINESS E	Area	75'-0"[d,f]	75'-0"[d,f]	N.L. 75'-0"[d,f]	75'-0"[d,f]	10,500	14,700	14,700	5,600	8,400	2,100
	Height					40'-0"(3)	75'-0"(6)	75'-0"(6)	40'-0"(3)	40'-0"(3)	40'-0"(3)
ASSEMBLY F-1	Area	75'-0"	75'-0"	N.L.	17,500	10,500	14,700	14,700	5,600	8,400	2,100
	Height			75'-0"	75'-0"(6)	40'-0"(3)	75'-0"(6)	75'-0"(6)	40'-0"(3)	40'-0"(3)	40'-0"(3)
ASSEMBLY F-2[c]	Area	N.L.	N.L.	N.L.	N.L.	17,500	N.L.	N.L.	12,600	15,400	9,100
	Height					75'-0"(6)	75'-0"(6)	75'-0"(6)	65'-0"(5)	75'-0"(6)	65'-0"(5)
ASSEMBLY F-3	Area	75'-0"	75'-0"	N.L.	17,500	10,500	14,700	14,700	5,600	8,400	2,100
	Height			75'-0"	75'-0"(6)	40'-0"(3)	75'-0"(6)	75'-0"(6)	40'-0"(3)	40'-0"(3)	40'-0"(3)
ASSEMBLY F-4[g]	Area	75'-0"	75'-0"	N.L.	17,500	10,500	14,700	14,700	5,600	8,400	2,100
	Height			75'-0"	75'-0"(6)	40'-0"(3)	75'-0"(6)	75'-0"(6)	40'-0"(3)	40'-0"(3)	40'-0"(3)
EDUCATIONAL G	Area	N.L.	75'-0"	N.L.	17,500	10,500	14,700	14,700	5,600	8,400	2,100
	Height	75'-0"		75'-0"	75'-0"(6)	40'-0"(3)	75'-0"(6)	75'-0"(6)	40'-0"(3)	40'-0"(3)	40'-0"(3)
INSTITUTIONAL H-1	Area	17,500	14,000	10,500	7,000	N.P.	4,200	4,200	N. P.	N. P.	N. P.
	Height	N.L.	75'-0"	65'-0"(5)	50'-0"(4)		50'-0"(4)	50'-0"(4)			
INSTITUTIONAL H-2	Area	17,500	14,000	10,500	7,000	N.P.	4,200	4,200	N. P.	N. P.	N. P.
	Height	N.L.	75'-0"	65'-0"(5)	50'-0"(4)		50'-0"(4)	50'-0"(4)			
RESIDENTIAL J-1	Area	N. P.	N. P.	N. P.	N. P.	N. P.	N. P.	N. P.	N. P.	N. P.	N. P.
	Height										
*RESIDENTIAL J-2 When Constructed Subject to the Requirements of §27-954(t) or Altered Subject to the Requirements of §27-123.2	Area	N. P.	N. P.	N. P.	N. P.	N. P.	N. P.	N. P.	N. P.	N. P.	N. P.
	Height										
*RESIDENTIAL J-2 When Not Subject to the Requirements of §27-954(t) or Altered Subject to the Requirements of §27-123.2	Area	N.L.	N.L.	N.L.	17,500	N. P.	10,000	10,000	5,600	N. P.	N. P.
	Height			75'-0"	75'-0"(6)		75'-0"(6)	75'-0"(6)	40'-0"(3)		
RESIDENTIAL J-3	Area	N.L.	N.L.	N.L.	17,500	10,500	14,700	14,700	5,600	8,400	2,100
	Height			75'-0"	75'-0"(6)	40'-0"(3)	75'-0"(6)	75'-0"(6)	40'-0"(3)	40'-0"(3)	40'-0"(3)

N.L.– No Limit

N.P.– Not Permitted

Not Permitted Inside Fire Districts[a]

Notes for Table 4-1:

Tabulated areas are given in sq. ft. and establish maximum gross area permitted on any one story within a building or fire area. See section 27-303 and subdivision (e) of section 27-328 for permissible area increases. Tabulated heights are given in feet and number of stories (in parentheses).

[a]See section 27-297 for construction exemptions.

[b]See article eleven of subchapter seven of chapter one of this title for area and height limitations of open parking structures.

[c]See paragraph two of subdivision (b) of section 27-548 for grandstand limitations.

[d]See subdivision (c) of section 27-339 for area limitations for existing office buildings one hundred feet or more in height with mechanical ventilation and/or air-conditioning systems that serve floors other than the floor on which the equipment is located.

[e]Spaces in occupancy group A solely due to their containing gas distribution piping at pressure levels above fifteen psig may be unsprinklered and conform with the area and height limitations set forth in table 4-2, provided other fire protection requirements set forth in section 27-404 and subchapters five and seventeen of chapter one of this title are met.

[f]See section 27-954 for area limitations for buildings less than seventy-five ft. in height.

[g]See subdivisions (u) and (v) of section 27-954 for requirements pertaining to F-4 spaces within J-1 buildings, catering establishments and banquet halls with occupant load of three hundred or more persons.

[*]***Local Law 10-1999.***

TABLE 4-2 AREA AND HEIGHT LIMITATIONS FOR SPRINKLERED BUILDINGS AND SPACES

Occupancy Group		NONCOMBUSTIBLE CONSTRUCTION GROUP I					COMBUSTIBLE CONSTRUCTION GROUP II				
		Class IA	Class IB	Class IC	Class ID	Class IE	Class IIA	Class IIB	Class IIC	Class IID	Class IIE
HIGH HAZARD A	Area	N.L.	17,500	14,000	10,500	3,500	7,700	7,700	N.P.	1,400	N.P.
	Height		75'-0"(6)	65'0"(5)	65'0"(5)	40'-0"(3)	50'-0"(4)	50'-0"(4)		50'-0"(4)	
STORAGE B-1	Area	N.L.	N.L.	N.L.	17,500	10,500	14,700	14,700	5,600	8,400	2,100
	Height			85'-0"(7)	75'-0"(6)	50'-0"(4)	75'-0"(6)	75'-0"(6)	40'-0"(3)	50'-0"(4)	40'-0"(3)
STORAGE B-2[b]	Area	N.L.	N.L.	N.L.	N.L.	17,500	N.L.	N.L.	12,600	15,400	9,100
	Height				85'-0"(7)	50'-0"(4)	85'-0"(7)	85'-0"(7)	50'-0"(4)	50'-0"(4)	50'-0"(4)
MERCANTILE C	Area	N.L.	N.L.	N.L.	N.L.	17,500	N.L.	N.L.	12,600	15,400	9,100
	Height				85'-0"(7)	50'-0"(4)	85'-0"(7)	85'-0"(7)	50'-0"(4)	50'-0"(4)	50'-0"(4)
INDUSTRIAL D-1	Area	N.L.	N.L.	N.L.	17,500	10,500	14,700	14,700	5,600	8,400	2,100
	Height			85'-0"(7)	75'-0"(6)	50'-0"(4)	75'-0"(6)	75'-0"(6)	40'-0"(3)	50'-0"(4)	40'-0"(3)
INDUSTRIAL D-2	Area	N.L.	N.L.	N.L.	N.L.	17,500	N.L.	N.L.	12,600	15,400	9,100
	Height				85'-0"(7)	50'-0"(4)	85'-0"(7)	85'-0"(7)	50'-0"(4)	50'-0"(4)	50'-0"(4)
BUSINESS E	Area	N.L.	N.L.	N.L.	N.L.	17,500	N.L.	N.L.	12,600	15,400	9,100
	Height				85'-0"(7)	50'-0"(4)	85'-0"(7)	85'-0"(7)	50'-0"(4)	50'-0"(4)	50'-0"(4)
ASSEMBLY F-1	Area	N.L.	N.L.	N.L.	N.L.	17,500	N.L.	N.L.	12,600	15,400	9,100
	Height				85'-0"(7)	50'-0"(4)	85'-0"(7)	85'-0"(7)	50'-0"(4)	50'-0"(4)	50'-0"(4)
ASSEMBLY F-2	Area	N.L.	N.L.	N.L.	N.L.	N.L.	N.L.	N.L.	19,600	N.L.	16,100
	Height				85'-0"(7)				75'-0"(6)		75'-0"(6)
ASSEMBLY F-3	Area	N.L.	N.L.	N.L.	N.L.	17,500	N.L.	N.L.	12,600	15,400	9,100
	Height				85'-0"(7)	75'-0"(4)	85'-0"(7)	85'-0"(7)	50'-0"(4)	50'-0"(4)	50'-0"(4)
ASSEMBLY F-4	Area	N.L.	N.L.	N.L.	N.L.	17,500	N.L.	N.L.	12,600	15,400	9,100
	Height				85'-0"(7)	75'-0"(4)	85'-0"(7)	85'-0"(7)	50'-0"(4)	50'-0"(4)	50'-0"(4)
EDUCATIONAL G	Area	N.L.	N.L.	N.L.	N.L.	17,500	N.L.	N.L.	12,600	15,400	9,100
	Height				85'-0"(7)	75'-0"(4)	85'-0"(7)	85'-0"(7)	50'-0"(4)	50'-0"(4)	50'-0"(4)
INSTITUTIONAL H-1	Area	N.L.	N.L.	17,500	11,200	7,000	11,200	11,200	3,500	4,000	N.P.
	Height		85'-0"(7)	75'-0"(6)	65'-0"(5)	50'-0"(4)	65'-0"(5)	65'-0"(5)	40'-0"(3)	50'-0"(4)	
INSTITUTIONAL H-2	Area	N.L.	N.L.	17,500	11,200	7,000	11,200	11,200	3,500	4,000	N.P.
	Height		85'-0"(7)	75'-0"(6)	65'-0"(5)	50'-0"(4)	65'-0"(5)	65'-0"(5)	40'-0"(3)	50'-0"(4)	
RESIDENTIAL J-1	Area	N.L.	N.L.	N.L.	N.L.	N.P.	N.L.	N.L.	N.P.	N.P.	N.P.
	Height				85'-0"(7)		85'-0"(7)	85'-0"(7)			
RESIDENTIAL J-2	Area	N.L.	N.L.	N.L.	N.L.	N.P.	N.L.	N.L.	12,600	N.P.	N.P.
	Height				85'-0"(7)		85'-0"(7)	85'-0"(7)	50'-0"(4)		
RESIDENTIAL J-3	Area	N.L.	N.L.	N.L.	N.L.	17,500	N.L.	N.L.	12,600	15,400	9,100
	Height				85'-0"(7)	50'-0"(4)	85'-0"(7)	85'-0"(7)	50'-0"(4)	50'-0"(4)	50'-0"(4)

N.L. — No Limit

N.P.—Not Permitted

Not permitted inside Fire Districts[a]

Notes for Table 4-2:
Tabulated areas are given in square feet and establish maximum gross area permitted on any one story within a building or fire area. See section 27-303 for permissible area increases. Tabulated heights are given in feet and number of stories (in parentheses).
[a] See section 27-297 for construction exemptions.
[b] See article eleven of subchapter seven of this chapter for area and height limitations of open parking structures.

ARTICLE 8 GENERAL PROJECTION LIMITATIONS

§[C26-407.1] 27-307 Permissible projections beyond the street line. - No part of a new building, or of any alteration or addition to an existing building, shall be constructed to extend beyond the street line, except as specifically provided in this subchapter.

***§[C26-407.2] 27-308 Ramps. –**
(a) When a building erected prior to December sixth, nineteen hundred sixty-nine is altered to provide access to individuals who use wheelchairs, ramps constructed to provide such access may, with the approval of the commissioner, project beyond the street line for a distance of not more than forty-four inches.
(b) Ramps shall comply with the applicable provisions of reference standard RS 4-6.
****Local Law 58-1987.***

§[C26-407.3] 27-309 Special restrictions. - The provisions of this subchapter shall not authorize any projections beyond the street line on those streets where removal of all, or certain projects has been directed by any action of the board of estimate or the former board of estimate and apportionment, or which has been, or may be, directed by any action of the council or the board of estimate, except those projections that are permitted in conformity with such actions.

§[C26-407.4] 27-310 Projections removable. - All projections permitted beyond the street line by the provisions of this subchapter shall be constructed so that they may be removed at any time without endangering the structural safety or fire safety of the building except that footings as permitted under subdivision (a) of section 27-314 of article nine of this subchapter need not be removable.

§[C26-407.5] 27-311 Permission revocable. - Any permission, expressed or implied, permitting the construction of projections within the area of the street under the provisions of this subchapter shall be revocable by the council or the board of estimate, except footings as permitted under subdivision (a) of section 27-314 of article nine of this subchapter.

§[C26-407.6] 27-312 Existing projections. - Any part of a building that projects beyond a street line on January first, nineteen hundred thirty-eight may be maintained as constructed until its removal is directed by the council or the board of estimate.
(a) Alterations. –
Alterations to existing projections beyond the street line may be permitted in whole or in part, provided that such alterations conform with the requirements of this subchapter.

ARTICLE 9 PERMISSIBLE PROJECTIONS BEYOND STREET LINES

§[C26-408.1] 27-313 Projections above grade. - Subject to the provisions of article eight of this subchapter the following projections may be constructed, above grade, to project beyond the street line:
(a) Fixed Projections. - Fixed projections are those elements listed below, generally of an architectural character, that form an integral part of the building facade. The aggregate area of all fixed projections constructed to extend beyond the street line shall not exceed ten square feet within any one hundred square feet of wall area, except that a veneer may be applied to the entire facade of a building erected before December sixth, nineteen hundred sixty-eight, if such veneer does not project more than four inches beyond the street line. The area of any fixed projection shall be measured at that vertical plane, parallel to the wall, in which the area of the projection is greatest. This plane of measurement may be at the street line, the line of maximum projection, or any point in between.
(1) ENTRANCE DETAILS. - Entrance details, including steps, and doors when fully open, may be constructed to project beyond the street line not more than eighteen inches. Entrance steps that project beyond the street line shall be guarded at each end by railings or check pieces at least three feet high or by other members of the entrance detail providing equivalent protection.
(2) ARCHITECTURAL DETAILS. - Details such as cornices, eaves, bases, sills, headers, band course, opening frames, sun control devices, rustications, applied ornament or sculpture, grilles, windows when fully open, air conditioning units, and other similar elements may be constructed to project not more than four inches beyond the street line when less than ten feet above the ground or sidewalk level, and not more than ten inches beyond the street line when more than ten feet above the ground or sidewalk level.
(3) BALCONIES. -Balconies, including railings and supporting brackets, no parts of which are less than ten

feet above the ground or sidewalk level, may be constructed to project not more than twenty-two inches beyond the street line. When permitted by the provisions of subchapter six of this chapter, fire escapes that are part of a required exit may be constructed to project not more than four feet six inches beyond the street line provided no part, including any movable ladder or stair, is lower than ten feet above the ground or sidewalk level when not in use.

(4) MARQUEES. - Marquees may be erected on public buildings, theaters, hotels, terminals, large department stores, supermarkets, multi-family dwellings, and similar buildings of an essentially public nature, or upon a warehouse or market in an established market area as designated by reference standard RS 4-3, so as to project beyond the street line, but not nearer than two feet to the curb line, provided that no parts of such marquees are less than ten feet above the ground or sidewalk level. Marquees must not be more than two feet to curb lines hereafter established or changed. When measured from top to bottom, marquees shall not be thicker nor shall the fascia be higher than three feet. This dimension shall include all decorations, but shall exclude any tension supports suspending the marquee from the wall. Marquees shall be supported entirely from the building and be constructed of noncombustible materials, except that the roof or any part of the roof may contain skylights complying with the requirements of subdivision (d) of section 27-338 of article four of subchapter five of this chapter. Marquee roofs shall be drained in accordance with the provisions of subchapter sixteen of this chapter. When the occupancy or use of a building with a marquee projecting beyond the street line is changed to occupancy or use for which a marquee is not permitted by this section the marquee shall be removed.

(5) LIGHT FIXTURES. - Light fixtures that are supported entirely from the building may be constructed to project not more than two feet beyond the street line, provided no part of the fixture is less than eight feet above the ground or sidewalk level.

(6) FLAGPOLES. - Flagpoles that are supported entirely from the building may be constructed to project not more than eighteen feet beyond the street line, but not closer than two feet to the curb line, provided that no part of the flagpole is less than fifteen feet above the ground or sidewalk level.

(7) WALL SIGNS. - Wall signs may be constructed to project not more than twelve inches beyond the street line when conforming to the requirements of subchapter seven of this chapter.

(8) PROJECTING SIGNS. - Projecting signs may be constructed to project not more than ten feet beyond the street line, but not closer than two feet to the curb line, when conforming to the requirements of subchapter seven of this chapter, and provided that no part of the sign is less than ten feet above the ground or sidewalk level.

(b) Awnings. - Awnings supported entirely from the building may be constructed to project beyond the street line as follows:

(1) STORE FRONT AWNINGS. - Store front awnings may be constructed to project beyond the street line not more than eight feet, provided no part of the awning is less than eight feet above the ground or sidewalk level, except for a flexible valance, which may be not less than seven feet above the ground or sidewalk level, and provided that the awning box or cover does not project more than twelve inches.

(2) AWNINGS. - Awnings over windows or doors may be constructed to project beyond the street line not more than five feet, provided that no part of the awning is less than eight feet above the ground or sidewalk level.

(3) CONSTRUCTION. - Awnings shall be constructed of a noncombustible frame covered with flameproofed canvas or cloth, slow-burning plastic, sheet metal, or other equivalent material.

(c) Storm enclosures. -Storm enclosures projecting not more than eighteen inches beyond the street line may be permitted during the period between November fifteenth and the following April fifteenth. Such enclosures shall be removed at the end of this period. Construction shall follow the requirements of section 27-336 of subchapter five of this chapter.

(d) Bridges between buildings. - Bridges connecting buildings, and projecting beyond street lines, may be constructed subject to the approval of the board of estimate and the department of highways. Such bridges shall be of a construction class that is at least equal to the higher class of the two buildings connected, and shall otherwise comply with the provisions of this code and other applicable laws and regulations**.**

(e) Sidewalk cafes. - (1) Enclosures for sidewalk cafes, where permitted by the commissioner of consumer affairs, may be provided beyond the building line, within a street, provided such enclosures are constructed of incombustible material or slow-burning plastic or other material which will not support combustion, and provided the sides of such enclosures do not extend more than eight feet above the sidewalk**.**

(2) Awnings supported entirely from the building may be placed over sidewalk cafes provided they are at least eight feet clear above the sidewalk and provided they are within the limits specified by the commissioner of consumer affairs. Such awnings shall be supported on metal frames and constructed of canvas treated to render it fire-resistive or other material, which will not support combustion.

(3) No part of any awning, enclosure, fixture or equipment of a sidewalk cafe shall be located beneath a fire-escape so as to obstruct operation of fire-escape

drop ladders or counter-balanced stairs or to obstruct any exit from a building.
(4) a. Removable platforms shall be constructed to provide for a continuous unbroken and level floor without openings or cracks so as to prevent any material or liquid from falling through to the area beneath; no papers, trash or other materials may be permitted to accumulate in the area beneath the floor of the platform.
b. No part of the platform shall obstruct an exit from any building.
c. No part of the platform shall cover a cellar entrance, areaway or other vent, except that an easily removable section, prominently designated, will be permitted if acceptable to the commissioner.
d. No siamese connection or hydrant may be obstructed in any way that would hinder its use by the fire department.
(5) In addition to the requirements specified herein, the commissioner may promulgate such additional regulations necessary to secure safety.
(f) Curb cuts. - The lowering of any curb or the change of grade of any sidewalk for the purpose of providing a driveway across such curb or sidewalk shall be constructed in accordance with the specifications prescribed in section 27-558 of article three of subchapter nine of this chapter or as required by the commissioner. The commissioner shall limit the length of any curb cut for the purpose of providing a driveway across such curb or sidewalk, when in the opinion of the commissioner the actual use or intended use of such driveway would endanger the public. The owner shall maintain every part of such driveway in accordance with the specifications prescribed in section 27-558 of article three of subchapter nine of this chapter. Where the vehicular use of such driveway, in the opinion of the commissioner is dangerous to the public, the commissioner shall order the owner to discontinue use of such driveway and restore the curb and sidewalk as required by the department of transportation. Upon the failure of the owner to comply with such order, the commissioner may inform the commissioner of transportation of such failure to comply and request the cooperation of the commissioner of transportation acting under his or her authority pursuant to section twenty-nine hundred four of the New York city charter in the enforcement of this section.

§[C26-408.2] 27-314 Projections below grade. - Subject to the provisions of article eight of this subchapter the following projections may be constructed below grade to project beyond the street line:
(a) Footings. - Exterior wall and column footings may be constructed to project beyond the street line not more than twelve inches, provided that the top of the footing is not less than eight feet below the ground or sidewalk level.
(b) Foundation walls. - Foundation walls required to support permitted projections may be constructed to project not more than the permitted projection beyond the street line.
(c) Vaults. - Vaults licensed by the commissioner of transportation may be constructed to project beyond the street line but not beyond the curb line. Vault covers shall be set flush with the sidewalk and surfaced with non-skid material.
(d) Tunnels between buildings. –
Tunnels connecting buildings, and projecting beyond street lines, may be constructed subject to the approval of the board of estimate and the department of transportation. Such tunnels shall comply with the provisions of this code and other applicable laws and regulations.

***§[C26-408.3] 27-315- Restrictions on construction and projections on certain streets, parkways, boardwalks and beaches. -**
Notwithstanding the foregoing provisions of this article, it shall be unlawful to build, erect, make areaways, steps or other projection s prohibited by sections 19-131, 19-132, 19-135 of the code.
* ***Local Law 104-1993.***

*ARTICLE 10 GENERAL LIMITATIONS ON OCCUPANCY AND CONSTRUCTION WITHIN SPECIAL FLOOD HAZARD AREAS

§[C26-409.1] 27-316 Permit restrictions. - Within special flood hazard areas, as delineated in reference standard RS 4-4, applications for permits shall be subject to the following:
(a) Permissible uses and other measures to reduce flood losses shall take precedence over any conflicting laws.
(b) Major repairs or alterations shall be with construction materials and utility equipment that are resistant to flood damage, and use construction methods and practices that will minimize flood damage.
(c) New and proposed construction or substantial improvements shall be protected against flood damage, be designed (or modified) and anchored to prevent flotation, collapse, or lateral movements of the structure, use construction materials and utility equipment that are resistant to flood damage, and use construction methods and practices that will minimize flood damage.
(d) New and proposed developments and construction shall minimize flood damage, locate, elevate and construct all public utilities such as gas, sewer, electrical and water systems to minimize or eliminate flood damage, and provide adequate drainage so as to reduce exposure to flood hazards.

(e) New or replacement water supply systems and/or sanitary sewage systems shall be designed to minimize or eliminate infiltration of floodwaters into the systems, and discharges from the systems into floodwaters, and require on-site disposal systems to be located so as to avoid impairment of them or contamination from them during flooding.
(f) Subdivision proposals and other proposed new developments and construction shall (i) minimize flood damage, (ii) have all public utilities, such as sewer, gas, electrical and water systems located and constructed to minimize or eliminate flood damage, and (iii) provide adequate drainage so as to reduce exposure to flood hazards.
(g) Upon placement of the lowest floor, or flood-proofing by any means, the holder of any permit to which this section applies shall submit to the department a certification of the elevation of the lowest floor, or where applicable of the lowest flood-proofed elevation, in relation to mean sea level. Provided, however, that in areas designated as Zone V in reference RS 4-4, such permit holder shall certify to the department the elevation, in relation to mean sea level, of the bottom of the lowest structural member of the lowest floor. Such certification shall be prepared by a registered architect or licensed professional engineer.
(h) Compliance with the foregoing shall be accomplished in accordance with sections 27-317, 27-317.1, 27-317.2, 27-550, 27-580, 27-652, 27-771, 27-787 and subdivision (aa) of section 27-901 of this title and reference standards RS 4-4 and RS 4-5.

§ 27-316.1 Permit application contents. - Applications for permits for construction within special flood hazard areas, as delineated in reference standard RS 4-4, shall contain the following information:
(a) the elevation in relation to mean sea level of the proposed lowest floor (including basement or cellar);
(b) for non-residential structures, the elevation in relation to mean sea level to which such structure will be flood-proofed;
(c) a certification from a registered architect or licensed professional engineer that heating, ventilation, air conditioning, plumbing, electrical and other services facilities within the structure will be located or constructed so as to prevent water from entering or accumulating within the components during conditions of flooding;
(d) for non-residential structures intended to be floodproofed, a certification from a registered architect or licensed professional engineer that the flood-proofing design and methods of construction of such structure are in accordance with reference standard RS 4-5 and with accepted standards of practice to make such structure watertight, with walls substantially impermeable to the passage of water, and with structural components having the capability of resisting hydrostatic and hydrodynamic loads and effects of buoyancy;
(e) for structures within Zone V, as delineated in reference standard RS 4-4, a certification from a registered architect or licensed professional engineer that the design and methods of construction of such structure are in accordance with reference standard RS 4-5 and with accepted standards of practice for meeting the requirements of subdivision (f) of section 27-317 of this code; and
(f) a description, where applicable, of the extent to which any watercourse will be altered or relocated as a result of the proposed work.

§[C26-409.2] 27-317 Occupancy and construction restrictions. -
(a) Within special flood hazard areas, as delineated in reference standard RS 4-4, no building in occupancy group classification J1, J2 or J3 shall be constructed or altered so as to have the lowest floor below the base flood elevation.
(b) New construction or substantial improvements of non-residential buildings within special flood hazard areas, as delineated in reference standard RS 4-4, shall have the lowest floor elevated to or above the base flood elevation; or, together with attendant utilities and sanitary facilities, shall be floodproofed up to the level of the base flood elevation, in accordance with the requirement of reference standard RS 4-5. Provided, however, that new construction or substantial improvements of non-residential buildings within area designated as Zone V in reference standard RS 4-4 shall meet the requirements of subdivision (f) of this section.
(c) Any encroachment in the floodway, as delineated in reference standard RS 4-4, including fill, new construction, substantial improvement, or any other development that would result in any increase in flood levels within the community during the occurrence of the base flood discharge, shall be prohibited.
(d) Manufactured homes shall be anchored to resist flotation, collapse or lateral movement and shall be elevated on a permanent foundation to or above the base flood elevation or, when no base flood elevation has been determined, two feet above the highest adjacent grade. Methods of anchoring may include, but are not limited to, use of over-the-top or frame ties to ground anchors. No park trailers or travel trailers shall be permitted within special flood hazard areas, as delineated in reference standard RS 4-4.
(e) In the case of alterations constituting a substantial improvement to parts of non-residential and non-institutional buildings below the base flood elevation, all parts below the base flood elevation need comply with the applicable requirements of reference standard RS 4-5.
(f) All new construction and substantial improvements

of buildings within Zone V, as delineated in reference standard RS 4-4, shall be performed pursuant to the provisions of RS 4-5. Such construction and improvements shall have the lowest floor elevated on adequately anchored pilings or columns and securely anchored to such piles or columns to prevent flotation, collapse or lateral movement resulting from the simultaneous action of wind and water loads on all building components, and, the lowest portion of the structural members of the lowest floor, other than the pilings or columns, shall be elevated to or above the base flood elevation. For purposes of this subdivision, wind and water loading values shall each have a one percent chance of being equalled or exceeded in any given year (one hundred year mean recurrence interval). In addition:

(1) The installation of anchoring to anchored pilings or columns shall be subject to controlled inspection.

(2) The space below the lowest floor shall be free of obstruction or, alternatively, such space shall be constructed with break-away walls of an open lattice type construction, which is intended to collapse under stress from abnormally high tides or wind driven water without jeopardizing the structural support of the building. Such space shall not be used for human habitation.

(3) The use of fill for structural support of buildings within Zone V shall not be permitted.

(4) The man-made alteration of sand dunes within Zone V which would increase potential flood damage to buildings shall not be permitted.

(5) All new construction within Zone V shall be located landward of the reach of mean high tide.

(g) All new construction and substantial improvements of buildings within Zone A, as delineated in reference standard RS 4-4 shall be performed pursuant to the provisions of reference standard RS 4-5. Where such construction or improvement is not floodproofed, any fully enclosed space below the lowest floor that is subject to flooding, as defined in section 27-317.1 of this code, shall be designed to equalize hydrostatic flood forces on exterior walls automatically (without human intervention) by allowing for the entry and exit of floodwaters. Design for meeting this requirement shall be certified by a registered architect or licensed professional engineer or shall meet or exceed the following minimum criteria:

(1) A minimum of two openings, having a total net area of not less than one square inch for every square foot of enclosed space subject to flooding, shall be provided.

(2) The bottom of all openings shall be no higher than one foot above grade.

(3) Openings may be equipped with screens, louvers, valves or other coverings or devices provided that they permit the automatic entry and exit of floodwaters.

(h) When used within special flood hazard areas, as delineated in reference standard RS 4-4, breakaway walls shall have a design safe loading resistance of not less than ten and no more than twenty pounds per square foot. Use of a breakaway wall which exceeds a design safe loading resistance of twenty pounds per square foot shall be permitted only if a registered architect or licensed professional engineer certifies that the proposed design meets the following conditions:

(1) Breakaway wall collapse will result from a water load less than that which would occur during the base flood; and

(2) the elevated portion of the building and supporting foundation system will not be subject to collapse, displacement, or other structural damage due to the effects of wind and water loads acting simultaneously on all building components (structural and non-structural). Maximum wind and water loading values used in this determination shall each have a one percent chance of being equalled or exceeded in any given year (one hundred year mean recurrence interval).

§[C26-409.3] 27-317.1 Definitions for special flood hazard areas. - The following definitions shall supplement the definitions that appear in article two of subchapter two of this chapter and shall apply only to the provisions of article ten of subchapter four of this chapter and to the reference standards contained therein:

AREA OF SPECIAL FLOOD HAZARD. - The land in the flood plain delineated in reference standard RS 4-4 as subject to a one percent or greater chance of flooding in any given year. Such area is designated on the Flood Insurance Rate Map (FIRM) as Zone A, AE, AH, AI-99, V, VE or VI-30. Such area is also known as the base flood plain or one hundred year flood plain.

BASEFLOOD. - The flood having a one percent chance of being equalled or exceeded in any given year.

BASEFLOOD ELEVATION. - The level (in feet) indicated on the Flood Insurance Rate Map (FIRM).

BREAKAWAY WALL. - wall that is not part of the structural support of the building to which it is attached and is intended through its design and construction to collapse under specific later loading forces without causing damage to the elevated portion of the building or the supporting foundation system.

DEVELOPMENT. - Any man-made change to improved or unimproved real estate, including but not limited to buildings or other structures, mining, dredging, filling, grading, paving, excavation or drilling operations located within the area of special flood hazard.

ELEVATED BUILDING. - A non-basement building (i) constructed, in an area designated as Zone A in reference standard RS 4-4, to have the top of the elevated floor, or in an area designated as Zone V in reference standard RS 4-4, to have the bottom of the

lowest horizontal structural member of the elevated floor elevated above the ground level by means of pilings, columns (posts and piers), or shear walls parallel to the flow of water, and (ii) adequately anchored so that the structural integrity of such building is not impaired during a flood of up to the magnitude of the base flood. In an area designated as Zone A in reference standard RS 4-4, such term also includes a building elevated by means of fill or solid foundation perimeter walls with openings sufficient to permit the unimpeded movement of flood waters. In an area designated as Zone V in reference standard RS 4-4, such term also includes a building otherwise meeting the definition of elevated building in which the lower area is enclosed by means of breakaway walls meeting the standards of subdivision (h) of section 27-317 of this code.

FLOOD OR FLOODING. - A general and temporary condition of partial or complete inundation of normally dry land areas resulting from:

(1) the overflow of inland or tidal waters; or

(2) the unusual and rapid accumulation or runoff of surface waters from any source.

FLOOD BOUNDARY AND FLOODWAY MAP (FBFM). - An official map issued by the Federal Emergency Management Agency on which the regulatory floodway along water courses is delineated.

FLOOD HAZARD BOUNDARY MAP (FHBM). - An official map issued by the Federal Emergency Management Agency on which areas of special flood hazard are delineated.

FLOOD INSURANCE RATE MAP (FIRM). - The official map on which the Federal Emergency Management Agency has delineated the areas of special flood hazards. Such map includes the flood boundary and floodway map and the flood hazard boundary map, as defined in this section.

FLOOD PLAIN. - Any land area susceptible to being inundated by water from any source (see "flood or flooding").

FLOOD PROOFING. - Any combination of structural and non-structural additions, changes or adjustments to structures to reduce or eliminate flood damage to real estate, improved real property, water and sanitary utilities, or structures and their contents.

FLOODWAY OR REGULATORY FLOODWAY. - The channel of a river or other watercourse and the adjacent land areas that must be reserved in order to discharge the base flood without cumulatively increasing the water surface elevation more than one foot.

HIGHEST ADJACENT GRADE. - The highest natural elevation of the ground surface, prior to construction, next to the proposed walls of a structure.

LOWEST FLOOR. - The lowest level including cellar or basement of the lowest enclosed area. For the purpose of this article, an unfinished or flood resistant enclosure, usable solely for the parking of vehicles, building access or storage in an area other than a basement, is not considered a structure's lowest floor, provided that such enclosure shall not be built so as to render the structure in violation of the requirements of subdivision (g) of section 27-317 of this code.

MANUFACTURED HOME. - A structure, transportable in one or more sections, which is built on a permanent chassis and designed to be used with or without a permanent foundation when connected to required utilities.

MIXED USE BUILDING. - Any building occupied in part for residential use, with one or more nonresidential uses located on a story below the lowest story occupied entirely by such residential use.

NATIONAL GEODETIC VERTICAL DATUM (NGVD). - A vertical control used as a reference for establishing elevations within the flood plain, as provided in section 27-158 of this code.

NEW CONSTRUCTION. - Buildings for which the “start of construction” commenced on or after November sixteenth, nineteen hundred eighty-three.

SAND DUNES. - Naturally occurring accumulations of sand in ridges or mounds landward of a beach.

START OF CONSTRUCTION. - The date on which the building permits was issued, provided, however, that the actual start of construction, repair, reconstruction, placement or substantial improvement is within one hundred eighty days of such date. "Actual start" means either the first placement of permanent construction of a building on a site, such as pile driving, the pouring of slabs, or footings, or any work beyond the stage of excavation; or, for a building without a cellar, basement or poured footings, the first permanent framing or assembly of such building or any part thereof on its piling or foundations. "Permanent construction" does not include land preparation, such as clearing, grading and filling; nor does it include excavation for a cellar, basement, footings, piers or foundations or the erection of temporary forms; nor does it include the installation on the property of accessory buildings, such as garages or sheds not occupied as dwelling units or not as part of the main building.

SUBSTANTIAL IMPROVEMENT. - Any repair, reconstruction, alteration, or improvement of a building, the cost of which equals or exceeds fifty percent of its market value either:

(1) before the alteration, improvement, or repair is started, or

(2) if the building has been damaged and is being restored, before such damage occurred.

For the purposes of this definition, "substantial improvement" is considered to occur when the first alteration of any wall, ceiling, floor, or other structural parts of the building commences, whether or not that alteration affects the external dimensions of the

building. The term "substantial improvement" does not, however, include either:
(1) any project for improvement of a building to comply with state or local health, sanitary, or safety code specifications which are solely necessary to assure safe conditions, or
(2) any alteration of a building designated as worthy of preservation because of historic or architectural importance, or a building within an area so designated by the landmarks preservation commission, or listed on the national register of historic places or state inventory of historic places.
ZONE A. - A symbol used on the flood insurance rate map to designate an area of special flood hazard without velocity (wave action). When not shown on the flood insurance rate map, the water surface elevation may be determined from available data by the registered architect or licensed professional engineer of record.
ZONE V. - A symbol used on the flood insurance rate map to designate an area of special flood hazard with velocity (wave action). When not shown on the flood insurance rate map, the water surface elevation may be determined from available data by the registered architect or licensed professional engineer of record.

§[C26-409.4] 27-317.2 Exceptions within special flood hazard areas. - Mixed use buildings may be constructed within Zone A, as delineated in reference standard RS 4-4, with non-habitable portions below the base flood elevation, provided all of the following conditions are met:
(a) The building is constructed so as to provide entrance access at or above the base flood elevation.
(b) The portion of the building and all service equipment below the base flood elevation are floodproofed, in accordance with reference standard RS 4-5.
(c) No habitable rooms may be located in such cellar or basement.
(d) A water closet and/or a wash basin may be located in an enclosed space not to exceed four feet by four feet six inches in such cellar or basement, and no roughing therein shall be allowed to accommodate any additional fixtures.
(e) No accessory kitchens shall be allowed in such cellar or basement; however, one two-compartment laundry tray or similar appliance may be installed outside the water closet compartment.
**(f) The building permit application filed with the department of buildings or the work permit application filed with the department of ports and trade shall state that:
(1) The premises is located within the special flood hazard area;
(2) The cellar or basement is located below the level of the base flood elevation; and
(3) No portion of the cellar or basement may be used for living purposes.
**(g) A deed restriction noting all of the above is to be recorded in the county clerk's office and the page and liber number indicated on either the building permit application and certificate of occupancy filed with and issued by the department of buildings or the work permit application and the certificate of completion filed with and issued by the department of ports and trade.
Local Law 14 -1989.
Local Law 33-1988.

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SUBCHAPTER 5
FIRE PROTECTION CONSTRUCTION REQUIREMENTS

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****"27" omitted from section numbers in this column.***

ARTICLE 1 GENERAL

§[C26-500.1] 27-318 Scope. - The provisions of this subchapter shall govern the use and assembly of all materials of construction with respect to fire resistance, flame spread resistance, and smoke and toxic fume limitation. The provisions shall also control the location and function of integral structural and fire protective elements of buildings, and provide for the installation of safeguards against the spread of fire within buildings and between buildings.

§[C26-500.2] 27-319 Standards. - The provisions of the reference standard RS-5 shall be a part of this subchapter.

§[C26-500.3] 27-320 Definitions. - For definitions to be used in the interpretation of this subchapter, see subchapter two of this chapter.

§[C26-500.4] 27-321 Use of combustibles. - The use of combustible component materials in units or assemblies shall be limited to construction group II, except as hereinafter expressly permitted in construction group I. Combustible aggregates may be integrated with other materials to form a noncombustible material provided that the entire mixture, in the form in which it is to be used in construction, meets the requirement of this code for noncombustibility.

ARTICLE 2 FIRE PROTECTION TEST PROCEDURES

§[C26-501.1] 27-322 Tests. - Samples of all materials or assemblies of materials required by this code to have a fire-resistance rating, fire-protection rating, or flame spread rating, or required to be noncombustible, fire-retardant treated, or slow burning, shall be tested under the applicable test procedures specified herein, in accordance with the acceptance requirements of section 27-131 of article seven of subchapter one of this chapter. The fire-resistance rating of materials and assemblies listed in reference standard RS 5-1 may be used to determine conformance with the fire resistance requirements of this code. In addition to the performance results, test reports shall give all technical data pertaining to the nature of the constituent materials, such as the physical properties, chemical composition and properties, coefficient of expansion, thicknesses of materials, etc. Except as listed in reference standard RS 5-1, any assembly using a component having a structural base of noncombustible material covered with an integrally manufactured combustible surfacing material, shall be approved for fire-resistance rating**.**

ARTICLE 3 FIRE-RESISTANCE REQUIREMENTS

§[C26-502.1] 27-323 Requirements for structural members and assemblies. - The fire-resistance rating of construction assemblies and the protection of structural members shall comply with the requirements of table 3-4, based on the test procedures of reference standard RS 5-2, and their materials or combinations of materials shall be in accordance with the specifications of materials used in the test.

***§[C26-502.2] 27-324 Protection of structural members.-** Columns, girders, trusses, beams, lintels, etc. that are required to be fire protected, and that support only one floor or a roof, and/or a non-bearing wall not more than one story high, shall be individually encased on all sides with materials having the required fire-resistance rating; or shall be protected by a ceiling as specified in section 27-327 of this article having the required fire-resistance rating; or shall be protected by a combination of both a ceiling and individual encasement which, together, provide the required fire-resistance rating. Columns, girders, trusses, beams, lintels, etc. that are required to be fire protected, and that support more than one floor or support a bearing wall or wall more than one story high, shall be individually encased on all sides for their entire length or height with materials having the required fire-resistance rating. Trusses that support only two stories or one story and a roof may be fire protected by an envelope that encompasses the entire truss with materials of the required fire-resistance rating.

(a) Embedments and enclosures. - Pipes, wires, conduits, ducts, or other service facilities shall not be embedded in the required fire protection of a structural member that is required to be individually encased; except that pipes, wires, and conduits may be installed in the space between the required fire protection and the structural member protected, provided that where such facilities pierce the required fire protection, the area of the penetrations does not exceed two percent of the area of the fire protection on any one face, the penetrations are closed off with close-fitting metal escutcheons or plates and the concealed space shall be firestopped at each story in accordance with the provisions of section 27-345 of article five of this subchapter.

(b) Impact protection. - Where the fire protective covering of a structural member is subject to impact damage from moving vehicles, the handling of merchandise, or other activity, the fire protective covering shall be protected by corner guards or by a substantial jacket of metal or other noncombustible material, to a height adequate to provide full protection. Where applicable, such protection shall be designed in accordance with the requirements of section 27-558 of article three of subchapter nine of this chapter**.**

(c) Structural members in cavity walls. - Where structural members occur within exterior cavity walls,

portions of such structural members facing the exterior need not be individually fire protected if the outer width of the cavity wall provides the required fire-resistance rating and is located not more than two and one-half inches from such structural members, and if all surfaces of the structural members are fire protected from the interior of the building by materials having the required fire-resistance rating.

(d) Prestressing steel. - Minimum covering of prestressing steel shall comply with the requirements of reference standard RS 5-15.

(e) Exterior exposed structural members. -Structural members exposed to the outdoors on buildings that do not exceed two stories or thirty feet in height, which are required by table 3-4 to have a fire-resistance rating not exceeding one hour, need not be protected on any face of the member that has an exterior separation of thirty feet or more, provided the outdoor area within the thirty feet separation distance is not used for storage of materials, or for motor vehicle parking.

(f) Inspection of fire protection. - The installation of all required sprayed-on fire protection of structural members except those encased in concrete shall be subject to the controlled inspection requirements of section 27-132 of article seven of subchapter one of this code**.**

****(g) Inspection of existing sprayed-on fire protection during alterations in office spaces and in occupancy group E spaces**.- In office spaces and spaces classified in occupancy group E, where an alteration exposes any required sprayed-on fire protection of structural members, or where, pursuant to an alteration persons are required to enter or access areas in which such sprayed-on fire protection is capable of being observed, the existing required spray-on fire protection shall be subject to the controlled inspection requirements of section 27-132 of this code. Such controlled inspection shall require a determination (i) that the existing sprayed-on fire protection as originally applied or installed complies with the applicable requirements of this code, including those for installation methods, materials, thickness and coverage; and (ii) that, since its original application, the integrity of the existing sprayed-on fire protection has not been compromised, damaged or displaced by the current alteration or by any prior alteration or other event.

Local Law 34-1988.

****Local Law 26-2004.***

§[C26-502.3] 27-325 Elevators. - Structural members or car frames for elevators located within shaft enclosures need not be fire protected.

§[C26-502.4] 27-326 Lintels. - Lintels over openings wider than four feet in masonry walls, other than in walls of masonry veneer on wood frame structures, shall be fire protected as required by section 27-324 of this article for structural members, when the full load over the opening is not relieved by a masonry arch of required strength. The members of an assembled metal lintel that support only outer face masonry that is securely bonded or anchored to backing need not be fire protected, provided that the inner members of the assembly support the full load imposed upon the lintel and are fire protected as required for structural members supporting masonry.

(a) Stone lintels. - The use of stone lintels on spans exceeding four feet shall not be permitted unless supplemented by fire protected structural members or masonry arches of the required strength to support the superimposed loads.

§[C26-502.5] 27-327 Ceilings. -

(a) Ceilings that contribute to the required fire-resistance rating of a floor or roof assembly shall be continuous between exterior walls, vertical fire divisions, fire separations, corridor partitions or any other partitions having at least the same fire resistance rating as the ceiling. All such fire-rated partitions shall be constructed as set forth in section 27-340 or subdivision (a) of section 27-341, as appropriate. The concealed space above such ceiling shall be firestopped into areas not exceeding three thousand square feet with materials listed in section 27-345 of this subchapter for the full height of the concealed space. Access to each such concealed space may be through one or more openings, not exceeding nine square feet and protected by self-closing opening protectives having the fire-protection rating required by table 5-3.

(1) Firestopping shall not be required where the structural members within the concealed space are individually protected with materials having the required fire-resistance rating, or where the ceiling is not an essential part of the fire-resistive assembly; nor shall firestopping be required where a concealed space is sprinklered in accordance with the construction requirements of subchapter seventeen of this chapter.

(b) Electrical and other openings in ceilings. - Ceilings required to have a fire-resistance rating may be pierced to accommodate noncombustible electric outlet boxes or recessed lighting fixtures if the aggregate area of such openings does not exceed sixteen square inches in each ninety square feet of ceiling area and the electrical outlet boxes or recessed lighting fixtures are constructed of steel at least .022 inches thick and sealed tightly at the ceiling. Noncombustible pipes, ducts, and additional or larger electrical or other service facilities may pierce ceilings that are required to have a fire-resistance rating only when the type of ceiling to be used has been tested with such types of facilities installed in place and the proportionate area of openings for such facilities to be installed in the ceiling does not exceed the proportionate area of such openings in the assembly tested, and provided no opening is larger than that in the assembly tested. Protection for such openings shall be the same as provided in the test. Duct openings installed in accordance with the foregoing shall be protected by fire dampers complying with the requirements of subchapter thirteen of this chapter.

§[C26-502.6] 27-328 Fire retardant treated wood. -

(a) Material. - Fire retardant treated wood shall be pressure treated with fire retardant chemicals in accordance with reference standards RS 5-3 and RS 5-4. Where used as a structural element or as furring, the material shall have a flame spread rating not greater than twenty-five when tested in accordance with reference standard RS 5-5 when exposed for a period of at least thirty minutes, with no evidence of significant progressive

combustion. Where used as interior finish or trim, the material shall have a flame spread rating that meets the requirements of section 27-348 of this subchapter for the location in which it is used. Subsequent to treatment, material two inches thick or less shall be air dried or kiln dried to an average moisture content of not more than nineteen percent.

(b) Label. - All fire-retardant treated wood shall bear the identification of a testing laboratory or producer certifying to the performance thereof, in accordance with the acceptance requirements of section 27-131 of article seven of subchapter one of this chapter.

(c) Application. - Fire-retardant treated wood may not be used where exposed to the weather or in interior spaces where the relative humidity is normally eighty percent or more. There shall be no fabrication of the material after treatment, such as cutting, shaping, or grooving for splines or ring connectors so as to expose untreated surfaces, except that the material may be cut to length, shaped, or grooved if the exposed surfaces or edges are tightly butted against other material that is noncombustible or that is fire retardant treated, so that no untreated wood is left exposed to danger of ignition. Holes may be bored or cut for plumbing or heating pipes and for electric outlets only if the openings are covered [*sic*] with tightly-fitted noncombustible escutcheons or cover plates. The allowable working stresses of the material shall be ninety percent of the allowable stresses for untreated lumber of like classification**.**

(d) Where permitted in construction group I- Fire-retardant treated wood may be used in buildings of construction group I in the following cases:

(1) As permitted by table 3-4.

(2) For interior non-bearing partitions that are not required to have a fire-resistance rating.

(3) For interior furring and blocking of exterior walls, furring and blocking of interior walls and partitions, and framing of suspended ceilings provided the furring, blocking, and framing do not affect the integrity, or reduce the fire-resistance rating, of the construction element.

(4) For interior finish and trim.

(e) Area increase. - Fire-retardant treated wood may be used in construction group II buildings in lieu of untreated wood for wall studs, bearing partition studs, columns, beams, girders, joists, rafters, trusses, sole and cap plates, subflooring and roof decks, and when so used, the area limitations of tables 4-1 and 4-2, for buildings of construction group II, may be increased by thirty-three and one-third percent.

§[C26-502.7] 27-329 Opening protectives. - Opening protectives, including frames, self-closing devices, and hardware, shall be classified as to fire-protection rating in accordance with the test procedures of reference standards RS 5-6 and RS 5-7, and shall be installed, maintained, and operated in accordance with the provisions of reference standard RS 5-8. All opening protectives shall bear the identification of a testing laboratory or agency certifying to the performance rating thereof, in accordance with the acceptance requirements of section 27-131 of subchapter one of this chapter.

§[C26-502.8] 27-330 Slow burning plastic. - Slow burning plastic shall be of a material that burns no faster than two and one-half inches per minute in sheets 0.060 in. thick when tested in accordance with reference standard RS 5-12 or that is not consumed in less than two minutes when tested in accordance with reference standard RS 5-13. The thickness of the plastic material shall be determined by method "'B" of reference standard RS 5-14.

ARTICLE 4
PREVENTION OF EXTERIOR FIRE SPREAD

§[C26-503.1] 27-331 Exterior walls. - Exterior walls shall comply with the fire-resistance rating requirements of table 3-4. Where provisions of this code require a space or facility to be enclosed, the construction requirements for the enclosure shall not apply to any exterior wall that forms part of the enclosure.

(a) Openings in exterior walls. - In addition to the requirements of table 3-4 and subchapters six and eight of this chapter, exterior openings above the third floor level of a building or above a height of forty feet, except buildings in occupancy group J-3, open parking structures, and buildings of construction class II-D and II-E, shall have opening protectives when (1) any part of the opening is less than thirty feet distant in a direct unobstructed line not in the same plane, from an opening in another building or from a wood frame building or (2) any part of the opening is above and less than thirty feet in a direct unobstructed line from, any roof construction that has a fire-resistance rating of less than one hour or that has unprotected openings therein within this distance, whether the roof construction is on the same building or on an adjacent building.

(b) Opening protective required ratings. -In a building or space classified in occupancy group A, all opening protectives shall be three-quarter hour (class E) opening protectives meeting the requirements of reference standard RS 5-8. Such protectives shall be fixed self-closing or automatic. Alternatively, these openings may be protected with three-quarter hour (class F) protectives together with outside sprinklers installed in accordance with construction requirements of subchapter seventeen of this chapter. In such cases, there shall be an automatic dry pipe sprinkler head centered over each opening with the orifice directed against the opening. All opening protectives required by table 3-4 or by subdivision (a) above in buildings classified in other than occupancy group A shall be three-quarter hour (class F) openings.

(c) First story openings. - Opening protectives required by table 3-4 may be omitted in show windows or other openings on the lowest story of a building facing on a street or public space.

(d) Nonautomatic protectives. - Required opening protectives in exterior openings, if not self-closing or automatic, shall be kept closed by the occupants at all times when not required for light or ventilation under

the provisions of subchapter twelve of this chapter.

(e) Construction of unprotected openings. - Exterior windows and doors, including their frames and glazing, that are not required by this code to have a fire-protection rating, may be of combustible materials. Below a height of seventy-five feet, slow-burning plastic glazing may be used in windows. Glazing in balcony doors shall comply with the requirements of paragraph four of subdivision (g) of section 27-369 of article five of subchapter six of this chapter.

(f) Vertical separation of openings. - In buildings classified in occupancy groups A, B, C, D and E, exceeding three stories or forty feet in height, openings located vertically above one another in exterior walls except in stairway enclosures, shall be separated by a spandrel wall at least three feet high between the top of one opening and the bottom of the opening immediately above; or each such opening above the lower one shall be protected against fire by an opening protective; or a fire canopy of noncombustible materials, extending out at least two feet horizontally from the wall and at least as long as the width of the lower opening, shall be constructed between the two openings. Spandrels and fire canopies shall be constructed to provide at least the fire-resistance rating required for the exterior wall, but in no event less than one hour.

§[C26-503.2] 27-332 Party walls. - The construction, design, and fire-resistance rating of party walls shall be the same as required by this code for vertical fire divisions. Concealed spaces in cornices and eaves shall be fire-stopped as a continuation of the party wall**.**

§[C26-503.3] 27-333 Parapets on exterior walls. - Parapets shall be provided on all exterior walls of buildings of construction class II-A, II-B, or II-C that have roof construction of combustible materials.

(a) Exceptions. - A parapet need not be provided on the exterior wall of any building:

(1) That is less than twenty-two feet high; or

(2) Whose roof has a pitch of more than twenty degrees to the horizontal and whose overhang, fascia, cornice or gutter is of noncombustible construction, or if of combustible construction is separated from the roof and ceiling construction by construction having the fire-resistance rating required for the exterior wall of the building. Combustible members, excluding roof sheathing and its supporting members, if covered by a class A roof covering and complying with the restrictions as required by section 27-335 of this article, shall not extend through this construction, but shall have at least four inches of solid noncombustible material below, at the sides, and at the ends of such members; or

(3) That is provided with a fire canopy at, or not more than two feet below the roof level, continuous around that portion of the wall that is without a parapet, constructed as required by subdivision (f) of section 27-331 of this article.

(b) Construction. - Parapets required under this section shall be of materials and assembly having at least the fire-resistance rating of the wall below, and shall be at least two feet high.

§[C26-503.4] 27-334 Protective guards. - Buildings that are more than twenty-two feet in height and have roofs that are flatter than twenty degrees to the horizontal shall be provided with a parapet not less than three feet six inches high, or be provided with a three foot six inch high railing or fence, or a combination of a parapet and railing or fence which together are not less than three feet six inches high. Railings or fences may be located inward from the face of the exterior wall a distance not exceeding six feet, and shall be of a type that will prevent children from crawling through or over them. Where roofs are used for recreational purposes, wire fencing at least ten feet high shall be constructed. Where ball games are played on roofs the wire fencing shall be extended to provide an overhead closure. Except on buildings of classes II-D or II-E construction, railings or fences shall be of noncombustible material. Railings shall be constructed as required in section 27-558 of article three of subchapter nine of this chapter.

§[C26-503.5] 27-335 Exterior trim. - For the purposes of this section, exterior trim shall be defined as any material, other than door and window frames and sash, that is applied to exterior walls and which, if removed or destroyed, will not reduce the structural stability of the building enclosure, and which is installed so as not to reduce the required fire-resistance rating of the enclosure. Exterior trim shall include cornices, overhanging eaves, fascias, belt courses, pilasters, surrounds, gutters, leaders, half-timber work, shutters, trellises, etc.

(a) Combustible exterior trim:

(1) May not be used on buildings required to be of construction group 1 except that slow-burning plastics or approved equivalent materials may be used up to a height of twenty-five feet, provided that such trim covers not more than five percent of the surface area of the building enclosure (openings not included), or not more than one thousand square feet.

(2) May be used to a height of forty feet on buildings of construction class II-A, II-B, and II-C provided that such trim covers not more than ten percent of the surface area of the building enclosure (openings not included), projects not more than eight inches beyond the outside face of the building enclosure, and has an exterior separation of at least fifteen feet measured from the outermost surface of the trim.

EXCEPTION - Cornices, gutters, or overhanging roofs, when permitted, may project up to three feet beyond the outside face of the building enclosure if they are at least eight inches above the topmost opening, are

firestopped as required by section 27-345 of article five of this subchapter and either:
a. have their combustible structural members protected by soffits and fascias of a material or assembly having at least a one hour fire-resistance rating, or
b. have all their combustible members separated from the roof and ceiling construction by construction having the fire-resistance rating required for the exterior wall, with at least four inches of solid noncombustible material below, at the sides, and at the ends of such members;
(3) May be used to an unlimited extent in buildings of construction classes II-D and II-E on exterior walls that are not required to have a fire-resistance rating.

***§27-335.1 Acoustical and thermal insulation; use in noncombustible construction. -**
(a) Notwithstanding any provision of this code to the contrary, acoustical or thermal insulation, which is not noncombustible, may be used where noncombustible construction is required if:
(1) it satisfactorily passes a test for determining noncombustibility of elementary materials, based on the test procedures of A.S.T.M. E136-65, and, upon exposure to fire will not produce products of decomposition or combustion that are more toxic in point of concentration than those given off by wood or paper when decomposing or burning under comparable conditions; or
(2) it has a flame-spread rating not greater than twenty-five, a smoke developed rating not greater than fifty, is without evidence of continued progressive combustion when tested in accordance with the test procedure of reference standard RS 5-5, and upon exposure to fire will not produce products of decomposition or combustion that are more toxic in point of concentration than those given off by wood or paper when decomposing or burning under comparable conditions.
(b) Notwithstanding any provision of subdivision a of this section or any other provision of this code to the contrary, acoustical or thermal insulation, which is not noncombustible and which does not meet the requirements of subdivision a of this section, may be used where noncombustible construction is required subject to the approval of the commissioner, and provided it is installed in a composite method of construction, with a minimum of three inches of unpierced masonry or concrete on all sides.
(c) Notwithstanding any provision of subdivision a or b of this section or any other provision of this code to the contrary, thermal insulation, which is not noncombustible and which does not meet the requirements of subdivisions a and b of this section, may be installed in an exterior wall system in any noncombustible construction group, provided that:
(1) such insulation is of a thickness no greater than four inches; provided, additional thickness used exclusively for decorative or leveling purposes shall be permissible, where the area of such additional thickness does not exceed fifteen percent of the [*sic*] wall area on any single story;
(2) such insulation has a heat value not in excess of six thousand Btu per square foot;
(3) such insulation is installed in a composite method of construction and is separated from interior spaces by a thermal barrier having at least a one-hour fire resistance rating;
(4) such insulation has a flame spread rating not greater than twenty-five and a smoke developed rating not greater than four hundred fifty, and is covered with, and sealed or joined by, material having a flame spread rating not greater than twenty-five and a smoke developed rating not greater than fifty, when tested in accordance with the procedures of reference standard RS 5-5;
(5) such insulation is installed in a manner which meets the requirements for firestopping set forth in section 27-345;
(6) upon exposure to fire, the exterior wall system and each of its components will not produce products of decomposition or combustion that are more toxic in point of concentration than those given off by wood or paper when decomposing or burning under comparable conditions;
(7) the structure on which the exterior wall system is installed meets the requirements of section 27-331 pertaining to minimum horizontal and vertical separation distances; provided, however, that such insulation shall not be used on the exterior surface of a wall of a court or shaft if the horizontal or vertical separation distance between such wall and another wall of such court or shaft is less than twenty feet;
(8) the use of such insulation on soffits or other horizontal areas shall not extend more than three feet beyond the outside face of the building enclosure;
(9) the use of such insulation on buildings having party walls meets the requirements of section 27-332;
(10) such insulation meets the acceptance requirements of section 27-131;
(11) the results of a fire test of a representative portion of the exterior wall system meet the requirements of reference standard RS 5-21;
(12) the edge or face of the assembly containing such insulation is labeled with the following information:
a.the name of a nationally recognized testing laboratory acceptable to the commissioner which has inspected such insulation;
b. the model of the exterior wall assembly for which such insulation is listed by a nationally recognized testing laboratory acceptable to the commissioner;
c. the identity of the manufacturer of such insulation;
d. the flame spread and smoke developed ratings; and
(13) the installation of such insulation shall be subject to controlled inspection to ensure that the installation is fully consistent with the terms of the listing by a nationally recognized testing laboratory acceptable to the

commissioner, acceptance requirements of section 27-131 and the manufacturer's installation recommendations.
(d) The commissioner may, with regard to thermal insulation, the use of which is authorized by this subdivision, establish by regulation training criteria for persons installing such insulation, and prohibit the installation of such insulation by persons not adequately trained. Any person installing such insulation shall certify to the commissioner that the installation is fully consistent with the terms of the listing by a nationally recognized testing laboratory acceptable to the commissioner, acceptance requirements of section 27-131 and the manufacturer's installation recommendations.
(e) Definitions. As used in this section:
(1) "Composite method of construction" shall mean a method of construction in which diverse materials are combined to form an assembly, whether the assembly is prefabricated or fabricated at the site of installation.
(2) "Exterior wall system" shall include the exterior walls of a building and the appurtenances thereof.
Local Law 13-1987.

§[C26-503.6] 27-336 Porticos, porches, etc. -
Porticos, entranceways, storm enclosures, bay windows, oriel windows, porches, or similar appendages may be constructed of combustible materials or assemblies on buildings of construction class II-E to an unlimited extent, and on buildings of construction classes II-A, II-B, II-C, and II-D under all of the following conditions:
(a) The building is classified in occupancy group J-2 or J-3.
(b) The building is not more than three stories or forty feet high.
(c) The appendage has an exterior separation on all exposed sides of at least fifteen feet, measured from the outermost surface of the appendage.
(d) The appendage is so constructed that its removal or destruction will not reduce the structural stability or fire resistive integrity of the building.
(e) The vertical surface area of the combustible portions of the appendage, including any exterior trim, is not more than ten percent of the total wall area (windows excluded) of the building.
(f) The appendage has a superficial roof area not exceeding one hundred fifty square feet and is included in the area limitations of table 4-1 and 4-2 for the entire building.
(g) The appendage is not higher than the sills of the second story windows.
(h) The roof of the appendage has a class A roof covering.
(i) The soffit or ceiling covering the combustible roof framing of the appendage has a one hour fire-resistance rating.
(j) The requirements of subdivisions (h) and (i) of this section shall not apply in the case of roofs or awnings over patios or entrance platforms where the area of vertical exposure of the patios or platforms to the outdoors is equal to at least that of the patio or platform area. Plastic shall be slow burning; canvas or other fabric shall be noncombustible or flameproofed in accordance with the provisions of title fifteen of the administrative code.

§[C26-503.7] 27-337 Roof coverings. –
Roof coverings shall be classified as A, B, or C on the basis of their resistance to exterior fire exposure as listed in reference standard RS 5-9, or as determined by tests made in conformance with reference standard RS 5-10 for those not listed.
(a) Limitations of use. - Every roof placed on a building shall be covered with Class A or B roof covering, except Class C roof coverings may be placed on buildings classified in occupancy group J when not more than three stories or forty feet in height, and on buildings permitted by this code to be of Class II-D or II-E construction. The use of roofing having no rating is prohibited, except for replacement to the extent of twenty-five percent of the roof area in any twelve month period.
(b) Combustible roof decking. - Unless attached directly to noncombustible framework, all roof coverings shall be applied to a closely fitted deck; except that wood shingles, to the extent permitted in subdivision (a) of this section, may be applied to wood slats.
(c) Roof insulation. - Combustible roof insulation may be applied on top of roof decking or slab provided that it is protected with the roof covering applied directly thereto.

§[C26-503.8] 27-338 Roof structures. -
(a) Construction of penthouses. - Enclosure walls of penthouses shall comply with the requirements for exterior walls of table 3-4 for the construction class of the building on which they are erected. Roofs of penthouses shall comply with the requirements for roof construction of table 3-4 and section 27-337 of article five of subchapter six of this chapter.
(b) Construction of bulkheads. - Bulkheads shall be constructed of noncombustible materials having a one hour fire-resistance rating, except that in buildings of construction class II-E, they may be constructed of combustible materials having a one hour fire-resistance rating.
(c) Scuttles. - Scuttles shall be constructed of noncombustible materials, or of combustible materials covered on the top, sides, and edges with noncombustible materials.
(d) Skylights. - For the purposes of this section, the term "skylight" shall be construed to include the sash, frames, and glazing of roof monitors and sawtooth roofs.
(1) SASH AND FRAMES. - Skylights that are inclined at less than sixty degrees to the horizontal on all buildings of other than construction classes II-D and II-E, shall have sash and frames constructed of noncombustible materials, and their glazing shall be as

prescribed in paragraph two of this subdivision. Skylights that are inclined at greater than sixty degrees to the horizontal shall have sash and frames constructed as required for windows, and their glazing shall be as required for windows. Glass, glass blocks, or plastic used in skylights shall be designed and constructed to withstand the same live loads as required for roofs plus any concentrated live loads required herein.

(2) GLAZING. -

a. Skylights over stairways and shafts. - Skylights placed over stairways and shafts shall be glazed with plain glass not more than one-eighth inch thick or unreinforced plastic not more than three-sixteenths of an inch thick.

b. Skylights over other spaces. - Skylights in all locations other than over stairways and shafts shall be glazed with one-quarter inch wired glass, plain glass, glass block, or plastic of material and installation complying with subparagraph c of this paragraph.

c. Plastic. - Plastic used for the glazing of skylights other than skylights over stairways and shafts shall be slow burning plastic. The aggregate area of skylight openings, other than over stairways and shafts, shall not exceed thirty per cent of the floor area of any room or space sheltered by the roof in which they are located. The edges of plastic, if exposed, shall be protected by metal or other noncombustible material. Skylights in which plastic is used, if on roofs having a pitch of twenty degrees to the horizontal or less, shall be constructed in accordance with the following:

1. The area within the curbs of each skylight shall not exceed five square feet, except that this area may be of any size, limited only by other provisions of this section, if the opening is protected on all sides by a noncombustible railing thirty-six inches in height complying with the provisions of section 27-558 of article three of subchapter nine of this chapter for railings; or the skylight is subdivided into areas of five square feet or less by noncombustible muntins or bars capable of supporting a live load of three hundred pounds at any point; or a noncombustible screen or grid capable of supporting a load of three hundred pounds over any one foot by two foot area as provided above, integral with, or not more than three feet below the skylight, with the wire or bars spaced into areas of five square feet or less (if above the roof, the wires shall be of corrosion resistive metal).

2. There shall be a minimum clear distance of three feet between skylights.

(3) SEPARATION OF SKYLIGHTS FROM STRUCTURES. – There shall be at least ten feet between a plain glass or plastic skylight and any door in a stair bulkhead located above the roof in which the skylight is located, and at least ten feet between such a skylight and any opening in any roof structure or other wall above the roof not equipped with an opening protective. On buildings up to one hundred feet in height, there shall be at least ten feet from such a skylight to the outside face of an exterior wall facing on a frontage space.

(4) SCREENS**. -** Plain glass skylights shall be protected on their underside by noncombustible screens having a mesh not smaller than three-quarters of an inch by three-quarters of an inch nor larger than one inch by one inch of at least No. 12 B. & S. gage [*sic*] wires. The screen shall be installed tight against the roof opening or shall project on all sides for a distance of not less than the distance of the screen below the glass, and shall be of such material and construction so as to support a load of three hundred pounds over any one foot by two foot area. The provisions for wire glass or screen protection shall not apply to glass block skylights.

(e) Greenhouses. - Greenhouses on the roofs of buildings other than buildings of construction class II-D or II-E shall be constructed of noncombustible framework and shall be glazed with plain or wire glass, or slow burning plastic. The floors of greenhouses shall be constructed at least as required for roof construction in table 3-4 for the construction class of the building on which it is located.

(f) Construction of sloping roofs. - Roofs having a slope of more than sixty degrees to the horizontal shall be constructed of material having the same fire-resistance rating as required for an exterior non-bearing wall of the building of which it is a part. When the slope is sixty degrees or less to the horizontal, the sloping roof shall be constructed as required for the roof of the building. Where the back of a false mansard is exposed to the outdoors, the back shall be covered with noncombustible material or with roof coverings as required for the roof of the building.

(g) Dormers. - Roofs of dormers shall be of the same type of construction and have roof covering of the same class as required for the roof of the building on which they are located. The walls of dormers shall be constructed of materials having the same fire resistance rating as required for non-bearing exterior walls of the building on which they are located; except that in buildings of construction classes II-A, II-B, II-C, and II-D, the walls may be constructed of combustible framing provided that the outside face of the framing is protected with noncombustible sheathing and the aggregate area of all such dormer walls, including openings therein, does not exceed twenty percent of the roof area.

(h) Water tanks. -

(1) SUPPORTS**.** - All water tanks placed in or on a building and having a capacity of more than five hundred gallons shall be supported on noncombustible walls or framing. When such tank is located within the building, above the lowest story, its framing shall be fire protected as required for columns supporting one

floor or the tank shall be located within a room or space that is enclosed with construction having a fire-resistance rating equivalent to that otherwise required for the protection of the framing.

(i) Cooling towers. - Cooling towers shall be constructed of noncombustible materials, except as follows:

(1) Outside the fire districts, when located on a building three stories or forty feet in height or less of construction group I, cooling towers may be constructed of combustible materials provided they are not more than fifteen feet high and do not exceed seven hundred fifty square feet in area.

(2) Outside the fire districts, when located on the ground and not exceeding three stories or forty feet in height or one thousand five hundred square feet in area, cooling towers may be constructed of combustible material provided they are protected by a noncombustible screen, fence, or wall at least twenty feet from the tower and at least seven feet high.

(3) Filling and drift eliminators may be of combustible materials if the towers are provided with automatic sprinkler protection complying with the construction provisions of subchapter seventeen.

(4) Filling and drift eliminators may be of combustible materials where the towers are not provided with automatic sprinkler protection, provided all of the following conditions are met:

a. The cooling tower is constructed of noncombustible material;

b. The cooling tower is located on a building in construction group I-A or I-B;

c. The cooling tower and filling and drift eliminators are located at least thirty feet away from any windows or fresh air intakes which are at an elevation above the roof on which the cooling tower is located, whether in the same building or in an adjoining building;

d. The cooling tower is located not less than fifteen feet from the nearest lot line; and

e. The cooling tower is located not less than ten feet from any chimney, except that the distance shall be not less than twenty feet from a chimney venting products of combustion other than from gas or oil fired appliances, whether on the same building or an adjoining building.

(5) In no event shall cooling towers or filling and drift eliminators be constructed of materials that contain asbestos.

(j) Miscellaneous roof structures. - The following roof structures may be constructed of combustible material if less than twelve feet high above the roof: antenna supports; flagpoles; clothes drying frames; duckboarding or platforms that do not cover more than twenty per cent of the roof area at that level.

ARTICLE 5
PREVENTION OF INTERIOR FIRE SPREAD

§[C26-504.1] 27-339 Fire segregation of occupancies.-

(a) Segregation by fire divisions. - When different occupancies are to be segregated by fire divisions under the provisions of section 27-240 of subchapter three of this chapter, the occupancies shall be separated from each other, vertically and horizontally, by fire divisions having at least the fire-resistance ratings listed in table 5-2 for the occupancy groups involved. Every building section shall be constructed of elements having at least the fire-resistance rating of a construction class required for the area and height of the building section as listed in tables 4-1 and 4-2.

(b) Segregation by fire separations. - When different spaces are to be segregated by fire separations under the provisions of section 27-240 of subchapter three of this chapter, the occupancies shall be separated from each other, vertically and horizontally, by fire separations having at least the fire-resistance ratings listed in table 5-1. In buildings of construction group I, fire separations shall be constructed of noncombustible materials.

(c) Compartmentation. - Notwithstanding the provisions of Table 4-1, in existing office buildings one hundred feet or more in height having air-conditioning and/or mechanical ventilation systems that serve more than the floor on which the equipment is located, unsprinklered floor areas, more than forty feet above curb level, shall be subdivided by fire separations into spaces or compartments of the size required by paragraphs one through five of this subdivision. Floor area shall be defined as the area within exterior walls and excluding any areas enclosing stairs, corridors, elevators and shafts:

(1) Unless otherwise provided below, all unsprinklered floor areas shall be segregated by one-hour fire separations into spaces or compartments not to exceed seventy-five hundred square feet.

(2) Where the floor area exceeds ten thousand square feet, at least one of the subdividing fire separations shall be of two-hour fire-resistive construction, creating areas of refuge, complying with section 27-372 of article five of subchapter six of this code except that the requirement for an elevator in each area shall not apply.

(3) The floor area or any subdivided area may be increased to not more than fifteen thousand square feet if complete area protection by approved devices for the detection of products of combustion other than heat is provided within such increased area and provided further than*** at least one of the subdividing fire separations shall be of two-hour fire-resistive construction where the floor area exceeds fifteen thousand square feet, creating areas of refuge in the same manner and under the same conditions as provided in two of this subdivision. The activation of any such detectors shall have the same effect as provided in subdivision (f) of section 27-972 of article five of subchapter seventeen of this code.

TABLE 5-1 FIRE SEPARATIONS

Key: Fire-resistance ratings are given in hours. For Table 5-1, read above heavy line. For Table 5-2, read below heavy line.
NR—No Requirement

OCCU-PANCY	A	B-1	B-2	C	D-1	D-2	E	F-1a	F-1b	F-2	F-3	F-4	G	H-1	H-2	J-1	J-2	J-3
A	4	4	4	4	4	4	4[c]	4	4	4	4	4	4	4	4	4	4	4
B-1	4	3	NR	1[bc]	NR	NR	1[ac]	1[c]	1[c]	—	1[c]	1[c]	1[c]	1½[c]	1½[c]	1[c]	1[c]	1[c]
B-2	4	3	2	NR	NR	NR	NR	NR	NR	—	NR	NR	NR	NR	NR	NR	NR	NR
C	4	3	2	2	1	NR	NR	NR	NR	—	NR	NR	NR	1	1	1	1	1
D-1	4	3	3	3	3	NR	1[a]	1	1	—	1	1	1	1½	1½	1	1	1
D-2	4	3	2	2	3	2	NR	NR	NR	—	NR	NR	NR	NR	NR	NR	NR	NR
E	4	3	2	2	3	2	2	NR	NR	—	NR	NR	NR	1[a]	1[a]	1[a]	1[a]	1[a]
F-1a	4	3	2	2	3	2	2	2	NR	—	NR	NR	NR	1	1	1	1	1
F-1b	4	3	2	2	3	2	2	2	2	—	NR	NR	NR	1	1	1	1	1
F-2	4	3	2	2	3	2	2	2	2	2	—	—	—	—	—	—	—	—
F-3	4	3	2	2	3	2	2	2	2	2	2	NR	NR	1	1	1	1	1
F-4	4	3	2	2	3	2	2	2	2	2	2	2	NR	1½	1½	1	1	1
G	4	3	2	2	3	2	2	2	2	2	2	2	2	NR	NR	NR	NR	NR
H-1	4	3	2	2	3	2	2	2	2	2	2	2	2	2	NR	1	1	1
H-2	4	3	2	2	3	2	2	2	2	2	2	2	2	2	2	1	1	1
J-1	4	3	2	2	3	2	2	2	2	2	2	2	2	2	2	2	NR	NR
J-2	4	3	2	2	3	2	2	2	2	2	2	2	2	2	2	2	2	NR
J-3	4	3	2	2	3	2	2	2	2	2	2	2	2	2	2	2	2	2

TABLE 5-2 FIRE DIVISIONS

NOTES FOR TABLES 5-1 AND 5-2

[a]An office, or group of offices, whose use is accessory to an occupancy, and totals four hundred square feet or less in area shall not be required to have a fire separation. Such office, or group of offices, totalling more than four hundred square feet in area shall not be required to have a fire separation if such offices exit directly, without having to pass through the area of the related occupancy.

[b]Counters and backbars for the sale of publications, tobacco products, liquors, or candies, or for making of reservations for travel, car rental, or theatre, or otherwise involving similar business and mercantile activities that are accessory to an occupancy and are limited in area to one hundred square feet, within the area of the occupancy, need not comply with the requirements of this table.

[c]The provisions of this table shall not apply to closets seventy-five square feet or less in area.

[d]Nonresidential kitchens need not be separated by fire separations from adjoining dining spaces, provided:

(1) The cooking equipment is vented directly to the outdoors, and

(2) 2* draft curtain of noncombustible material, at least twenty-four inches down from the ceiling, is provided to separate the cooking facilities from dining spaces, and

(3) Sprinkler heads constructed in accordance with the provisions of subchapter seventeen of this chapter, are provided on the cooking facilities side of the curtain, or any opening between the kitchen and dining space, located within twenty-four inches of the curtain or opening, and spaced not more than forty-eight inches on centers if the opening is more than sixty inches wide. When fire separations are provided double-action doors may be permitted.

[e]Kitchens having a floor area of fifty-nine square feet or less located within dwelling units shall be separated from adjacent spaces by partitions having a fire-resistance rating of at least one hour except for the entrances thereto which need [not]** comply with section 27-342 of this article. If doors are provided they may be of wood.

[f]In buildings or spaces classified in occupancy group J-1 or J-2 all partitions in dwelling units located in cellars shall have a minimum fire-resistance rating of one hour.

As enacted; "A" probably intended.
****Copy in brackets not enacted but probably intended.***

(4) In existing buildings, existing fire separations of one-hour fire-resistive construction may be accepted in lieu of the fire separation of two hour fire-resistive construction providing all other requirements of paragraphs two and three of this subdivision are complied with.
(5) Regardless of the floor area, no subdivision of the floor area shall be required under this subdivision when complete sprinkler protection is provided in accordance with the construction provisions of subchapter seventeen of this chapter.
(6) Existing office buildings one hundred feet or more in height shall comply with the requirements of this subdivision as follows:
a. Whenever an alteration is performed involving partition changes, compliance with this subdivision shall be required in that portion of the building being altered.
b. At least one-third of the total floor area of the building not in compliance with the requirements of this subdivision on February seventh, nineteen hundred seventy-three, shall comply with such requirements on or before December thirteenth, nineteen hundred eighty-one. Complete plans showing such compliance for the phase of the work to be done shall be filed with, and a permit secured from, the commissioner on or before September thirteenth, nineteen hundred eighty.
c. At least two-thirds of the total floor area of the building not in compliance with the requirements of this subdivision on February seventh, nineteen hundred seventy-three, shall comply with such requirements on or before August seventh, nineteen hundred eighty-four.
d. Full compliance shall be provided on or before February seventh, nineteen hundred eighty-eight.
(7) In existing office buildings one hundred feet or more in height where compliance would cause practical difficulty or undue hardship, the commissioner may waive or modify the requirements of paragraphs one through five of this subdivision and accept alternatives fulfilling the intent of these requirements. Where compliance with the time requirements of paragraph six of this subdivision would cause undue hardship, the commissioner, with the approval of the fire commissioner, may extend the time for compliance, in accordance with rules and regulations to be promulgated. Before such application for a time extension shall be considered all required applications and plans must be filed and approved, permits obtained and a good faith effort towards completion of the work shall have been made.
******As enacted; "that" probably intended.***

§[C26-504.2] 27-340 Fire divisions. - Fire divisions shall be constructed of noncombustible materials or assembly of noncombustible materials to provide the fire-resistance ratings required by table 5-2. Vertical fire divisions shall be continuous between foundation, roof, or horizontal fire divisions, and through any concealed space in floor or roof construction. Horizontal fire divisions shall be continuous between exterior walls and/or vertical fire divisions.
(a) When roof construction is combustible on both sides of a vertical fire division, the vertical fire division shall extend through the roof construction to a height of at least four inches above the high point at the roof framing. Decking shall tightly butt the fire division. Above the decking of roofs that are flatter than twenty degrees to the horizontal, blocking shall be constructed to form cants on both sides of the fire division with slopes not steeper than 1:4. Combustible decking shall not extend over the top of the fire division.
(b) Except as required in subdivision (c) of this section, when roof construction is noncombustible on one or both sides of a vertical fire division, the vertical fire division may terminate at the underside of the noncombustible roof construction provided the junction of the wall and roof construction is made smoke tight.
(c) When a vertical fire division is required by table 5-2 to have a fire-resistance rating of three or four hours, and the roof construction has a fire-resistance rating of less than two hours, the fire division shall extend above the roof construction to form a parapet at least three feet high.
(d) Fire divisions shall be so constructed that the removal or collapse of construction on one side will not endanger the support of construction on the other side.
(e) Fire divisions shall be made smoke tight at their junction with exterior walls. In buildings of construction class II-D and II-E, exterior walls shall be constructed of noncombustible materials for a distance of at least eighteen inches on each side of the fire division, or the fire division shall project at least twelve inches through the exterior wall.
(f) Fire divisions may be offset if the construction between the offset divisions, including their supports, has at the same fire-resistance rating as the fire division, with all hollow spaces within the construction firestopped with noncombustible material.
(g) Where combustible members such as joists, beams, or girders bear on, or frame into, vertical fire divisions, such members shall not extend through the wall and shall have at least four inches of solid noncombustible material below, at the sides, and at the ends of each such member.
(h) Chases or recesses shall not be cut into fire divisions so as to reduce their thickness below that required for the fire-resistance rating.
(i) Vertical fire divisions that are hollow shall be firestopped with at least four inches of noncombustible material so as to prevent passage of flame, smoke, or hot gases through the hollow spaces to the story above or below, or to hollow spaces within connecting floor or roof construction.

§[C26-504.3] 27-341 Fire separations. - Fire separations shall be constructed of materials or assembly of materials having at least the fire-resistance ratings required by table 5-1.

(a) Different tenancies. - Different tenant apartments, suites, stores, offices, or other spaces that are not separated from each other by fire divisions, shall be separated from each other by fire separations having at least the fire-resistance rating prescribed in table 5-1, but in no case less than one hour, and shall continue through any concealed spaces of the floor or roof construction above.

§[C26-504.4] 27-342 Openings in fire divisions and separations. - Openings in fire divisions and fire separations that are required to have a fire-resistance rating, shall be protected by opening protectives having the fire-resistance ratings prescribed in table 5-3, shall not exceed the limits in size and area herein prescribed, and shall comply with the provisions of section 27-329 of article three of this subchapter. Door and other openings in enclosures of vertical exits, exit passageways, corridors, and places of assembly shall be protected by opening protectives as required by the provisions of subchapters six and eight of this chapter. When such enclosures also serve as fire divisions or fire separations, openings therein shall be protected as required by the provisions of this subchapter.

TABLE 5-3 OPENING PROTECTIVES FOR FIRE DIVISIONS AND FIRE SEPARATIONS

Fire-resistance Rating of Fire Division or Fire Separation in which Opening Occurs (hr.)	Fire Protection Rating of Opening Protective
3 or 4	3 hr. (Class A)*
2 or 1 ½	1 ½ hr. (Class B)
1	¾ hr. (Class C)

*
Notes for Table 5-3:
Shall consist of two one and one-half hour (class B) opening protectives, with one protective installed on each face of a fire division or fire separation.

(a) Size of opening. - In buildings that are not sprinklered no opening through a fire division or fire separation shall exceed one hundred twenty square feet in area, with no dimension greater than twelve feet, and the aggregate width of all openings at any level shall not exceed twenty-five percent of the length of the wall. Where the areas on both sides of a fire division or fire separation are sprinklered in accordance with the construction provisions of subchapter seventeen of this chapter, the size of the opening may be one hundred fifty square feet in area, with no dimension greater than fifteen feet. In buildings fully sprinklered in compliance with the provisions of subchapter seventeen of this chapter, the size and aggregate width of openings through fire divisions or fire separations shall be unlimited. When a fire division or fire separation serves as a horizontal exit also, it shall have no opening other than door openings not exceeding fifty-six square feet in area, the aggregate width of all openings at any level shall not exceed twenty-five percent of the length of the wall, and shall comply with the provisions of section 27-373 of article five of subchapter six of this chapter.

(b) Conveyor openings. - Where fire doors or shutters are impractical for the protection of conveyor openings in fire divisions or fire separations, a system of water spray nozzles may be used. At least four nozzles shall be provided on each side of the opening so as to give complete coverage of the opening. Nozzles shall be controlled by an automatic valve actuated by a heat detector. Nozzles shall be located at an angle not more than thirty degrees between the centerline of nozzle discharge and a line perpendicular to the plane of the opening. The water discharge rate shall be at least three gallons per square foot per minute. When conveyor openings through floors are protected by this method, the openings shall also be provided with a noncombustible enclosure constructed around the conveyor from the floor up to or slightly beyond the spray nozzles, and draft curtains shall be provided extending twenty-four inches below and around the floor opening.

§[C26-504.5] 27-343 Ducts, pipes and conduits through rated construction. -

(a) Installation of ducts which pass through construction required to have a fire-resistance rating shall comply with the requirements of subchapter thirteen, provided that, notwithstanding the provisions of subchapter thirteen or reference standard RS 13-1, noncombustible ducts which pass through construction required to have a fire-resistance rating of one hour must be provided with fire dampers unless:

(1) The building is classified in occupancy group C, E, or H-2; and

(2) Complete sprinkler protection is provided for the floor in accordance with subchapter seventeen; or

(3) The openings for the ventilation ducts do not exceed three square feet in area; or

(4) The duct is protected on both sides of the partition for a distance equal to the maximum duct dimension by a sleeve affording one hour fire separation for such horizontal distance.

(b) Noncombustible pipes and conduits. –

Noncombustible pipes and conduits may pass through construction required to have a fire-resistance rating

provided that the space between the pipe or conduit and its sleeve or opening does not exceed one-half inch and is completely packed with mineral wool or equivalent noncombustible material and is closed off by close-fitting metal escutcheons on both sides of the construction; and provided further that the aggregate net area of such openings does not exceed twenty-five square inches in any one hundred square feet of wall or floor area (excluding the areas of openings for sleeves which are firestopped in conformance with this section and section 27-345).

(c) Openings for passage of pipe and ducts whose aggregate net area exceeds twenty-five square inches in any one hundred square feet of wall or floor area (excluding opening for sleeves which are firestopped in conformance with this section and section 27-345) may pierce constructions required to have a fire-resistance rating only when the type of construction to be used has been tested with such types of facilities installed in place and the proportionate area of openings of such facilities to be installed in the construction does not exceed the proportionate area of openings in the assembly tested, and provided no opening is larger than that in the assembly tested. Protection of such openings shall be the same as provided in the test. All openings through hollow fire rated construction shall be sleeved with sheet metal least No. 14 U.S. std. gage thick.

*(d) The installation and proper functioning of required fire dampers shall be subject to the controlled inspection requirements of section 27-132 of this code, except that it shall not be required that the architect or engineer be in the employ of the owner.

Local Law 26-2004.

§[C26-504.6] 27-344 Shafts. - The requirements of this section shall apply to all shafts, except that floor openings accommodating a slide pole in a fire house and openings other than for ventilation, chimneys or gas vents in buildings three stories or less in height classified in occupancy group J-3 shall be exempt from these requirements, and except as more restrictive requirements may be specified for chimneys and gas vents in subchapter fifteen of this chapter, stairway enclosures in subchapter six, duct enclosures in subchapter thirteen, elevator, escalator, and dumbwaiter enclosures in subchapter eighteen of this chapter, and except as permitted in reference standard RS 5-18.

(a) Construction. - Shafts shall be enclosed with materials having at least fire-resistance rating required by table 3-4. A shaft that serves the topmost story of a building shall extend through the roof at least thirty-six inches above any combustible roof construction. Where the roof construction is of noncombustible materials, the shaft shall extend through any concealed space within the roof construction and may terminate at the underside of the roof deck. Pipes and ducts penetrating shaft construction shall comply with the requirements of section 27-343 of this article.

(b) Combustible contents. - Shafts shall be kept free of bookstacks or other combustible contents except for stair construction as permitted under subchapter six of this chapter, duct and pipe coverings as permitted under subchapters thirteen and sixteen, and elevator car enclosures as permitted under subchapter eighteen of this chapter.

(c) Openings in shafts. - All shaft openings below the top terminus shall be provided with opening protectives that comply with section 27-329 of this subchapter and table 5-3. In shafts that contain only one opening below the roof terminus, no opening protective need be provided. Openings in elevator and dumbwaiter shafts shall comply only with the requirements of subchapter eighteen of this chapter. Where a window is located in a shaft wall that is an exterior wall and is ten stories or less above grade or three stories or less above a roof, it shall be protected against entrance by a permanently secured grille consisting of 5/8 in. dia. bars, 10 in. o. c. vertically, or by a stationary metal sash window having 1/8 in. thick solid section steel muntins, 8 in. o. c. one way. This protection shall not be required in stair shafts where there is a stair landing or platform not more than three feet directly below the window sill.

(d) Smoke venting of closed shafts.- All closed shafts having an area exceeding four square feet, other than elevator or dumbwaiter shafts, shall be provided with a smoke vent having an area of at least three and one-half percent of the maximum shaft area at any floor, but in no event less than one-half square foot. Elevator and dumbwaiter shaft vents shall comply with the requirements of subchapter eighteen of this chapter. Smoke vents may be windows, louvers, skylights, vent ducts, or similar devices. Vent ducts shall be enclosed by construction having the same fire resistance rating as required for the shaft enclosure. Such vent ducts shall extend vertically, diagonally, or horizontally as provided below.

(1) Through any roof of the building provided the vent opening is at least ten feet from any window, door, outside stairway, or interior lot line. This dimension may be reduced to five feet if the vent duct is extended up to at [*sic*] least the level of the top of the window or door. A vent that is required to extend above a roof shall extend at least eight inches above a roof assembly constructed of noncombustible materials, and at least thirty-six inches above a roof assembly constructed of combustible materials that are within a horizontal distance of ten feet.

(2) Through an exterior wall of the building, provided there are no openings in the wall within a distance of thirty feet vertically above the vent opening, and within five feet either side of the vent opening. When a side of a shaft is an exterior wall or a wall of a roof bulkhead, the required vent may be a louver or window. Any window or louver located in a shaft wall above a roof constructed of combustible materials shall have its sill at least thirty-six inches above the roof.

(e) Terminus of shaft vents. - Of the total required vent area for shafts, at least one-third shall be clear opening to the

outdoors, either in the form of fixed louvers, ridge vents, or hooded or goosenecked openings. In lieu thereof, skylights or trap doors may be used if constructed and arranged to open automatically by fusible link or other mechanical device when subjected to a temperature of one hundred sixty degrees Fahrenheit or to a rapid rise in temperature at a rate of fifteen to twenty degrees Fahrenheit per minute. The remaining portion of the required vent area may be a window or skylight glazed with plain glass not more than one-eighth inch thick or slow burning plastic.

(f) Machine rooms.- Any compartment containing machinery that communicates with a shaft enclosure shall comply with all requirements for shafts. The required louver or glazing shall not be located in any door leading into such compartment.

§[C26-504.7] 27-345 Firestopping.- Concealed spaces within partitions, walls, floors, roofs, stairs, furring, pipe spaces, column enclosures, etc. that would permit passage of flame, smoke, fumes, or hot gases from one floor to another floor or roof space, or from one concealed area to another, shall be firestopped to form an effective draft barrier, or shall be filled with noncombustible material in accordance with the requirements of this section. Firestopping shall not be required where a concealed space is sprinklered in accordance with the construction provisions of subchapter seventeen of this chapter, or is constructed as a shaft.

(a) Firestopping materials.- In buildings of construction group I, firestopping or fill shall be of noncombustible material that can be shaped, fitted, and permanently secured in position. In buildings of construction group II, firestopping may be of combustible material consisting of wood not less than two inches nominal thickness with tight joints, two layers of one inch nominal thickness assembled so that there are no through joints or of one-half inch exterior type plywood with joints backed, except that noncombustible firestopping shall be used in concealed spaces of fire divisions and where in contact with fireplaces, flues, and chimneys. Noncombustible firestopping may be masonry set in mortar, concrete, three- quarter inch thick mortar or plaster on noncombustible lath, plasterboard at least three-eighths of an inch thick, fire-rated wallboard at least five-eighths of an inch thick, sheet metal at least No. 14 U.S. std. gage thick, solid web metal structural members, asbestos-cement board at least one-quarter of an inch thick, or equivalent rigid noncombustible material. Mineral, slag, or rockwool may be used for firestopping when compacted to a density of at least three and one-half pounds per cubic foot into a confined space of least dimension not more than one-third its second dimension.

(1) The performance of through-penetration fire stops shall be measured and specified according to reference standard RS 5-19.

(2) The commissioner may accept reference standard RS 5-19 test data results from an independent laboratory acceptable to the commissioner pursuant to subdivision (c) of section 27-131, when such data is submitted by a registered architect or licensed professional engineer to justify the usage of fire stops or the details of their installation not specified herein.

(b) Hollow partitions and furred spaces. - All hollow partitions and furred out spaces shall be firestopped at each floor level. Firestops shall be the full thickness of the hollow space or furred out space.

(c) Stairs. - Concealed spaces within stair construction shall be firestopped between stringers at the top and bottom of each flight of stairs so as not to communicate with concealed spaces in the floor, roof or intermediate landing construction.

(d) Ceiling spaces. - Floor or roof assemblies required to have a fire-resistance [*sic*] rating shall have any concealed spaces therein firestopped in accordance with section 27-327 of this subchapter.

(e) Exterior cornices.- Exterior cornices and eaves, constructed of combustible materials or with combustible framing, shall be firestopped at the ends of fire divisions and party walls, and at maximum intervals of twenty feet. If not continuous, they shall have closed ends and at least four inches separation between adjoining sections**.**

(f) Trim and finish. - Where combustible trim and finish is permitted all hollow spaces shall be firestopped at ten foot intervals or shall be solidly filled with noncombustible materials.

(g) Duct and pipe spaces.- Ducts and pipes enclosed in construction that does not meet the requirements of this code for shaft construction shall be firestopped at every floor level.

(h) Inspection of firestopping. -The installation of all required firestopping shall be subject to the controlled inspection requirements of section 27-132 of article seven of subchapter one of this chapter, except that the architect or engineer need not be retained by the owner. Firestopping shall not be concealed from view until inspected.

§[C26-504.8] 27-346 Partitions and furring. - In buildings of construction group I, partitions and furring shall be constructed of noncombustible materials, except that nonbearing partitions that are not required to have a fire-resistance rating, and furring may be constructed of fire retardant treated wood as provided in subdivision (d) of section 27-328 of article three of this subchapter, and except that such partitions and furring, may be constructed of combustible materials in spaces classified in occupancy group E, J-2, or J-3, provided the following conditions are met:

(a) the space containing the combustible partitions does not exceed five thousand square feet in area within a noncombustible enclosure having a fire-resistance

rating of at least one hour.
(b) the space is in a single tenancy.
(c) glass or slow burning plastic is used for glazing.

§[C26-504.9] 27-347 Folding partitions. -Folding partitions shall not be used as partitions that are required by this code to have a fire-resistance rating.
(a) Construction group I. - In buildings of construction group I, folding partitions may be used if they are constructed of noncombustible materials, or of fire retardant treated wood, or are constructed of noncombustible frame covered with fabric that has a class A interior finish rating. Where partitions of combustible materials are permitted by section 27-346 of this article, folding partitions may also be constructed of combustible materials.
Where doors constructed of materials having a class C interior finish rating are permitted by section 27-348 of this article, folding doors may be constructed of combustible materials.
(b) Construction group II. - In buildings of construction group II, folding partitions may be constructed of combustible materials, surfaced with interior finish materials meeting the requirements of section 27-348 of this article.

§[C26-504.10] 27-348 Interior finish. -
(a) Definition. - For the purposes of this section, interior finish shall mean those materials that form the exposed interior surfaces of a building and that are part of or affixed to walls, fixed or folding partitions, ceilings, and other construction elements.
(b) Classification. - Interior finish materials shall be classified in accordance with the surface flame-spread rating obtained as prescribed in the provisions of reference standard RS 5-5. Where an interior finish material is comprised of two or more materials laminated, glued, nailed, or otherwise secured together, the test rating for flame spread shall be based upon the composite of the materials in the form in which it will be used in construction. Interior finish materials shall be grouped in the following classes, in accordance with their surface flame spread characteristics:

Interior Finish Class	Flame Spread Rating
A	0 to 25
B	26 to 75
C	76 to 225
D	Over 225

(c) Requirements. - Interior finishes and exposed structural or construction materials shall have a flame-spread rating not greater than that designated by the class prescribed for the various occupancy groups in which they are used, as listed in table 5-4. Exceptions to these requirements are:
(1) Finish flooring and floor coverings, which are subject to the requirements of section 27-351.
(2) Wall coverings and coatings that are less than 0.036 in. [*sic*] in total thickness, when applied directly to a noncombustible, or fire-retardant treated wood, substrate.
(3) Exposed structural members and planking in buildings of class II-A construction, which may be left exposed in any room or space, except in exits.
(4) Twenty per cent (20%) of the aggregate wall and ceiling area of any room, space, or corridor required to have a class A or B rating may be finished with materials having a class C rating. This allowance shall include the area of doors, folding partitions, windows, glazing, skylights, luminous ceilings, trim, bases, chair rails, panels, moldings, etc. This exception shall not operate as a waiver of other requirements of this code relating to opening protectives.
(5) When a sprinkler system is provided in any room or space, and is installed in compliance with the construction provisions of subchapter seventeen of this chapter, interior finish materials may be one class higher in flame-spread rating than required by table [*sic*] 5-4.
(d) Smoke density. - No material shall be used for interior finish in the following locations if the material develops smoke in greater density than the rating shown, based upon a test conducted in accordance with the provisions of reference standard RS 5-5. Materials used for interior finish that cover not more than twenty percent of the aggregate wall and ceiling area of any room, space, or corridor shall be exempt from the above requirements.

Location or Occupancy……	Smoke Developed Rating
Exits, Corridors……	25
Occupancy groups H-1 and H-2……..	50
Rooms in which the net floor area per occupant is ten square feet, or less…..	100

(e) Toxicity. - No material shall be used in any interior location that, upon exposure to fire will produce products of decomposition or combustion that are more toxic in point of concentration than those given off by wood or paper when decomposing or burning under comparable conditions.
(f) Attachment of interior finish. -
(1) To be credited with the same rating, interior finish materials that were applied to a substrate when tested shall be applied at the building to an equivalent substrate.

*TABLE 5-4 INTERIOR FINISH REQUIREMENTS CLASS

Occupancy Group Classification of the Space	Occupancy Group Designation	Exits and Shafts	Corridors [b]	Rooms More Than 1500 Sq. Ft. in Area [a]	Rooms Less Than 1500 Sq. Ft. in Area [a]
High Hazard	A	A	A	B	B
Storage	B-1	A	A	B	C
Storage	B-2	A	B	B[c]	C
Mercantile	C	A	B	B[c]	C
Industrial	D-1	A	A	B	C
Industrial	D-2	A	B	B[c]	C
Business	E	A	B	C	C
Assembly	F-1[a]	A	B	B	B[d]
Assembly	F-1b	A	B	B[c]	B[c, d]
Assembly	F-2	A	B	B[c]	B[c, d]
Assembly	F-3	A	B	B[c]	B[c, d]
Assembly	F-4	A	B	B[c]	C
Educational	G	A	A	B	C
Institutional	H-1, H-2	A	A	B	B[d]
Residential	J-1, J-2	A	A	B[e]	B[e,f]
Residential	J-3	B	D	D	D

NOTES FOR TABLE 5-4:

[a] In determining the applicable requirements for rooms or enclosed spaces, the occupancy group classification of the room or enclosed space shall be the governing factor, regardless of the occupancy group classification of the building. For the purposes of this table, the area of a room shall be that floor area contained within enclosing construction in which interior doors or other interior openings represent not more than ten percent of the area of the enclosing construction. Interior doors or windows that are constructed of noncombustible materials and that are self-closing or automatic may be ignored in computing door or opening area. Rooms or spaces that have unprotected openings constituting more than ten percent of the area of enclosing construction shall not be considered as a room. Interior finish requirements for rooms are based upon rooms being enclosed in ceiling high partitions. Partitions, to be considered ceiling high, shall extend up to the floor or roof construction above or to a ceiling having at least a three-quarter hour fire-resistance rating. Partitions that do not comply with this requirement shall not be considered as enclosing the spaces, and the rooms or spaces on both sides thereof shall be considered as one.

[b] Rooms or spaces through which it is necessary for occupants of an adjacent room to pass in order to reach the only exit shall, for the purposes of this table, be considered as corridors. Where used in corridors, class B finish material shall not extend more than fifty feet between separations of class A finish material that are at least two feet wide.

[c] On the street floor of one-story buildings in construction group II, ceilings, beams, trusses, etc. that are twenty feet or more in height from the floor to their lowest part, may have a class C finish.

[d] Class C interior finish may be used in offices, or groups of offices, whose use is accessory to an occupancy, provided such offices are separated from the occupancy, by construction having at least a two hour fire-resistance rating.

[e] Class C interior finish may be used in the residential rooms of one- and two-story motels when there is a direct exit from each room to the exterior.

[f] Interior finish when used in the following spaces shall be at least class B:

(1) Kitchens, cooking spaces, and pantries in buildings classified in occupancy groups other than J-2 and J-3.
(2) Repair and maintenance rooms.
(3) Boiler rooms and incinerator combustion rooms.

Superscripts in body of this table (which refer to notes) not enacted but probably intended.

(2) Interior finish materials shall be cemented or otherwise secured in place in the same manner and with materials equivalent to those used in flame-spread tests conducted in accordance with subdivision (b) of this section for the applicable classification.

(3) Where walls, ceilings, partitions, or other construction elements are required to have a fire-resistance rating or are required to be constructed of noncombustible materials, and the interior finish is secured to studs or furring, the surface of the interior finish facing the concealed space shall either have a class A rating, shall be applied to a substrate that has a class A rating, or shall have the concealed space completely filled with noncombustible material.

§[C26-504.11] 27-349 Coatings. - Coatings applied in the field by brush or spray shall not be used as flame-spread retardants except on existing surfaces of buildings existing on December sixth, nineteen hundred sixty-eight, and then only with the express permission of, and in a manner directed by, the commissioner.

§[C26-504.12] 27-350 Ceiling construction. - Ceilings that are to be suspended below floor or roof construction by means of a framing system shall consist of supporting hangers, carrying channels and a supporting grid complying with reference standard RS 5-16 or shall have supporting hangers and carrying channels and a supporting grid that can be demonstrated to the satisfaction of the commissioner to be of strength adequate to support the ceiling material. The hangers and supporting grid shall be of noncombustible materials. In buildings of construction group II, every other hanger supported from wood members shall be attached by a through bolt or clinched through nail. Where, in table 3-4, floor or roof construction is required to have a fire-resistance rating, a ceiling having no fire-resistance rating may be suspended below the fire-resistance construction.

* **(a) Luminous ceilings.** - For the purpose of this section, a luminous ceiling shall be defined as a ceiling consisting of translucent, louvered, egg-crated, mesh, or similar light-diffusing material suspended from the ceiling or structural framework. A suspended ceiling containing less than twenty square feet of translucent, louvered, egg-crated, mesh, or similar material in any one hundred square feet of ceiling area shall not be considered a luminous ceiling, and shall be constructed and installed in accordance with department of buildings requirements for lighting fixtures. Luminous ceilings shall, in addition to the requirements of this section, conform to all of the requirements of section 27-348 of this article for interior finish.

Local Law 59-1996.

(1) LUMINOUS CEILINGS OF NONCOMBUSTIBLE MATERIAL.- Luminous ceilings constructed of glass and/or metal or other noncombustible materials may be used in any location.

(a) Glass used in luminous ceilings, unless it is wire glass or heat-resistant glass as specified below, shall not weigh more than two psf, nor shall any pane be larger than eight square feet in area. If glass used in luminous ceilings is wire glass, or is heat resistant by reason of having a maximum coefficient of expansion of 36 x 10.7 in. per in. per degree C, the glass may be of any weight and any size, limited only by considerations of structural safety.

(b) Luminous ceilings installed below sprinkler heads shall be constructed of a type of noncombustible louver, mesh, or other open material that will not impede the flow of water from the sprinkler heads over the intended area of coverage. The luminous ceiling shall be constructed so as to provide access to all heads and valves.

(2) LUMINOUS CEILINGS OF COMBUSTIBLE MATERIAL.- Luminous ceilings constructed of combustible materials shall not be installed in:

a. Any exit or corridor.

b. Any room classified in occupancy group H, or any room leading therefrom as defined in note b of table 5-4.

c. Any room in which the net floor area per occupant is twenty square feet or less, or any room leading therefrom as defined in note b of table 5-4.

d. Luminous ceilings constructed elsewhere than in the spaces listed in subparagraphs a, b, and c above shall be exempt from the provisions of section 27-348 of this article, provided that:

1. The panels of such ceilings are of slow-burning plastic;

2. The panels are installed above or below sprinklers that are constructed in accordance with the provisions of subchapter seventeen of this chapter;

3. No individual plastic panel exceeds ten feet in maximum dimension. Where installed below sprinkler heads, the plastic shall be a material that will fall from its mounting at a temperature at least fifteen degrees lower than the temperature at which the sprinkler heads are designed to operate or are constructed of open material which will not impede the flow of water from the sprinkler heads. Luminous ceilings shall be installed so as to provide ready access to all heads and valves.

(b) Suspension of new ceilings below existing suspended ceilings. - In construction group I a new ceiling may be suspended below not more than one existing suspended ceiling and shall be supported directly from the ceiling carrying channels adjacent to the hangers. In construction group II, an existing suspended ceiling shall be completely removed before a new ceiling may be suspended.

§[C26-504.13] 27-351 Finish flooring and floor coverings. - Finish flooring and floor coverings shall comply with the following:

(a) In buildings or spaces classified in occupancy group A and in all exits except those in buildings of construction group II-E, finish flooring shall be of noncombustible material and except as otherwise provided for stairs in subdivision (h) of section 27-375 of article five of subchapter six of this chapter.

(b) Flooring in buildings or spaces of construction group I. - Except as provided in subdivision (a) of this section combustible finish flooring may be used in buildings or spaces of construction group I when cemented directly to the top surface of noncombustible floor construction, or attached to combustible or noncombustible sleepers. When attached to sleepers, the space between the noncombustible floor construction and the bottom of flooring shall be solidly filled with noncombustible material to within one-quarter inch of the flooring, or the space between the sleepers under the flooring shall be firestopped into areas of not more than twenty square feet, and provided further that no open

spaces shall extend under or through fire divisions or through fire separations. Combustible insulating or sound absorbing boards not more than one-half inch thick and having a flame-spread rating not greater than Class C may be used when attached directly to noncombustible floor construction and covered with finish flooring.

(c) Flooring in buildings or spaces of construction group II. - Except as provided in subdivision (a) of this section, finish flooring in buildings or spaces of construction group II may be of combustible material.

(d) Floor coverings. -

(1) Exits. - Where exits are required under any provision of this code, carpets and carpet assemblies shall not be installed in such exits, except that wool carpeting may be installed in lobby areas, exit passageways and convenience stairs.

(2) Flammability requirements. - The requirements of this subdivision shall apply to carpets and carpet assemblies only when used as a floor covering (for requirements pertaining to carpets and carpet assemblies used as interior finishes, see section 27-348 of this article). For purposes of this subdivision, carpeting assemblies shall include the carpet, its underlay, and adhesives which when tested as a composite shall be representative of the proposed installation.

a. Pill test. - All carpets and underlayments shall pass a methanine pill test in accordance with the requirements of reference standard RS 5-20.

b. Critical radiant flux test. - Carpets and carpet assemblies shall be tested by the method for critical radiant flux in accordance with the requirements of reference standard RS 5-20. The time frame for such test shall be at least a fifteen minute exposure.

1. Carpets and carpet assemblies representative of the actual installation on floors of corridors, shall have a minimum critical radiant flux of 0.5 watts per square centimeter (W/cm^2).

2. Carpets and carpet assemblies representative of the actual installation on floors of general areas shall have a minimum critical radiant flux of 0.4 W/cm^2.

c. Smoke developed ratings. - Carpets and carpet assemblies representative of the actual installation on floors of corridors or general areas shall be tested for smoke developed ratings in accordance with the requirements of reference standard RS 5-20. The smoke developed ratings in either the flaming or no-flaming mode shall not exceed three hundred within the first four minutes of the test.

d. The manufacturer of the carpets and carpet assemblies shall submit a certificate from an independent laboratory acceptable to the commissioner pursuant to section 27-131, showing the complete test data results, prior to final acceptance. The certification shall state that the material is treated for fire resistance and shall indicate the service life of the treatment or that the material is inherently fire resistant by virtue of its construction, chemical properties and/or composition. Materials which are not inherently fire resistant may be used only when the certified fire resistant service life exceeds that of the planned service life of the carpets and carpet assemblies with consideration being given to cleaning, traffic, and other conditions of use which may affect the treatment.

***§[C26-504.14] 27-352 Fireplaces. - REPEALED**

Local Law 80-1989.

§[C26-504.15] 27-353 Smoke and heat venting. -

(a) Where the floor area of a one-story building classified in occupancy group A, B-1, or D-1 is greater in depth than one hundred feet from a frontage space, that portion beyond one hundred feet shall be provided with roof vents and smoke curtains complying with the requirements of reference standard RS 5-11. Where the effective area of vents are glazed with plain glass or plastic not thicker than one-eighth inch, they need not be provided with automatic opening devices.

(b) Buildings classified in occupancy group E, one hundred feet or more in height, having air-conditioning and/or mechanical ventilation systems that serve more than the floor on which the equipment is located, shall be provided with at least one smoke shaft by means of which smoke and heat shall be mechanically vented to the outdoors as provided in reference standard RS 5-17. Buildings that are sprinklered throughout shall be exempt from the smoke shaft requirements.

(c) Existing office buildings, one hundred feet or more in height, having air-conditioning and/or mechanical ventilation systems that serve more than the floor on which the equipment is located, shall be provided with at least one smoke shaft by means of which smoke and heat shall be mechanically vented to the outdoors as provided in reference standard RS 5-17, or in lieu of such smoke shaft or shafts, all interior enclosed stairs other than a fire tower or access stairs may be provided with a system of pressurization for fire emergency use. Such pressurization shall be provided by means of a system or systems as provided in reference standard RS 5-18. Such buildings shall comply with the smoke and heat venting requirements herein on or before September thirteenth, nineteen [*sic*] hundred eighty-two. Complete plans showing such compliance shall be filed with, and a permit secured from, the commissioner on or before September thirteenth, nineteen hundred eighty.

Existing buildings that are sprinklered throughout shall be exempt from the smoke shaft and stair pressurization requirements.

An existing building, which is to be sprinklered throughout, shall be exempt from the smoke shaft and stair pressurization requirements under the following conditions:

(1) the installation proceeds in conformance with a schedule acceptable to the commissioner, setting forth the sequence and corresponding time for installation in the various locations. On or before September thirteenth, nineteen hundred eighty such a schedule, as well as complete plans of the installation, shall be filed with, and a

permit secured from, the commissioner for the phase of the work to be done as required by paragraph two of this subdivision.
(2) at least one-third of the total floor area of the building, including but not limited to the entrance lobby, corridors and elevator landing areas, is sprinklered on or before December thirteenth, nineteen hundred eighty-one.
(3) at least two-thirds of the total floor area of the building is sprinklered on or before December thirteenth, nineteen hundred eighty-two.
(4) the building is sprinklered throughout on or before December thirteenth, nineteen hundred eighty-three.
Where compliance with the time requirements of this subdivision would cause undue hardship, the commissioner, with the approval of the fire commissioner, may extend the time for compliance, in accordance with rules and regulations to be promulgated. Before such application for a time extension shall be considered all required applications and plans must be filed and approved, permits obtained and a good faith effort towards completion of the work shall have been made.

§[C26-504.16] 27-353.1 Smoke protection for elevators and escalators. -
(a) Elevators.- In existing buildings classified in occupancy group J-1, at every floor above the main entrance floor, all passenger elevators [*sic*] shall open only into elevator vestibules, except for:
(1) Such existing buildings which contain spaces classified in occupancy group C or F and have an automatic sprinkler system protecting all spaces (except boiler rooms) not in occupancy group J-1 and all exits and corridors serving such spaces located on or below the lowest floor containing sleeping rooms as well as all storage closets no matter where located, except that storage closets less than seventy-five square feet may, in the alternative, be provided with smoke detectors which shall be of the central supervisory type connected to an approved central station; or
(2) Such existing buildings, which contain no, spaces in occupancy group C or F, and have either:
a. An automatic sprinkler system protecting all public areas and storage closets; or
b. An automatic sprinkler system protecting all sleeping rooms and storage closets.
c. Notwithstanding subparagraphs a and b of this paragraph, storage closets less than seventy-five square feet may be provided with smoke detectors of the central supervisory type connected to an approved central station.
d. Notwithstanding any other provision of this code, the sprinklers serving the storage closets may be connected with the domestic water supply.
(b) Escalators. - In buildings and existing buildings classified in occupancy group J-1, fire protection for escalators shall be provided by any one of the following methods:
(1) Enclosure in accordance with sections 27-375 and 27-378 if escalator is used as an exit; or
(2) Automatic rolling shutters in accordance with reference standard RS 18-1; or
(3) Kiosks in accordance with reference standard RS 18-1; or
(4) Where the building section is fully protected by a supervised automatic sprinkler system and the escalator sprinklers are spaced to protect exposed sides of the escalator opening, a noncombustible heat apron constructed to bank heat around the sprinkler heads adjacent to the opening where the bottom edge of the draft curtain is not less than twelve inches below the bottoms of sprinkler heads when heads are in operation, and in no event less than twenty-four inches below the ceiling; or
(5) Spray nozzles in accordance with reference standard RS 18-1.
(c) The requirements of this subdivision shall be complied with on or before April first, nineteen hundred eighty-seven.

***§27-353.2 Smoke protection for elevators in E occupancies.-** For an elevator in a high rise building where such elevator serves four or more stories that contain space classified in occupancy Group E (office space), inclusive of any lobby or entry level, such elevator shall meet the following requirements at every level served by such elevator (i) for such buildings erected pursuant to new building applications filed on or after October 22, 2004, or (ii) where two or more new elevator shafts are installed in such buildings in existence on October 22, 2004:
(a) Elevator vestibule required.- At every floor above the main entrance floor where the fire command station is located, all elevators shall open into an enclosed elevator vestibule. The elevator vestibule shall be separated from the building occupancy by smoke barriers extending from floor slab to floor slab.
(b) Permitted penetrations.- Penetrations in addition to those permitted in section 27-353.3 (smoke barrier) shall be provided with smoke dampers as defined in reference standard RS 13-1, except that a package pass through or communication opening not exceeding one square foot in area need not be provided with smoke dampers.
(c) Access to exits.- Access to an exit on any floor through the enclosed elevator vestibule shall be permitted if the occupied areas on that floor have access to at least one other required exit that does not require passing through the elevator vestibule.
(d) On floors with a floor area of less than twenty-five hundred square feet, the commissioner may accept an alternative design or construction method that accomplishes the purposes of this section, or, if the commissioner determines that compliance with this section is impracticable in whole or in part, the commissioner may authorize an exemption from the requirements of this section.
Local Law 26-2004.

***§27-353.3 Smoke barrier.**- A smoke barrier may or may not have a fire resistance rating. Smoke barriers may have openings that are protected by automatic closing devices, adequate to inhibit movement of smoke through

the opening. The smoke barrier may be constructed of heat-strengthened or tempered glazing or the equivalent and protected by sprinkler heads constructed in accordance with subchapter seventeen of this chapter and installed a maximum of six feet (6'-0") on center on each side of the barrier. If the smoke barrier is constructed of glass, the portions of the smoke barrier located within two feet of the door opening and within five feet of the floor shall be constructed of tempered glass. Glass panels having an area in excess of nine square feet with the bottom edge less than eighteen inches above the floor shall likewise be constructed of tempered glass. Portions of glass smoke barriers shall be marked where required in accordance with the rules of the board of standards and appeals.

Local Law 26-2004.

SUBCHAPTER 6
MEANS OF EGRESS

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ARTICLE 1 GENERAL

§[C26-600.1] 27-354 Scope. -

The provisions of this subchapter shall control the design, construction, protection, location, arrangement and maintenance of required exit facilities to provide safe means of egress from all buildings hereafter erected, altered or changed in occupancy, except that exit requirements for special uses and occupancies, as provided in subchapters seven and eight of this chapter, shall take precedence over the provisions of this subchapter and except further that buildings in existence on December sixth, nineteen hundred sixty-eight shall comply with the applicable requirements of section 27-356 of this article, section 27-371 of article five of this subchapter and articles eight and nine of this subchapter.

§[C26-600.2] 27-355 Definitions. - For definitions to be used in the interpretation of this subchapter, see subchapter two of this chapter.

§[C26-600.3] 27-356 Inadequate exits for existing structures.- Every structure existing on December sixth, nineteen hundred sixty-eight which is not provided with exit facilities as prescribed in this code, and in which the exit facilities are, in the opinion of the commissioner, inadequate for the safety of the occupants, shall be provided with such means of egress or fire protection as the commissioner shall direct.

ARTICLE 2 DETERMINATION OF EXIT REQUIREMENTS

§[C26-601.1] 27-357 Exit requirements. -
The determination of exit requirements for a building shall be based upon the occupancy group classification of the building, the number of occupants, the floor area, the travel distance to an exit, and the capacity of the exits, as provided in table 6-1 and herein. Every floor of a building shall be provided with exit facilities for its occupant load. The occupant loads of floors shall not be cumulative for the purpose of designing vertical exits, except where one floor is used by another as a means of egress. Vertical exits provided from any floor above grade may serve simultaneously all floors above grade, and vertical exits provided from any floor below grade may serve simultaneously all floors below grade.

(a) Mixed occupancy. - When a building is classified in more than one occupancy group in accordance with the provisions of section 27-239 of article two of subchapter three of this chapter, the exit requirements for the entire building shall be determined on the basis of the occupancy group having the strictest exit requirements, or the exit requirements for each building section shall be determined separately.

(b) Incidental occupancies. - When a building contains incidental occupancies classified in occupancy groups other than that under which the building is classified, the exit requirements for the floor on which such occupancies occur shall be based upon those of the occupancy group under which the building is classified; but the access and exit requirements for the incidental occupancy shall be based upon the occupancy group classification of the incidental occupancy.

(c) Multiple occupancy or use. - Where a building, floor, or space is used for multiple purposes involving different activities at different times, that occupancy involving the greatest number of occupants shall be used in determining the exit requirements.

*****(d) Building access. -** All buildings classified in other than occupancy groups A, mechanical and electrical equipment rooms and boiler and furnace rooms of D-2 or J-3 shall have at least one primary entrance accessible to and usable by individuals who use wheelchairs. Such entrance shall provide access to a level that makes elevators available in buildings where elevators are provided. Where ramps are used to comply with this requirement, they shall have a slope not greater than one in twelve and shall otherwise conform to the provisions of section 27-377 and reference standard RS 4-6.

The commissioner may waive the requirements of this section in the alteration of buildings existing on the effective date of this code in accordance with section 27.292† of this code.

******Local Law 58-1987.***
†As enacted but "27-292" probably intended.

§[C26-601.2] 27-358 Occupant load. -
The number of occupants for whom exit facilities shall be provided shall be established either (1) by the actual number of occupants for whom each occupied space, floor, or building, as the case may be, is designed, or (2) by using the appropriate occupant-area ratios from table 6-2, whichever is larger. The occupant load of any space shall include the occupant load of all spaces that discharge through it in order to gain access to an exit.

(a) Unlisted occupancies. - Where data regarding the sq. ft. per person for an occupancy is not listed in table 6-2, the occupant load shall be established by an architect or engineer, subject to the approval of the commissioner.

(b) Modifications. -
(1) When the actual occupant load of any space will be significantly lower than that listed in table 6-2, the commissioner may establish a lower basis for the determination of the occupant load.
(2). When a building existing on December sixth, nineteen hundred sixty-eight is altered or changed in occupancy or use so as to require enlarged exit facilities, the commissioner may authorize the alteration or change in occupancy or use without an enlargement of exit facilities, provided the occupant load is limited to that accommodated by the existing exit facilities as determined by the provisions of this code, and the building or space is posted accordingly with a sign. Such signs shall be at least twelve inches in width and sixteen inches in height. The lettering shall be red on a white background. The letters shall be not less than one inch high and the numerals not less than one and one-quarter inches high.

(c) Nonsimultaneous occupancy. - The occupant load of toilets, locker rooms, meeting rooms, storage rooms, employee cafeterias, and similar rooms or spaces that are not occupied at the same time as other rooms or spaces on the same floor of a building, may be omitted from the occupant load calculation of the floor on which they are located to the extent that such spaces serve occupied rooms on the same floor.

TABLE 6-1 DETERMINATION OF EXIT AND ACCESS REQUIREMENTS

Occupancy Group of Building or Space	Group Desig-nation	Maximum Travel Distance (ft.)[a]		Capacity Number of Persons per Unit of Width				Corridors[i]	
				Doors Openings[m]		Stairs, Escalators[k]	Ramps,[b] Corridors, Exit Passage-ways,[j] Horizontal Exits	Min. Width (in.)	Max. Dead End[h] (length in ft.)
		Unsprinklered	Sprinklered	To Outdoors at Grade	All Other Exit and Corridor Doors				
High Hazard	A	N.P.	150	50	40	30	50	36	N.P.
Storage	B-1[c]	100	150	75	60	45	75	36	50
	B-2[c]	125	175	75	60	45	75	36	N.R.
Mercantile	C	150	200	100	80	60	100	36	50
Industrial	D-1	125	175	100	80	60	100	44	50
	D-2	150	200	100	80	60	100	44	50
Business	E	200	300	100	80	60	100	44	50
Assembly*	F	150	200	100	80	60	100	44	30
Educational	G	150	200	100	80	60	100	66[e]	30[d]
Institutional	H-1	125	175	50	40	30	50	36	40
	H-2	125	175	30	30	15	30	96[f]	30[g]
Residential	J-1	150	200	50	40	30	50	36	40
	J-2	150	200	50	40	30	50	36	40
	J-3	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.

N.P. — Not Permitted
N.R. — No Requirements (except as provided in section 27-375)
See Table 8-1 for exit and access requirements applying to places of assembly.

****Notes:**
[a] For method of measurement, see subdivision (c) of section 27-360 of this article.
[b] Reduce listed capacity of ramps by twenty-five percent when slope exceeds one in ten.
[c] Except for public garages. (See article ten of subchapter seven of this chapter.)
[d] There shall not be more than one classroom on each side of a corridor between an exit and the end of the corridor (dead end).
[e] Applies to corridors serving classrooms. Other corridors shall have a minimum width of forty-four inches.
[f] Applies to corridors serving patients. Other corridors shall have a minimum width of forty-four inches.
[g] There shall be no patient bedrooms between an exit and the end of the corridor (dead end).
[h] See subdivision (d) of section 27-369 of article five of this subchapter for permissible increase.
[i] See section 27-369 of article five of this subchapter.
[j] See section 27-370 of article five of this subchapter.
[k] See section 27-378 of article five of this subchapter.
[m] Where a door opening is divided by mullions into two or more doors openings, each such opening shall be measured separately in computing the number of units of exit width.
****There is no note l.***

§[C26-601.3] 27-359 Capacity of exits. -
The capacity of exits and access facilities shall be measured in units of width of twenty-two inches, and the number of persons per unit of width shall be determined by the occupancy group classification and type of exit as listed in table 6-1. Fractions of a unit of width less than twelve inches shall not be credited. Where twelve inches or more are added to one or more full units of width, one-half unit of width may be credited. Where computations of total required width give fractional results, the next larger integral number of exit units or integral number plus one-half, shall be used. A fraction less than one-half may be neglected in cases where such fraction constitutes less than ten per cent of the total required number of units. Notwithstanding any of the above computations, no exit or access facility shall be narrower than the minimum width requirements specified in table 6-1, or elsewhere in this code.

TABLE 6-2 OCCUPANT LOAD REQUIREMENTS NET AREA TABLE

Occupancy	Net Floor Area per Occupant (sq. ft.)
Billiard rooms…….	50
Bowling alleys……	50
Classrooms……	20
Dance floors……...	10
Dining spaces (nonresidential)……...	12
Exhibition spaces……...	10
Garages and open parking structures..	250
Gymnasiums……...	15
Habitable rooms…….	140
Industrial shops……..	200
In schools...…….	30
Institutional sleeping rooms	
Adults…….	75
Children (except as listed below)...	50
Day Care	
a. under 6 mos…….	50
b. 6 mos. *– 2 yrs……	40
c. 2 yrs. *– 6 yrs……..	30
Institutional staff, all……...	30
Kindergartens…….	35
Kitchens (nonresidential)……...	200
Laboratories……	50
Preparation rooms……...	100
Libraries…….	25
Locker rooms……	12
Offices……	100
Passenger terminals or platforms…...	1.5xC
Sales areas (retail)……..	
1st floor or basement……...	25
All other floors……...	50
Seating areas (audience) in all places of assembly	
Fixed seats……..	D
Moveable seats……...	10
Skating rinks……...	15
Stages (See subchapter eight)…….	—
Standing room (audience) in all places of assembly……...	4
Storage rooms…….	200

Notes:
C—capacity of all passenger vehicles that can be unloaded simultaneously.
D—designed number of seats or occupants.
****Dash not enacted but probably intended***

§[C26-601.4] 27-360 Travel distance. -

(a) General requirement. -
The maximum travel distance from the most remote point in any room or space to the center of a door opening directly on an open exterior space, a vertical exit, an interior stair, an exit passageway or to a horizontal exit shall not be greater than the limit specified in table 6-1 for the occupancy group classification of the room or space.

(b) Travel distance within dwelling units. -
In buildings classified in occupancy groups J-1 and J-2, the maximum travel distance from the centerline of a door from any habitable room within a dwelling unit either to the centerline of a door opening on a corridor or to the center of a door opening on an exit shall not be greater than forty feet, except that for buildings classified in occupancy group J-2 of construction class I-A, the distance may be increased to fifty feet. Such travel distances shall be included in the maximum travel distance established in subdivision (a) of this section.

(c) Measurement. - Travel distance shall be measured along a natural and unobstructed path of travel. Where the path of travel is over an access stair, it shall be measured along an inclined straight line through the center of the outer edge of each tread.

ARTICLE 3 LOCATION OF EXITS

§[C26-602.1] 27-361 Arrangement. -
All exits and access facilities shall be located so that they are clearly visible, or their locations clearly indicated, and they shall be kept readily accessible and unobstructed at all times.

§[C26-602.2] 27-362 Tenant spaces. -
When more than one tenant occupies a building or floor area, each tenant shall have direct access to the required number of exits without passing through premises occupied by other tenants, except as permitted for balconies in subdivision (g) of section 27-369 of article five of this subchapter.

***§[C26-602.3] 27-363 Remote location. -**
(a) When more than one exit is required from a floor of a building, each such required exit shall be placed as remote from the others as is practicable. Where this results in a distance between exits exceeding the maximum travel distances required by section 27-357, additional remote vertical exits shall be provided.
(b) In addition to the requirements of subdivision (a) of this section:
(1) For exits serving spaces classified in occupancy groups G or J-2, in no event shall such exits be less than fifteen feet distant from each other.
(2) For exits serving spaces classified in other occupancies, in no event shall such distance be less than thirty feet or one-third the maximum travel distance required by section 27-357, whichever is greater.
(c) On any floor containing ten thousand square feet or more in a high rise building classified in occupancy group E (office space), each exit that is required to be remote from another exit shall not share any common walls, floors, ceilings, scissor stair assemblies, or other enclosures.
****Local Law 26-2004.***

§[C26-602.4] 27-364 Exit discharge. –
All vertical exits shall extend in a continuous enclosure to discharge directly, or by way of a yard, court, or exit passageway, to an open exterior space. When vertical exits serving floors above grade continue in the same enclosure to serve floors below grade, the portion of such vertical exits above grade shall be separated from the portion below grade by construction having at least a one hour fire-resistance rating, with three-quarter hour self-closing doors opening in the direction of exit travel from the floors below grade, except that buildings classified in residential occupancy group J-3 and educational occupancy group G shall be exempt from this requirement.

ARTICLE 4 NUMBER OF EXITS

§[C26-603.1] 27-365 Egress from rooms and spaces. -
(a) There shall be at least two door openings, remote from each other and leading to exits, from every room or enclosed space in which the total occupant loads exceeds the number of persons listed in table 6-3.

TABLE 6-3 MAXIMUM OCCUPANT LOAD—SPACES WITH ONE DOOR [Max. Occupant Load]**

Occupancy Group Classification	Max. Occupant Load with One Door
A	10
B	50
C	75
D	50
E	75
F	75
G	75
H	15
J	20

[] As enacted but this heading probably intended to be omitted.

(b) Except as otherwise provided for in subdivisions (c) and (d) of this section, in buildings of combustible construction group II exceeding two stories in height there shall be at least two door openings from each J-1 or J-2 dwelling unit which shall be remote from each other. Each door opening shall lead to separate exits either directly or by separate corridors or one door opening shall lead to an exit and the other to a balcony complying with subdivision (g) of section 27-369 of article five of this subchapter.

(c) In buildings or spaces classified in occupancy group J-2 not more than three stories and forty feet in height, occupied by not more than four families on each story and of combustible construction group II there shall be at least two door openings from each J-2 dwelling unit which shall be remote from each other. One door opening shall lead to an exit and the other to a balcony complying with subdivision (g) of section 27-369 of article five of this subchapter.

(d) Buildings not exceeding three stories in height and occupied exclusively by not more than one family on each story without boarders, roomers or lodgers are exempt from the provisions of subdivisions (b) and (c) of this section.

§[C26-603.2] 27-366 Exits from floors. -
1. There shall be at least two independent exits, remote from each other, from every floor of a building, except that only one exit may be provided from floors in:

(a) One and two family dwellings.

(b) Buildings classified in occupancy group J-2 of Noncombustible construction group I or occupancy group E that are not more than sixty feet in height, have a gross area of two thousand square feet or less per floor, and have a maximum travel distance of fifty feet on any floor.

(c) Buildings classified in occupancy group J-1 or J-2 that are not more than two stories and thirty feet in height and have a maximum travel distance of eighty feet and the corridors and stair enclosure are provided with automatic sprinkler protection complying with the construction provisions of subchapter seventeen of this chapter.

(d) Buildings classified in occupancy group J-2 occupied exclusively by not more than one family on each story without boarders, roomers or lodgers and not more than three stories and forty feet in height, and the stair enclosure is provided with automatic sprinkler protection complying with the construction provisions of subchapter seventeen of this chapter and without openings between any garage and the exit passageway.*

(e) Buildings classified in occupancy group J-2 not more than three stories and forty feet in height occupied by not more than four families on each story.**

2. Notwithstanding the exit requirements of this section, in buildings classified in occupancy group J-2 of construction class I-A, one level of an apartment occupying a part of not more than two floors need only be provided with a balcony that complies with subdivision (g) of section 27-369 of article five of this subchapter, provided that, in addition, the stair within such apartment shall be at least two feet six inches in width and terminates not more than twenty feet from a corridor door on the other level that shall provide the required access to at least two independent exits. The center line of such corridor door shall be not more than fifty feet from any room within such apartment.

3. Notwithstanding any other provision of this section, when, within a building, any place of assembly has an occupant load between five hundred and nine hundred ninety-nine persons, there shall be provided at least three independent exits, remote from each other, from each floor; any such place of assembly with an occupant load of one thousand or more persons shall be provided with at least four independent exits, remote from each other, from each floor.

**** Editor's Note: Applies to buildings subject to the exeptions of 27-365(d).***

***** Editor's Note: Applies to buildings subject to the restrictions of 27-365(c).***

§[C26-603.3] 27-367 Exit reduction. -
When a floor area has access to areas of refuge that comply with the requirements of section 27-372 of article five of this subchapter; the number of persons for whom vertical exits are to be provided may be reduced to fifty per cent of the occupant load of the floor area when one area of refuge is provided, and may be reduced to thirty-three and one-third percent of the floor area when two areas of refuge are provided. This section shall not be applicable to any new or altered place of assembly, except for such places of assembly in fully sprinklered office buildings which occupy less than twenty per cent of the floor area occupied by the principal use.

ARTICLE 5 ACCESS REQUIREMENTS AND EXIT TYPES

§[C26-604.1] 27-368 General. -
(a) Means of egress shall be provided for all buildings by one or more of the facilities listed below. Access and exit facilities not specifically covered in this section shall not be used to satisfy the exit requirements of this code. Fire escapes shall not be permitted on new construction, with the exception of group homes. Fire escapes may be used as exits on buildings existing on December sixth, nineteen hundred sixty-eight when such buildings are altered, subject to the approval of the commissioner, or as provided in subdivision (b) hereof. Elevators or escalators shall be provided in all new buildings exceeding four stories in height except that buildings or building sections classified in occupancy group H-2 exceeding one story in height and buildings or building sections classified in occupancy group G or J-1 exceeding two stories in height shall be provided with elevators.

(b) In group homes all floors used by children shall have alternate exits remotely located from each other and readily accessible to the occupants. Fire escapes shall be permitted as the second means of egress.

§[C26-604.2] 27-369 Corridors.-
Corridors shall be kept readily accessible and unobstructed at all times. Corridors shall be kept free of combustible contents except that in buildings classified in occupancy groups G, H-1 and H-2, combustible contents may be stored in noncombustible lockers and combustible bulletin boards meeting the requirements of table 5-4 shall be permitted.

(a) Capacity. - The capacity and minimum width of corridors shall be as listed in table 6-1. Width shall be measured in the clear between the narrowest points produced by any projections such as radiators, lockers, drinking fountains, or room or locker door swings, except that such width may be reduced by projections up to eighteen inches wide to the extent of two inches per unit of exit width if the total area of such projections does not exceed five percent of the area of the wall on which they occur.

(b) Height. - Corridors shall have a clear height of seven feet six inches for at least seventy-five percent of the floor area, with no point less than seven feet in height. No projection below the ceiling shall be located so as to obstruct full view of exit signs.

(c) Length. - Corridors shall be subdivided by smoke barriers, as defined in subchapter two, into the following lengths**:**

Educational occupancy group G.....……..300 ft.
Institutional occupancy groups H-1 and H-2…….150 ft.
Residential occupancy groups J-1 and J-2....…….150 ft.

Where smoke barriers are penetrated by doors, such doors shall be smoke stop doors in conformance with subdivision (c) of section 27-371 of this article.

(d) Dead ends. - Dead ends in corridors shall not exceed the length listed in Table 6-1, except that in all occupancy groups except occupancy group H, when a corridor is completely enclosed in construction having a two hour fire-resistance rating, with all corridor doors being self-closing and having a fire protection rating of one and one-half hours, the permissible length of dead ends may be increased one hundred percent above the length listed in table 6-1. Dead end distance shall be measured from the centerline of the door opening nearest to the closed end of the corridor to the center of an exit door opening, or the center of that point in the corridor where travel to two or more exits becomes available in two directions.

(e) Changes in level. - Changes in level requiring less than two risers in a corridor shall be by a ramp complying with section 27-377 of this article. Risers and treads shall comply with the requirements of subdivision (e) of section 27-375 of this article.

(f) Exterior corridors. - Exterior corridors shall be roofed, and shall have solid floors drained to prevent accumulations of standing water. Such floors may serve as fire canopies when so constructed. Exterior corridors shall be protected along their outer side by guards or parapets at least three feet six inches high. Openings in guards or parapets shall be of such dimensions as to prevent the passage of a five-inch dia. ball. Where the outer side of an exterior corridor is more than fifty percent enclosed with solid material, it shall be treated as an interior corridor.

(g) Balconies. - Balconies may serve as a means of egress from dwelling units in buildings classified in occupancy group J-2 under the following conditions:

(1) They shall serve at least two dwelling units.

(2) They shall be constructed as required for exterior corridors, except that parapets or guards shall not be higher than four feet on the outer side of the balcony.

(3) The dwelling units served by balconies shall be

separated from each other by construction having at least a two hour fire-resistance rating. Such separation shall extend at least three feet beyond the outside face of the exterior wall of the building, although such projection may be reduced to two feet six inches provided that any window opening on each such balcony served by the fire separation shall be at least two inches from such fire separation for every one inch that such separation is less than thirty-six inches. An opening at least twenty inches wide shall be provided between the end of this separation and the balcony parapet or guard, and the opening shall be maintained free and unobstructed for the full height of the balcony, except that privacy screens openable from either side may be permitted in the opening.

(4) Access from dwelling units to the balconies shall be through doors having glass panels at least two feet wide and four feet high, without muntins, screens, or other obstructions to hinder entry by breaking the glass panels. The doors shall be lockable only from the inside by devices that can be easily released from the outside after breaking the glass. A combination lock or lock required to be opened by a key or removable device or tool shall not be used.

(h) Construction. -

(1) INTERIOR CORRIDORS. - Interior corridors shall be completely enclosed within fire separations to provide a minimum fire-resistance rating of one hour except as otherwise provided in subparagraphs a through c of this paragraph:

a. For buildings or spaces classified in occupancy group J-1 or J-2 of combustible construction group II exceeding two stories in height, except for buildings not exceeding three stories in height and occupied exclusively by not more than one family on each story without boarders, roomers or lodgers, corridors shall be enclosed within fire separations providing a minimum fire-resistance rating of two hours.

b. Corridor partitions may be omitted or may be constructed of unrated noncombustible material in buildings in occupancy group H-2 in the following instances: nurses stations not exceeding three hundred fifty square feet in area, waiting spaces, lounges and recreational spaces for patients and visitors which do not exceed five hundred square feet in area, spaces used solely for public telephones, and all other spaces which are completely protected by an automatic wet sprinkler system complying with the construction requirements of subchapter seventeen of this code.

c. Corridor partitions may be omitted in spaces of occupancy group H-1 used for detention of persons under legal restraint.

(2) EXTERIOR CORRIDORS AND BALCONIES. - Exterior corridors and balconies shall be constructed of non-combustible materials.

(i) Borrowed lights. - No operable transoms shall be permitted in walls of corridors. In corridors required to have a one hour fire-resistance rating, fixed one-quarter inch wire glass panels may be installed in not more than twenty percent of the common wall between the corridor and any room or space, provided that no panel exceeds seven hundred twenty square inches in area; however, openings permitted in paragraph three of subdivision (h) of section 27-370 of this article may be permitted provided all of the limitations and requirements specified in that section are complied with, except that openings in corridor walls serving as fire divisions required to have a fire-resistance rating shall be limited to those specified in section 27-342 of article five of subchapter five of this chapter.

(j) Ventilation. - Corridors shall be ventilated in accordance with the requirements of subchapter twelve of this chapter. Corridors shall not be used as open plenums or as ducts to exhaust air from rooms or spaces opening upon them, except as permitted in reference standard RS 13-1.

(k) Interior finish. - The interior finish of corridors shall be in accordance with the requirements of table 5-4.

§[C26-604.3] 27-370 Exit passageways. –

Exit passageways shall be maintained free of obstructions at all times. Not more than fifty percent of the total number of vertical exits provided for a building may be served by a single exit passageway, except as provided in subdivision (h) of section 27-370 of this article.

(a) Capacity. - The capacity of exit passageways shall be as listed in table 6-1.

(b) Width. - The width of an exit passageway serving one vertical exit shall be equal to the width of the vertical exit. The width of an exit passageway serving two or more vertical exits shall be equal to seventy-five percent of the width of all of the vertical exits that it serves. Width shall be measured in the clear between the narrowest points at any projections such as radiators, door swings, or pilasters.

(c) Height. - Exit passageways shall have a clear height of seven feet six inches for at least seventy-five percent of the floor area, with no point less than seven feet in height. No projection below the ceiling shall be located so as to obstruct full view of exit signs.

(d) Changes in level. - Changes in level requiring less than two risers in an exit passageway shall be by a ramp complying with section 27-377 of this article. Risers and treads shall comply with the requirements of subdivision (e) of section 27-375 of this article**.**

(e) Construction.- The construction of exit passageways shall be as required by table 3-4 for the applicable construction class of the building.

(f) Openings. - No openings other than exit doors shall be permitted in exit passageways, except as provided in subdivision (h) of this section.

(g) Interior finish.- The interior finish of exit passageways shall be in accordance with the requirements of table 5-4.

(h) Street floor lobbies. - Street floor lobbies may be used as exit passageways when they comply with the requirements of subdivisions (a) through (g) of this section subject to the following modifications:

(1) VERTICAL EXITS SERVED. - One hundred percent of the total number of vertical exits provided for a building may be served by a street floor lobby, if egress is provided in two different directions from the discharge points of all vertical exits to open exterior spaces that are remote from each other.

(2) WIDTH. - Street floor lobbies serving as exit passageways shall be increased in width to accommodate the occupant load of all communicating spaces on the lobby floor that exit through them. The capacity per unit of width shall be as listed in table 6-1.

(3) OPENINGS.- Openings between street floor lobbies serving as exit passageways and elevators or communicating spaces shall comply with the following:

a. Doors. -

1. Doors to stairways and elevators, and unsprinklered communicating spaces classified in occupancy group B-2, D-2, F-1 or F-2 shall be self-closing fire doors having a one and one-half hour fire protection rating.

2. Doors to unsprinklered communicating spaces classified in occupancy group G, H or J, or sprinklered communicating spaces classified in occupancy group B-2, D-2, F-1 or F-2 may be either:

(a) self-closing fire doors having a three-quarter hour fire protection rating, or

(b) glass or other noncombustible doors installed in conjunction with automatic fire doors having a one and one-half hour fire protection rating, with sprinkler heads installed over the doors on the room side.

3. No other door openings shall be authorized except as otherwise provided in this section.

b. Other openings. - Other openings to spaces classified in occupancy group C, E, F, G, H or J shall be permitted, provided they have a maximum length of eight feet and a maximum height of eight feet, are glazed by one-quarter inch polished plate glass or equivalent and are protected by automatic fire doors having a one and one-half hour fire protection rating and by automatic sprinklers complying with the construction requirements of subchapter seventeen of this chapter over the openings on the room side.

c. Separations and limitations. - Openings permitted by subparagraphs a and b of this paragraph shall not exceed in total length fifty percent of the length of such enclosure wall except where the length of such wall is less than sixteen feet. Adjoining openings shall be separated from each other a minimum of three feet by construction having a two hour fire-resistance rating.

d. Notwithstanding the restrictions in subparagraphs a, b, and c of this paragraph, the following openings may be authorized:

1. A space classified in occupancy group C, E, F-3 or F-4 within fire separations having a minimum fire-resistance rating of one hour, with an area not exceeding twenty-five hundred square feet, may have an unlimited length of show window under the following conditions:

(a) The maximum depth of show window shall be three feet.

(b) Automatic sprinklers complying with the construction requirements of subchapter seventeen of this chapter, shall be provided in the show window display area.

(c) The show window display area shall be protected on all sides, except for the glazed window, by construction having a two hour fire-resistance rating with access provided by means of a fireproof self-closing door having a three-quarter hour fire protection rating.

(d) The show window shall be glazed by one-quarter inch polished plate glass or equivalent.

(e) Glass or other noncombustible doors may be used for entrance to or egress from the space within fire separations when installed in combination with automatic fire doors having a one and one-half hour fire protection rating. Such automatic fire doors shall be located on the room side and shall be held open by approved door-holding devices actuated to release automatically upon the activation of smoke detecting devices, whether of the photoelectric cell or other approved type. In addition, automatic sprinkler heads, complying with the construction requirements of subchapter seventeen of this chapter, shall be provided over the door openings on the room side.

2. A space classified in occupancy group C, E, F-3, or F-4 within fire separations having a minimum fire-resistance rating of one hour, with an area not exceeding three thousand square feet, may have a maximum total length of unprotected openings upon a corridor or exit passageway not exceeding fifty percent of the space frontage along such corridor or exit passageway under the following conditions:

(a) The entire space shall be provided with automatic sprinklers complying with the construction requirements of subchapter seventeen of this chapter.

(b) The show window shall be glazed by one-quarter inch polished plate glass or equivalent.

(c) All corridor or exit passageway doors shall be self-closing, noncombustible, and smokeproof.

3. Show windows or other openings of unlimited lengths and heights shall be permitted on any corridor or exit passageway without requirements for fire-resistance doors under the following conditions:

(a) The entire floor area, including the corridors or exit passageways, shall be provided with automatic sprinklers complying with the construction requirements of subchapter seventeen of this chapter.

(b) The occupancy of all spaces on the floor shall be limited to occupancy groups C, E, F-3 and F-4.

(c) The widths of the corridors or passageways shall exceed the requirements of table 6-1 or subdivision (b) of this section, whichever is applicable, by at least fifty percent.

(d) All doors opening on the corridors or exit passageways shall be smokeproof, noncombustible, self-closing doors.

(e) Show windows or other openings shall be glazed by one-quarter inch polished plate glass or equivalent.

(f) Each corridor or exit passageway shall be provided with a fresh air intake, a positive smoke exhaust system and smoke detectors which, when activated, shall permit circulation only of fresh air.

(4) OCCUPANCY. - Street floor lobbies serving as exit passageways may be occupied by newsstands, candy and tobacco stands, information booths or similar occupancies, if such stands or booths are constructed of noncombustible materials, or of materials which comply with the requirements of section 27-348 of article five of subchapter five of this chapter for interior finish for exit passageways, provided that such stands or booths:

a. do not occupy more than one hundred square feet or five percent of the net floor area of the lobby, whichever is greater; and

b. do not reduce the required clear width of the lobby at any point; and

c. if constructed of combustible materials are protected by no less than two automatic sprinkler heads. Water for such sprinkler heads may be supplied from the domestic water supply system.

§[C26-604.4] 27-371 Doors. -

Exit doors and doors providing access to exits shall comply with the following:

(a) Exit doors. - Doors for required exits shall be self-closing swinging doors with a one and one-half hour fire protection rating, except in occupancy group J-3 buildings and except that:

(1) Exterior street floor exit doors having an exterior separation of more than fifteen feet need not have a fire-protection rating.

(2) Doors into stairs and exit passageways shall have at least a three-quarter hour fire protection rating.

(b) Corridor doors. - Doors that provide access to interior corridors required to have a one hour fire-resistance rating shall be self-closing swinging fire doors with a three-quarter hour fire-protection rating, except that in buildings classified in occupancy group G, in which an acceptable interior fire alarm system is installed and in which regular supervised fire drills are held, the doors to rooms or spaces devoted exclusively to non-hazardous uses in occupancy group G need not be fire-rated, provided they are swinging, self-closing one and three-quarter inch solid core wood, and have a maximum area of seven hundred twenty square inches of one-quarter inch thick wired glass vision panels. Other corridor doors except those provided for in subdivision (d) of section 27-369 of this article, shall be self-closing, swinging, noncombustible or one and three-quarter inch solid core wood doors, except that in buildings classified in occupancy group H-2 the doors need not be self-closing. Noncombustible mail slots having an area not exceeding forty square inches may be provided in corridor doors when the opening is protected by a closure activated by gravity or a spring device so as to keep it closed when not in use. Noncombustible louvers may be installed in corridor doors opening into toilets, service sink closets, and electric closets. Notwithstanding the foregoing restrictions in this subdivision, doors not prohibited by subdivision (d) of this section may open from spaces into corridors when in compliance with all of the provisions of paragraph three of subdivision (h) of section 27-370 of this article.

***(c) Smoke stop doors.-** Smoke stop doors shall be self-closing, swinging doors of metal, metal covered, or one and three-quarter inch solid core wood with clear wire glass panels having a minimum area of six hundred square inches per door and a maximum area of twelve hundred ninety-six square inches per door, except that in buildings not over two stories high, smoke stop doors may be of one and three-eighths inch solid core wood with clear wire glass panels, unless the doors are also used as horizontal exits in which case they shall comply with the provisions of subdivision (b) of section 27-373 of this article. In addition, smoke stop doors may be constructed of tempered glazing or the equivalent and be protected by sprinkler heads constructed in accordance with subchapter seventeen of this chapter and installed a maximum of six feet (6'-0") on centers on each side of the opening. Smoke stop doors may be double-acting but shall close the opening completely with only such clearance as is reasonably necessary for proper operation. Smoke stop doors shall normally be in the closed position, except that they may be left open if they are arranged to close automatically by an approved device which is actuated by an interior fire alarm system meeting the requirements of subchapter seventeen of this chapter or upon smoke detection. Tempered glass smoke stop doors shall be marked where required in accordance with the rules of the board of standards and appeals.

Local Law 26-2004.

(d) Prohibited doors. - Vertically sliding doors, rolling shutters, and folding doors shall not be used as exit doors or as corridor doors, except that overhead garage doors may serve as exits from buildings classified in occupancy group J-3, and except that sliding or rolling doors or gates may be used in F-2 places of assembly provided they are kept open when the place of assembly is occupied. Revolving doors may be used only to the extent permitted by subdivision (m) of section 27-371 of this article. Automatic

horizontally sliding fire doors shall be permitted only in horizontal exits in fire divisions required to have a four hour fire-resistance rating as specified in Table 5-3.

(e) Door opening widths.- The capacity of exit and corridor door openings shall be as listed in table 6-1. Door jambs or stops and the door thickness when open shall not reduce the required width by more than three inches for each twenty-two inches of width. The maximum width of any swinging door leaf shall be forty-eight inches. The minimum nominal width of corridor and exit door openings shall be thirty-six inches, except that where a door opening is divided by mullions into two or more door openings, the minimum nominal width of each such opening shall be thirty-two inches. The minimum nominal width of other door openings shall be as follows:

(1) Door openings to all habitable and occupiable rooms. - thirty-two inches.

(2) Door swinging in pairs (no mullion), opening. - forty-eight inches.

(3) Door openings to rooms used by bedridden patients and all single door openings used by patients in buildings classified occupancy group H-2. - forty-four inches.

(4) Door openings to toilet rooms in buildings to which the public has free access shall be thirty-two inches.

(5) Door openings giving access to at least one toilet, lavatory and bathtub or shower in each dwelling unit, in buildings or spaces classified in occupancy group J-1 or J-2, when such dwelling unit is accessible to individuals in wheelchairs [*sic*] - thirty-two inches.

(6) Door openings giving access to all toilets, lavatories and bathtubs or showers serving single room occupancies, which are accessible to individuals in wheelchairs-thirty-two inches.

*(7) Door openings for people having physical disabilities shall additionally comply with the requirements of reference standard RS 4-6.

Local Law 58-1987.

(f) Door heights.- The minimum nominal door opening height for exit and corridor doors shall be six feet eight inches. Door jambs, stops, sills, and closers shall not reduce the clear opening to less than six feet six inches.

(g) Door swing.- Exit doors, corridor doors from rooms or spaces classified in high hazard occupancy group A, or from factories as defined in the labor law, and corridor doors from rooms required to have more than one door under the provisions of section 27-365 of article four of this subchapter, shall swing in the direction of exit travel, except:

(1) Doors from rooms of instruction in buildings classified in occupancy group G, having an occupant load of less than seventy-five persons.

(2) Exterior street floor exit doors from lobbies in buildings classified in occupancy groups J-2 and J-3.

(3) Exterior street floor exit doors from spaces in occupancy group C or E not exceeding two thousand square feet in area, and occupied by less than fifty persons, where the maximum travel distance to a door does not exceed fifty feet.

(h) Floor level. - The floor on both sides of all exit and corridor doors shall be essentially level and at the same elevation for a distance, perpendicular to the door opening, at least equal to the width of the door leaf, except that where doors lead out of a building the floor level inside may be seven and one-half inches higher than the level outside.

(i) Closed doors. - Exit doors and corridor doors shall normally be kept in the closed position, except that corridor doors in buildings classified in occupancy group H-2 shall be exempt from this requirement.

(j) Door and window hardware. - Doors and windows shall be equipped with hardware as follows:

(1) FIRE PROTECTION REQUIREMENTS. -

a. Exit doors and corridors shall be readily openable at all times from the side from which egress is to be made and shall not require a key to operate from that side, except that:

1. Locks may be used in penal and mental institutions and areas, where required for security.

2. Locks may be used in banks, museums, jewelry stores and other places where extra safeguards are required, subject to the approval of the commissioner, and provided the locks are equipped with electrical release devices for remote control in case of emergency.

3. Stairways leading from the top floor to a roof may be provided with locked wire mesh gates openable by key in buildings classified in occupancy group G. The use of a hook and eye closing device on the inside of all doors to roofs shall be permitted.

*b. Doors opening into interior stair enclosures shall not be locked from either side with the following exceptions:

1. Doors may be locked to prevent access to the stair at the street floor.

2. In buildings classified in occupancy group E, less than one hundred feet in height, the doors may be locked on the stair side on each floor above the street floor.

3. In buildings classified in occupancy group E, one hundred feet or more in height, and existing office buildings one hundred feet or more in height, the doors may be locked on the stair side above the street floor except that at intervals of four stories or less, doors shall be openable from the stair side without the use of a key to permit reentry at such floors. In addition, the door on every floor where a keyed switch is required by the provisions of subchapter eighteen of this chapter shall be openable from the stair side without the use of a key to permit reentry at such floors.

4. When a locked door is provided with an automatic fail safe system for opening such door in the event of the activation of any automatic fire detecting device or when any elevator in readiness as provided in section 27-989 of subchapter eighteen of this chapter is activated, such door shall be deemed as openable from

the stair side [*sic*]. The installation of such automatic fail safe system shall comply with the requirements of reference standards RS 17-3A and RS 17-3B, whichever is applicable. Stair reentry signs required under section 27-394 of article nine of this subchapter shall specify that reentry is provided only during fire emergencies.
Local Law 14-1993.

c. Latch bolts shall be provided on all exit doors and corridor doors to hold them in a closed position against the pressure of expanding gases except that this requirement shall not apply to doors in stair enclosures in buildings classified in occupancy group G.

(2) SECURITY REQUIREMENTS. - The following provisions shall apply to all buildings erected or altered after December sixth, nineteen hundred sixty-eight that may be classified in residential occupancy group J-2. Existing buildings in such group shall comply with the requirements of article eleven of subchapter two.

a. Building entrance doors and other exterior exit doors shall be equipped with heavy duty lock sets with auxiliary latch bolts to prevent the latch from being manipulated by means other than a key. Latch sets shall have stopwork in the inside cylinder controlled by a master key only. Outside cylinders of main entrance door locks shall be operated by the tenants' key, which shall not be keyed to also open the tenants' apartment door. A light or lights shall be provided at or near the outside of the front entranceway of the building providing not less than five foot candles intensity measured at the floor level for the full width of the entranceway.

b. Doors to dwelling units shall be equipped with a heavy duty latch set and a heavy duty dead bolt operable by a key from the outside and a thumbturn from the inside. Those doors shall also be equipped with a chain guard so as to permit partial opening of the door. Dwelling unit entrance doors shall also be equipped with a viewing device located so as to enable a person on the inside of the entrance door to view a person immediately outside.

c. All openable windows shall be equipped with sash locks designed to be openable from the inside only. Grilles lockable from the inside only may be placed on the inside or outside of windows that are accessible from grade but that do not serve to provide access to exits.

d. Buildings classified in occupancy group J-2 containing eight or more dwelling units shall be provided with an intercommunication system located at the door giving access to the main entrance hall or lobby, consisting of a device or devices for voice communication between the occupant of each dwelling unit and a person outside said door to the main entrance hall or lobby, and permitting such dwelling unit occupant to release the locking mechanism of said door from the dwelling unit.

(k) Panic hardware. -

(1) Exit doors shall be equipped with fire exit bolts when providing an exit from:

a. Buildings classified in occupancy group G, except exit doors opening directly outdoors at grade from rooms having an occupant load of less than seventy-five persons,

b. F-1 places of assembly,

c. F-2, F-3 and F-4 places of assembly having an occupant load exceeding three hundred persons, except places of assembly having doors that are not equipped with locks and are openable at all times.

(2) Fire exit bolts shall be of an approved type, and shall release when a pressure exceeding fifteen pounds is applied to the releasing device in the direction of exit travel. The bars or panels shall extend at least two-thirds of the width of the door and shall be placed at least thirty inches, but not more than forty-four inches above the floor.

(l) Power operated doors. - Power operated doors or power assisted manually operated doors, may be used as exit or corridor doors provided they remain closed in case of power failure but shall be manually operable. No power operated door shall be credited as a required exit unless it swings in the direction of exit travel.

(m) Revolving doors. - Revolving doors shall not be used as exits in buildings classified in occupancy group F-1 or F-2, G, or H; nor shall revolving doors be used in any occupancy as interior doors providing access to exits, at the foot of stairs, or at the head of basement stairs. Where revolving doors are used as exits, they shall comply with the following:

(1) They may provide not more than one unit or exit width for each revolving door and not more than fifty percent of the required exit capacity at any location, provided that the revolving doors are located adjacent to, or within twenty feet, of swinging doors that provide the remaining required exit capacity at that location.

(2) They shall be collapsible, and designed and constructed so that:

a. Each wing is independently supported by a hanger with a corrosion resistant safety release which, when pressure of between sixty to eighty pounds is exerted simultaneously on the wings on opposite sides of the door pivot, the door wings will fold back on themselves in the direction of egress.

b. Each wing is provided with at least one push bar and glazed with at least 7/32 in. plate or tempered glass.

c. The inside diameter of the enclosure is at least six feet six inches.

d. The freely operable maximum rate of revolving speed is controlled so that it is not greater than fifteen rpm.

e. The upper surface of the floor finish within the door enclosure is flush with the adjacent floor area, and permanently secured in place.

(3) The owner shall be responsible at all times for the operation and maintenance of revolving doors, and shall have the doors inspected at intervals not to exceed

six months. All parts of the doors, including the safety releases and speed control mechanism, shall be maintained in good working order. Inspection reports shall be made in writing and kept on file at the premises for at least two years.

(n) Turnstiles. - No turnstile or other device designed to restrict travel shall be placed so as to obstruct any required exit, except that approved turnstiles that turn freely in the direction of exit travel may be used in any occupancy where revolving doors are permitted. Turnstiles shall be not more than thirty-six inches nor less than thirty inches high and shall be of such design as to provide twenty-two inches clear width as the turnstile rotates. Each turnstile may be credited with a capacity of one unit of exit width. Not more than fifty percent of the required exit capacity may be provided by turnstiles at any location. The balance of the required exit capacity shall be provided by swinging doors located within twenty feet of the turnstiles. Turnstiles over thirty-six inches high shall meet the applicable requirements of this code for revolving doors.

§[C26-604.5] 27-372 Area of refuge. -
Areas of refuge shall comply with the following:

(a) Separation. - Areas of refuge shall be separated from the area which they serve by construction having at least a two hour fire-resistance rating.

(b) Floor area. - Areas of refuge shall provide clear public space or space occupied by the same tenant or owner, adequate in size to hold the occupant load it receives from the floor area it serves as computed by the provision of section 27-367 of article four of this subchapter, in addition to its own occupant load, allowing at least three square feet per person, except that in buildings classified in occupancy group H-2 for patient areas only, the allowance shall be at least thirty square feet per person.

(c) Required exits. - Areas of refuge shall be provided with at least one vertical exit. When an area of refuge is located higher than the eleventh floor of a building, the vertical exit shall be supplemented by at least one elevator.

(d) Locking. - Doors providing access to areas of refuge shall be kept unlocked at all times when any floor area served by the area of refuge is occupied.

§[C26-604.6] 27-373 Horizontal exits. –
A horizontal exit to an area of refuge may consist of doors through walls or partitions having at least a two hour fire-resistance rating; of a balcony or exterior vestibule leading around the end of a fire division to another fire area or building; or it may be a bridge or tunnel between two buildings. Horizontal exits shall comply with the following:

(a) Capacity. - The capacity of horizontal exits shall be as listed in table 6-1. Only the widths of doors swinging in the direction of exit travel to the area of refuge shall be counted.

(b) Door requirements. - Doors shall be swinging, self-closing doors having a fire protection rating of one and one-half hours, except that doors [*sic*] in fire divisions having a three hour or four hour fire-resistance rating shall have opening protective as required by table 5-3. Each swinging door shall swing in the direction of exit travel, and when travel is in both directions, as when two areas of refuge serve as areas of refuge for each other, at least two door openings shall be provided, the doors of which shall swing in opposite directions. Signs shall be placed over each door on the side from which egress is made, indicating the exit door.

(c) Balconies, bridges and tunnels. -
When serving as horizontal exits, balconies, bridges, and tunnels shall comply with the following:

(1) Their width shall be equal to at least the width of the doors opening on them, but in no case less than three feet eight inches.

(2) They shall be enclosed at each end by doors complying with subdivision (b) of this section.

(3) The floor level at doors shall be the same as that of the building except that the floor level of open balconies or open bridges shall be approximately seven and one-half inches lower.

(4) Where there is a difference in level between the areas connected, the floors of the horizontal exit shall be ramped not more than one inch in ten inches.

(5) Exterior wall openings within thirty feet horizontally of any open bridge or balcony or below any open bridge or balcony shall be provided with opening protectives having a three-quarter hour fire protection rating.

(6) Balconies shall not face or open on yards or courts less than twelve feet wide, and shall be constructed as required for exterior corridors.

(7) Exterior bridges shall be constructed of noncombustible materials. Interior bridges or tunnels shall be constructed of materials providing a two hour fire-resistance rating.

§[C26-604.7] 27-374 Supplemental vertical exits. -
Enclosed interior stairs, ramps, or escalators may provide access to an area of refuge located on a floor nearer to the street floor, when complying with the following:

(a) Limitation. - They shall be supplemental vertical exits serving no other purpose than to connect a floor area with an area of refuge.

(b) Capacity. - The capacity of supplemental vertical exits shall be as listed for stairs in table 6-1.

(c) Construction.- Supplemental vertical exits shall comply with all of the construction requirements for interior stairs as provided in section 27-375 of this article.

(d) Openings.- There shall be no openings insupplemental vertical exit enclosures other than the exit doors and doors leading into the area of refuge.

(e) Identification. - Every supplemental vertical exit shall have a sign at the entrance designating its destination reading, "EXIT TO AREA OF REFUGE ON..... FLOOR."

§§[C26-604.8] 27-375 Interior stairs. - Interior stairs shall comply with the following requirements:

(a) Capacity. - The capacity of interior stairs shall be as listed in table 6-1.

(b) Width. - The width of interior stairs shall be the clear width between walls, grilles, guards, or newel posts. Stair stringers may project into the required width not more than two inches on each side of the stair. No interior stair shall be reduced in width in the direction of exit travel. Interior stairs shall be at least forty-four inches wide except as follows:

(1) Interior stairs may be not less than thirty-six inches wide when serving not more than thirty occupants per stair on any floor in buildings classified in occupancy groups J-1 and J-2, or when serving buildings classified in occupancy group J-3 and exceeding four stories in height, or when serving not more than sixty occupants per stair on any floor in buildings classified in occupancy groups E, B, and D.

(2) Interior stairs may be not less than thirty inches wide when serving mezzanines having an occupant load not exceeding twenty-five persons or when located in buildings classified in occupancy group J-3 not more than three stories in height. Interior stairs in four story buildings classified in occupancy group J-3 shall be a minimum of thirty-three inches in width.

(c) Headroom. - The clear headroom shall be at least seven feet, except that in buildings classified in occupancy groups J-2 and J-3, the minimum clear headroom may be six feet eight inches. Headroom in a flight of stairs shall be measured vertically between two parallel inclined planes, one of which contains the line of the nosing or upper front edge of each tread and extends to its intersection with a landing and the other of which is through any point directly above the first plane that limits the headroom of the stair.

(d) Landings and platforms. - Landings and platforms shall be provided at the head and foot of each flight of stairs, except at the head of basement stairs in one-and two-family dwellings, and shall comply with the following:

(1) The minimum width of landings and platforms perpendicular to the direction of travel shall be equal to at least the width of the stairs except that on a straight-run stair, the distance between risers of upper and lower flights at intermediate landings or platforms need not be more than forty-four inches.

(2) The maximum vertical rise of a single flight of stairs between floors, between landings or platforms, or between a floor and a landing or platform, shall not exceed eight feet in buildings classified in occupancy groups F and H, and twelve feet in all other occupancy groups. No flight of stairs shall have less than two risers.

(3) Landings and platforms shall be enclosed on sides by walls, grilles or guards at least three feet high.

(e) Risers and treads. - Risers and treads shall comply with table 6-4 and with the following:

(1)The sum of two risers plus one tread exclusive of nosing shall be not less than twenty-four nor more than twenty-five and one-half inches.

(2) Riser height and tread width shall be constant in any flight of stairs from story to story.

(3) Winders shall not be permitted in required exit stairs except in one- and two-family dwellings and except as permitted in subdivision 1 of this section. The width of winder treads when measured eighteen inches from the narrower end shall be at least equal to the width of treads above or below the winding section.

(4) Curving or skewed stairs may be used as exits when the tread and riser relationship is in accordance with table 6-4 when measured at a point eighteen inches in from the narrow end of the tread; and no tread shall be more than three inches narrower or three inches wider at any point than the width established eighteen inches in from the narrow end.

(f) Guards and handrails. -Stairs shall have walls, grilles, or guards at the sides and shall have handrails on both sides, except that stairs less than forty-four inches wide may have a handrail on one side only. Handrails shall provide a finger clearance of one and one-half inches, and shall project not more than three and one half inches into the required stair width.

(1) Stairs more than eighty-eight inches wide shall have intermediate handrails dividing the stairway into widths that maintain the nominal multiples of twenty-two inches, but the widths shall not be greater than eighty-eight inches nor less than forty-four inches.

(2) The height of handrails above the nosing of treads shall be not more than thirty-four inches nor less than thirty inches.

(3) Handrails shall be returned to walls and posts when terminated, except in one and two-family dwellings.

(4) Handrails shall be designed to support loads in compliance with the requirements of subchapter nine of this chapter.

(5) Handrails in all stairs shall be of materials having a flame-spread rating not exceeding one hundred fifty.

(g) Stair doors. - Doors providing access to stairs shall comply with the requirements of subdivision (a) of section 27-342 of article five of subchapter five of this chapter and subdivision (e) of section 27-371 of this article. The swing of stair doors shall not block stairs or stair landings, nor shall any door at any point of its swing reduce the effective width of the landing or stair to less than seventy-five percent of the required width of the landing or stair, or to less than the width of the door opening on them. The width of doors from a stair shall not be less than the number of units of exit width required for the capacity of the stair, but in no case shall the door width be less than required by subdivision (e) of section 27-371 of this article.

(h) Stair construction. -

Risers, treads, stringers, landings, platforms, and guards, exclusive of handrails, shall be built of noncombustible materials except that interior stairs in buildings of construction group II may be built of combustible materials in buildings classified in occupancy group B-

2, C, D or E when the buildings are two stories in height or less, and in buildings classified in occupancy group J-2 or J-3 when the buildings are not more than three stories in height, and in the case of J-2 occupancy group, when occupied by not more than three families. Interior stairs shall have solid treads. All risers shall be closed except as otherwise provided in subdivision (i) of this section. When of combustible construction, the soffit of interior stairs shall be fire protected by material having a minimum fire resistive rating of one hour or five-eighths inches gypsum wall board or equivalent, or the space beneath shall be enclosed without openings by material having a one hour fire resistance rating unless permitted to have open risers by subdivision (I) of this section. Where two separate interior stairs are contained within the same enclosure (so called "scissor stairs"), each stair shall be separated from the other by noncombustible construction having a fire resistance rating equal to that required for the stair enclosure. Stairs, platforms, and landings shall be designed to support all loads in compliance with the requirements of subchapter nine of this chapter. Treads and landings shall be built of or surfaced with nonskid materials.

(i) Stair enclosures. -

(1) Interior stairs shall be enclosed with construction complying with the requirements of Table 3-4 except that:

a. In buildings three stories or less in height excluding those classified in occupancy group J-1 or J-2 combustible construction group II, the enclosing construction may have a one hour fire resistant rating.

b. Stairs in buildings or spaces classified in occupancy group J-3 and not more than three stories in height, need not be enclosed except as otherwise required in subdivision (a) of section 27-341 of article five of subchapter five of this chapter. Stairs may have open risers in one family dwellings and group homes.

c. Unenclosed stairs in buildings classified in assembly occupancy group F may be permitted as provided in subchapter eight of this chapter.

d. Stairs from floors or mezzanines may be unenclosed, with open or closed risers.

e. In buildings classified in occupancy group J-2 occupied exclusively by not more than one family on each story without boarders, roomers or lodgers and not more than three stories in height, the enclosing construction may have a one hour fire-resistance rating which may be constructed of combustible material provided that the stair enclosure is protected with an automatic sprinkler system complying with the construction provisions of subchapter seventeen of this chapter.

f. In buildings classified in occupancy group J-1 or J-2 not more than two stories in height of combustible construction group II, the enclosing construction may have a one hour fire-resistance rating which may be constructed of combustible material; however, where only one vertical exit is provided the stair enclosure shall be protected throughout with an automatic sprinkler system constructed in accordance with the provisions of subchapter seventeen of this chapter.

g. Except as provided in subparagraphs (a), (e) and (f) of this paragraph, in all buildings or spaces classified in occupancy group J-1 or J-2, the enclosing construction shall be of masonry or an approved equivalent material having at least a two hour fire-resistant rating.

(2) Access stairs connecting not more than two stories which do not serve as a required exit may be constructed without an enclosure in buildings classified in other than occupancy group H-2. Such stairs shall be additional to and shall not obstruct or interfere with required exit facilities. When the first story below grade is served by an interior, unenclosed access stair, it shall be sprinklered in accordance with the construction provisions of subchapter seventeen of this chapter.

(3) The interior finish of interior stair enclosures shall be in accordance with the requirements of table 5-4.

(4) Stair enclosures shall be vented in accordance with the requirements for shafts in subdivision (d) of section 27-344 of article five of subchapter five of this chapter except that stair enclosures for buildings or spaces classified in occupancy group J-1 or J-2 shall be vented as follows:

a. In occupancy group J-2 buildings three stories in height and with not more than one dwelling unit per story or two stories in height with not more than two dwelling units per story, shall be provided with a skylight at least nine square feet in area, glazed with plain glass with a wire screen over and under and provided with fixed or movable ventilators having a minimum open area of forty square inches.

b. In occupancy group J-1 or J-2 buildings two stories in height with more than two dwelling units per story shall be provided with a skylight of at least twenty square feet in area, glazed with plain glass, with a wire screen over and under and provided with fixed or movable ventilators having a minimum open area of forty square inches.

c. In occupancy group J-1 buildings exceeding two stories in height and in occupancy group J-2 buildings three stories in height with more than one dwelling unit per story or exceeding three stories in height shall be provided with a skylight at least twenty square feet in area, glazed with plain glass with a wire screen over and under and provided with fixed or movable ventilators having a minimum open area of one hundred forty-four square inches. In lieu of the skylight and ventilators a window of equal area may be provided with fixed louvers having a minimum open area of one hundred forty-four square inches installed in or immediately adjacent to the window.

(5) When dwelling units are located over a space classified in occupancy group C or E on the street floor, they shall be provided with a separate enclosed interior stair, or with an exterior stair.

*(6) Impact resistance.- Stair enclosures serving occupancy group E spaces (office spaces) in high rise buildings constructed pursuant to applications filed on

or after July 1, 2006 shall comply with rules to be promulgated by the commissioner establishing minimum impact resistance standards. Such rules shall permit compliance with assemblies comprising approved reinforced construction boards affixed onto stud framing. The commissioner shall promulgate such rules on or before January 1, 2006.

Local Law 26-2004.

(j) Openings and obstructions to stair enclosures.- No piping of any kind, with the exception of piping required or permitted in subchapter seventeen of this code, shall be permitted within a stair enclosure. No openings of any kind, other than windows, fire department access panels, exit doors and openings specifically authorized in reference standard RS 5-18 shall be permitted within a stair enclosure. Pipes required or permitted by such subchapter seventeen and protected in accordance therewith which do not reduce the required clearances of the enclosure may be permitted. Ducts protected in accordance with the requirements of subchapter thirteen of this chapter, which do not reduce the required clearances of the enclosure, may be permitted. In addition, in buildings in occupancy group J-2, which are three stories or less in height and occupied by not more than two families on each story, a door from an apartment may open directly into a stair, and the door may swing into the apartment.

(k) Roof access. -

(1) Except as otherwise provided for in paragraphs two and three of this subdivision, in buildings or in building sections more than three stories or forty feet high with roofs having a slope of less than twenty degrees, access to the roof shall be provided by at least one interior stair, except that access to setback roof areas may be through a door or window opening to the roof. Interior stairs extending to roofs shall be enclosed in bulkheads of fire-resistant construction meeting the requirements of subchapter five of this chapter.

(2) In buildings or in building sections classified in occupancy group J-1 or J-2 more than two stories in height, except as otherwise provided for in paragraph three of this subdivision, with roofs having a slope of fifteen degrees or less all interior stairs, except those terminating at a level of a setback roof, shall extend to the roof and shall be enclosed in bulkheads of fire-resistive construction meeting the requirements of subchapter five of this chapter. Stairs terminating at the level of a setback shall provide access to the setback roof areas through a door except where the setback is less than four feet in width, measured from the inside of the parapet wall, and less than ten feet in length.

(3) In buildings or in building sections classified in occupancy group J-1 or J-2 two stories in height and in occupancy group J-2 three stories in height with not more than one dwelling unit per story with roofs having a slope of fifteen degrees or less, access to the roof shall be provided through a scuttle at least twenty-one inches in width and twenty-eight inches in length and shall comply with subdivision (c) of section 27-338 of article four of subchapter five of this chapter. Scuttles shall be located within each stair enclosure with a stationary iron ladder leading thereto.

(l) Spiral stairs. - Spiral stairs may serve as access stairs between two floors or levels in accordance with the provisions of paragraph two of subdivision (i) of this section. Such stairs may not serve as required exits, except that unenclosed spiral stairs when built of noncombustible materials and having a tread length of at least thirty inches may serve as exits from mezzanines or balconies having an occupant load not exceeding twenty-five persons.

TABLE 6-4 MAXIMUM RISER HEIGHT AND MINIMUM TREAD WIDTH

Occupancy Group Classification of Building	Maximum Riser Height (in.)	Minimum Tread[1] Width (in.)
Residential J-3 (with closed risers)…	8 ¼	9 plus 1 ¼ nosing
Residential J-3 (with open risers)…	8 ¼	9 plus ½ nosing
Residential J-2 (with only three dwelling units)…..	8 ¼	9 plus 1¼ nosing
Assembly F…….	7 ½	9 ½ plus nosing
Institutional H-2…..	7	10 plus nosing
All others[2]……..	7 ¾	9 ½ plus nosing

Notes for Table 6-4:

[1]Treads may be undercut a distance equal to the nosing. A nosing shall not be required when tread width is eleven inches or wider.

[2]The proportions and dimensions of treads and risers may be adjusted in buildings classified in occupancy group G to suit the age of occupants, subject to the approval of the commissioner.

§[C26-604.9] 27-376 Exterior stairs. -

Exterior stairs may be used as exits in lieu of interior stairs provided they comply with all of the requirements for interior stairs, except enclosure, and except as modified below:

(a) Capacity. -The capacity of exterior stairs shall be as listed in Table 6-1.

(b) Height limitation. - No exterior stair shall exceed seventy-five feet or six stories in height.

(c) Construction. - Exterior stairs shall be constructed entirely of non-combustible materials, except that in buildings classified in occupancy groups other than G, F, or H, or construction group II, located outside the fire districts, exterior stairs may be built of combustible materials when the buildings are two stories or thirty feet in height or less and have an occupant load not exceeding forty persons per floor above the street

below. Exterior stairs shall be roofed, and shall be protected along their outer sides as required for exterior corridors in subdivision (f) of section 27-369 of this article. Treads, landings, and platforms shall be solid and unperforated. Risers may be partially open to permit water and snow to drain.

(d) Opening protective. - In buildings four stories or fifty feet in height or more, there shall be no openings in the building walls adjoining exterior stairs other than one-quarter* hour self-closing swinging fire doors, and no openings nearer than ten feet to the stair (measured horizontally) that are not provided with three-quarter hour opening protectives.

(e) Location. - No exterior stair shall be located nearer than ten feet to an interior lot line.

(f) Discharge.- Exterior stairs shall extend continuously to grade.

**** As enacted but "three-quarter hour" probably intended.***

*****§27-376.1 Fire tower.**- Fire towers may be used as exits in lieu of interior stairs provided they comply with all of the requirements for interior stairs, except as modified below.

(a) The enclosing walls of fire towers shall be of incombustible materials or assemblies having a fire-resistance rating of at least four hours. Such walls shall be without openings, except for doors serving as means of egress.

(b) At each story served by a fire tower, access to the stairways of such fire tower shall be provided through outside balconies or fireproof vestibules. Such balconies or vestibules shall be at least three feet eight inches in width and shall have unpierced floors of incombustible materials and shall be provided with substantial guard railings at least four feet high, without any openings greater than five inches in width.

(c) Such balconies or vestibules of fire towers shall be level with the floors of the structure and the platforms of the stairs connected by such balconies. Such balconies or vestibules shall be separated from the structure and the stairs by self-closing swinging doors with a one and one-half hour fire protection rating, capable of being opened from both sides without the use of a key or other unlocking device.

(d) Balconies or vestibules of fire towers shall open on a street or yard, or on a court open vertically to the sky for its full height, having a minimum net area of one hundred five square feet and a minimum dimension of seven feet. The opening from the vestibule to the street, yard or court shall have a minimum area of eighteen square feet and a minimum dimension of two feet six inches. It shall be unlawful to leave openings in the court walls surrounding an interior fire tower, other than the openings from the vestibules, within fifteen feet of the balcony, except that self-closing windows with a three-quarter hour fire protection rating may be used if such windows are at least ten feet from the balcony, provided that the area of the court is at least twelve feet by twenty-four feet.

(e) Fire towers shall terminate at grade level and shall exit directly to the street independently of corridors serving other stairways, except when the fire tower terminates in the ground floor corridor outside of the inner vestibule and within ten feet of the building line.

(f) Fire tower stairs shall comply in all other respects with the applicable requirements of section 27-375 of this code.

******Local Law 26-2004.***

§[C26-604.10] 27-377 Ramps. -

Interior or exterior ramps may be used as exits in lieu of interior or exterior stairs provided they comply with the applicable requirements for interior stairs in section 27-375 of this article or exterior stairs in section, 27-376 of this article respectively, and with the following:

(a) Capacity.- The capacity of ramps shall be as listed in Table 6-1.

(b) Maximum grade. - Ramps shall not have a slope steeper than 1 in 8, except that in buildings classified in occupancy group H the slope shall not exceed 1 in 12, and except as provided in subchapter eight of this chapter for places of assembly.

(c) Design.-

(1) CHANGES IN DIRECTION.- Ramps shall be straight, with changes in direction being made at level platforms or landings, except that ramps having a slope not greater than 1 in 12 at any place, may be curved.

(2) LENGTH.- The sloping portion of ramps shall be at least three feet but not more than thirty feet long between level platforms or landings.

(3) PLATFORMS. - Level platforms or landings, at least as wide as the ramp, shall be provided at the bottom, at intermediate levels where required, and at the top of all ramps. Level platforms shall be provided on each side of door openings into or from ramps having a minimum length in the direction of exit travel of three feet, and when a door swings on the platform or landing a minimum length of five feet.

(4) DOORS. - Door openings into or from ramps shall comply with the requirements for stairs in subdivision (g) of section 27-375 of this article. No door shall swing over the sloping portion of a ramp.

(5) GUARDS AND RAILINGS. - Guards and railings of ramps shall comply with the applicable requirements of subdivision (f) of section 27-375 of this article except that only ramps having a slope steeper than 1 in 12 need comply with the requirements for handrails and intermediate handrails shall not be required.

(6) SURFACE. - Interior ramps exceeding a slope of 1 in 10 and all exterior ramps shall be provided with nonslip surfaces.

**(7) Ramps for people having physical disabilities shall additionally comply with the requirements of reference standard RS 4-6.

*****Local Law 58-1987.***

§[C26-604.11] 27-378 Escalators. -

Escalators may be used as exits in lieu of interior stairs provided they comply with all of the requirements of

subchapter eighteen of this chapter and with the applicable requirements for enclosed interior stairs, except as modified below:

(a) Capacity. - The capacity of escalators as listed in table 6-1 shall be based on the following:

MINIMUM WIDTH (IN.) AT:

Step	Balustrade[1]	Enclosure [2]	Units of Exit Width
24	32	52	1 ½
40	48	68	2

Notes:

[1]Measured twenty-seven inches above front edge of tread.

[2]Clear width above handrails.

(b) Acceptable exits. -
Only escalators moving in the direction of exit travel may be credited as exits, except that any escalator may be credited when it is connected to an automatic fire detection system that will cause it to stop simultaneously with the detection of fire. The detection system shall comply with the construction provisions of subchapter seventeen of this chapter. Where an escalator provides exit facilities from only one floor of a building, the automatic detection system shall be located on that floor. Where escalators provide exit facilities from more than one floor, the detection system shall be located on all floors so served, and shall cause escalators on all floors of the section of the building that they serve to stop operating. The stopping mechanism shall operate to bring the escalator to a gradual, rather than an abrupt stop.

(c) Escalators not used as exits. - Escalators that do not serve as exits, and that connect more than two stories of a building, shall be completely enclosed with noncombustible construction having a three-quarter hour fire-resistance rating, except that in buildings completely protected by an automatic sprinkler system complying with the construction requirements of subchapter seventeen of this chapter, such escalators may, alternatively, be protected by one of the methods specified in subchapter eighteen of this chapter.

§[C26-604.12] 27-379 Moving walkways. -
Pedestrian walkways consisting of conveyor belts shall be considered as exit passageways if level, or as ramps if inclined, and shall be acceptable as exits if they comply with the applicable requirements for exit passageways or ramps, and with the following:

(a) Capacity. - The capacity shall be as listed under exit passageways or ramps, as the case may be, in table 6-1.

(b) Acceptable exits.- Only walkways moving in the direction of exit travel may be credited as exits, except that any moving walkway may be credited when it is connected to an automatic fire detection system that will cause it to stop simultaneously with the detection of fire on the floor it serves. Such detection system shall comply with the construction provisions of subchapter seventeen of this chapter.

(c) Design and construction. - Walkways shall comply with the requirements of subchapter eighteen of this chapter.

(d) Enclosure. - Walkways that do not serve as exits, but are inclined so as to require an opening in any floor, shall be enclosed as required for escalators in subdivision (c) of section 27-378 of this article.

§[C26-604.13] 27-380 Fire escapes. –
Fire escapes constructed on existing buildings when altered or as a second means of egress for group homes as permitted by section 27-368 of this article shall comply with the following:

(a) Capacity. - The capacity of fire escapes shall be as listed in table 6-1 for stairs.

(b) Stairs. -The minimum width of fire escape stairs shall be twenty-two inches. Treads shall have a minimum width of eight inches, exclusive of a required one inch nosing. The maximum height of risers shall be eight inches. No flight of stairs shall exceed twelve feet in height between landings.

(c) Landings. - Landings shall be provided at each story served by fire escapes. The minimum width of landings shall be three feet, and the minimum length shall be four feet six inches. Floor openings in landings shall be at least twenty-two inches by twenty-eight inches.

(d) Handrails and guards. - Handrails having a minimum height of thirty-two inches above the tread nosing shall be provided on both sides of stairs, and guards having a minimum height of thirty-six inches shall be provided on all open sides of landings, openings in guards shall be of such dimensions as to prevent the passage of a five inch dia. ball.

(e) Construction. -
Fire escapes shall be constructed of noncombustible materials adequately protected against deterioration by corrosion or other effects of exposure to the weather, and shall be designed to comply with the requirements of subchapter nine of this chapter.

(f) Access. - Access to fire escapes shall be by doors or windows having a minimum clear opening of twenty-four inches in width and thirty inches in height. Such doors or windows shall have a fire protection rating of three-quarters of an hour except in buildings classified in occupancy group J-2.

(g) Discharge.- The top landing of fire escapes shall be provided with a stair or gooseneck ladder leading to the roof, except that this requirement shall not apply to buildings having a roof pitch of more than twenty degrees. The lowest landing of fire escapes shall be not more than sixteen feet above grade and shall be provided with a stair to grade, which may be counterbalanced.

ARTICLE 6 EXIT LIGHTING

§[C26-605.1] 27-381 Requirements. -
Corridors and exits shall be provided with artificial lighting facilities, except as otherwise permitted by the provisions of subchapter twelve of this chapter, in accordance with the following:

(a) Illumination of at least two foot candles measured at the floor level shall be maintained continuously, during occupancy, in exits and their access facilities for their full length, at changes in direction in and intersections of corridors, balconies, exit passageways, stairs, ramps, escalators, bridges, tunnels, landings, and platforms, and as provided in subchapter eight of this chapter for places of assembly, except that this requirement shall not apply to dwelling units.

(b) In buildings classified in occupancy groups B-1 and B-2, exit lighting need only be maintained when a section of floor is occupied.

(c) Illumination shall be so arranged that the failure of any one light shall not leave any area in darkness.

(d) Phosphorescent materials shall not be used as a method of providing illumination, nor shall battery operated electric lights or portable lamps or lanterns be used as primary sources of lighting.

*(e) (1) Buildings and existing buildings containing an F-4 place of assembly with an occupant load of three hundred or more persons shall install emergency lighting in each vertical exit serving the floor on which the place of assembly is located so as to provide a continuously lighted passage to the exterior of the building. Such lighting shall be connected to an emergency power source or to storage battery equipment meeting the requirements of the commissioner.

(2) Existing buildings required to comply with this subdivision shall install the emergency lighting on or before April first, nineteen hundred eighty-seven.

Local Law 59-1996.

§[C26-605.2] 27-382 Power source. -

*(a) Where a total of more than four lights is required, exit lighting shall be connected to an emergency power source or to storage battery equipment meeting the requirements of the commissioner, provided, however, that in existing buildings, the exit lighting may be on circuits that are separate from the general lighting and power circuits, taken off ahead of the main switch.

(b) Existing high rise buildings classified in occupancy group C, D or H and existing buildings classified in occupancy group E, G or J-1 (except for "residential hotels," as such term is defined by the commissioner pursuant to rules and regulations) shall comply with the requirements of this section on or before April first, nineteen hundred eighty-seven.

****Local Law 59-1996.***

***ARTICLE 7 EXIT SIGNS AND OTHER MARKINGS

***§[C26-606.1] 27-383 Requirements.- (a) Exit signs.-** Except in occupancy groups J-2 and J-3, the location of every exit on every floor and every opening from a room classified in occupancy group J-1 and containing cubicles shall be clearly indicated by exit signs. Such signs shall be placed at an angle with the exit opening if such placement is required for the signs to serve their purpose. In long corridors, in open floor areas, and in all other situations where the location of the exit may not be readily visible or understood, directional signs shall be provided to serve as guides from all portions of the corridor or floor.

(b) Exit path markings in high rise office buildings and in occupancy group E high rise buildings.- On and after July 1, 2006 all high rise office buildings and all high rise buildings classified in occupancy group E shall have exit path markings conforming to this subdivision. This provision shall be retroactive and shall apply to buildings constructed on and after such date and to buildings in existence on such date. All exit path markings required herein shall be of an approved photoluminescent material. The markings shall be washable, non-toxic, non radioactive, and if subjected to fire must be self extinguishing when the flame is removed.

(1) All doors opening to corridors, to an exit, or to an exit passageway, shall be marked with the word “exit”.

(2) Within exit stairs, horizontal extensions in exit stairs, horizontal exits, supplemental vertical exits and exit passageways, except within street level lobbies, there shall be directional markings.

(3) Required markings for exit paths shall comply with the technical standards for installation and placement to be set forth in a reference standard. Such reference standard shall be designated RS 6-1 and shall be adopted on or before January 1, 2006.

****Local Law 26-2004.***

§27-383.1 Additional requirements for high rise office buildings and occupancy group E high rise buildings.- In high rise office buildings and in occupancy group E high rise buildings:

(a) Illuminated exit signs complying with section 27-386 of this subchapter shall be placed in stairwells with horizontal extensions to indicate the transition from vertical to horizontal direction and at turns along the horizontal path.

(b) A supplementary sign complying with sections 27-394 and 27-395 of this subchapter, except that the lettering and numerals shall be at least one inch high, indicating the location of a recessed re-entry door, shall be securely attached on the wall of the landing that faces the evacuee on the stairs.

(c) In stairs where there is no entry or exiting from such stair for more than four floors, a sign complying with sections 27-394 and 27-395, except that the lettering and numerals shall be at least one inch high, shall be securely attached at the beginning of the descent into such portion of the stair on the wall of the landing that faces the evacuee on

the stairs stating the location of the next re-entry or exiting floor. On each floor within such portion of the stair a sign complying with sections 27-392 and 27-395 shall be securely attached to the wall of the landing that faces the evacuee on the stairs approximately five feet above the floor indicating the floor number.

(d) Signs shall be readily visible from the egress direction.

(e) High rise office buildings and high rise buildings classified in occupancy group E in existence on October 22, 2004 shall comply with this section on or before July 1, 2007. For the purpose of this section, a high rise building shall be deemed to be in existence on October 22, 2004 if on such date it is complete or under construction or where an application for approval of plans was filed with the department prior to such date and construction commenced within two years after such date.

****Local Law 26-2004.***

§[C26-606.2] 27-384 Power source. -

*(a) Where a total of more than four exit and/or directional signs is required, the signs shall be connected to an emergency power source or to storage battery equipment meeting the requirements of the commissioner, provided, however, that in existing buildings, the signs may be on circuits that are separate from the general lighting and power circuits, taken off ahead of the main switch.

****Local Law 59-1996.***

(b) Existing high rise buildings classified in occupancy group C, D or H and existing buildings classified in occupancy group E, G or J-1 (except for "residential hotels," as such term is defined by the commissioner pursuant to rules and regulations) shall comply with the requirements of this section on or before April first, nineteen hundred eighty-seven.

**(c) Notwithstanding the foregoing, in the existing buildings required to comply with subdivision (b) of this section, all such existing exit and/or directional signs on circuits taken off ahead of the main switch shall be connected to an emergency power source or to storage battery equipment meeting the requirements of the commissioner on or before July 1, 2007.

*****Local Law 26-2004.***

§[C26-606.3] 27-385 Exit sign design. -

Exit signs shall read only "exit" and shall be of the externally lighted, internally lighted, or electroluminescent type, except that they may be nonilluminated in buildings not provided with artificial lighting.

(a) The artificial light source on externally lighted signs shall provide a red light, either by the use of an incandescent colored bulb or other visible red light source, so as to provide at least twenty-five foot candles on the exposed face of the sign. Visibility of the sign shall not be obscured by the location of the light source.

(b) For internally lighted signs, the average initial brightness of the letters shall be at least twenty-five ft. lamberts, and where an illuminated background is used, its average initial brightness shall be at least two hundred fifty ft. lamberts. The light source shall not be modified or changed nor shall lamp life multipliers be used so as to reduce these brightness levels.

(c) The letters of exit signs shall be red. The background of externally lighted signs shall be white. The background of internally lighted signs shall be either stenciled metal with a light gray or white color, or translucent frosted, opal glass, slow-burning plastic, or the plastic edge-glow type with white plastic separators. The letters for internally lighted signs shall be translucent red.

(d) The letters shall be block lettering at least four and one-half inches high with nine-sixteenths inch strokes, except in buildings and spaces classified in occupancy group F and J-1, where they shall be at least eight inches high with the strokes at least three-quarters of an inch wide.

(e) In locations where breakage may occur, exit signs shall be of shock resistant materials, or shall otherwise be protected against breakage.

(f) Except for buildings not provided with artificial lighting and buildings which maintain one or more auxiliary systems for emergency exit lighting in the event of a public utility failure, there shall be either (1) an illuminated exit sign with the background thereon made of an approved phosphorescent material or (2) a material with an opaque text and placed adjacent to or as close as possible to such illuminated sign. The phosphorescent material after exposure to normal lighting conditions shall be capable of remaining visible in total darkness for a period of at least eight hours. The signs shall be washable, non-toxic, non-radioactive and if subjected to fire must be self-extinguishing when the flame is removed.

§[C26-606.4] 27-386 Directional sign design.-

Directional exit signs shall comply with all of the requirements for exit signs in section 27-385 of this article, and shall read "EXIT" with a horizontal arrow or arrows indicating the direction to the exit or exits. However, when the arrow is below the letters, the letters may be three and three-eighths inches high and nine-sixteenths inch strokes, except in buildings and spaces classified in occupancy group F where they shall be at least five inches high with nine-sixteenths inch strokes. The arrow or arrows shall be red.

§[C26-606.5] 27-387 False exits. -

Any door, passageway, stair, or other means of communication that is not an exit or that is not a way to an exit, but is so located as to be mistaken for an exit, shall be identified with a sign reading "NOT AN EXIT," shall be identified by a sign indicating its use or purpose or shall be provided with a directional exit sign.

ARTICLE 8 EXIT SIGNS FOR EXISTING BUILDINGS

§[C26-607.1] 27-388 Retroactive provisions. **–**
Except as otherwise provided, the provisions of this subchapter are not retroactive except that the provisions of this article and article nine of subchapter six of this chapter for certain existing office buildings are retroactive. Signs required by this article must be installed no later than March sixth, nineteen hundred sixty-nine. Where auxiliary systems for emergency exit lighting are to be provided, the installation must commence no later than May sixth, nineteen hundred sixty-nine.

§C26-60[7.2] 27-389 Designation of required means of egress. -

(a) Except for spaces classified in occupancy J-2 and J-3, the location of each required means of egress on every floor of every structure shall be clearly indicated by exit signs. Such signs shall be placed at an angle with the exit doorway if such placement shall be required for such signs to serve their purpose adequately. These signs shall be of an approved phosphorescent material, which after exposure to normal lighting conditions shall be capable of remaining visible in total darkness for a period of at least eight hours. They shall also be washable, non-toxic, non- radioactive, and if subjected to fire must be self-extinguishing when the flame is removed. Except for illuminated signs, these signs shall have a phosphorescent background and opaque text. Where means of egress were required to be indicated by an illuminated sign, there shall be either (1) an illuminated exit sign with the lettering thereon made of the approved phosphorescent material, or (2) a supplemental exit sign made of the approved phosphorescent material with an opaque text, and placed adjacent to or as close as possible to such illuminated sign.

(b) Except for spaces classified in occupancy groups J-2 and J-3, in long corridors, in open floor areas and in all other situations where the location of the means of egress may not be readily discernible or understood by the occupants, directional signs shall be provided and maintained to serve as guides from all portions of the floor or corridor. These signs shall be of an approved phosphorescent material which after exposure to normal lighting conditions shall be capable of remaining visible in total darkness for a period of at least eight hours. They shall also be washable, non-toxic, non-radioactive, and if subjected to fire must be self-extinguishing when the flame is removed. Except for illuminated signs these signs shall have a phosphorescent background and opaque text. Where a directional sign was required to be illuminated there shall be either (1) an illuminated directional sign with the lettering, indicator, symbol or other device thereon made of the aforesaid phosphorescent material, or (2) a supplemental directional sign with the same lettering, indicator, symbol or device as appears on the illuminated sign, but opaque, on a background made of the aforesaid phosphorescent material and placed adjacent to or as close as possible to such illuminated sign.

(c) Except where otherwise permitted by the provisions of any law, the lettering of exit signs shall be of letters of at least eight inches high.

(d) In those buildings not provided with artificial lighting, in those buildings which maintain one or more auxiliary systems for emergency exit lighting in the event of a public utility failure, and in those buildings for which the installation of one or more such auxiliary systems is commenced on or before August sixth, nineteen hundred sixty-nine, the signs need not be phosphorescent but shall otherwise conform to this section.

ARTICLE 9 STAIR AND ELEVATOR SIGNS

***§[C26-608.1] 27-390 Applicability. -**

This article is applicable to all buildings and existing buildings which have at least one elevator which is subject to periodic inspections pursuant to section 27-998, any existing office building occupied or arranged to be occupied for an occupant load of more than one hundred persons above or below the street level or more than a total of five hundred persons in the entire building.

****Local Law 96-1985, language juxtaposed per Ch. 907-1985.***

§[C26-608.2] 27-391 Signs at elevator landings.-

A sign shall be posted and maintained on every floor at the elevator landing. The sign shall read "IN CASE OF FIRE, USE STAIRS UNLESS OTHERWISE INSTRUCTED." The lettering shall be at least one-half inch block letters in red with white background or as otherwise approved by the commissioner. Such lettering shall be properly spaced to provide good legibility. The sign shall also contain a diagram showing the location where it is posted and the location and letter identification of the stairs on the floor. The sign shall be at least ten inches by twelve inches, located directly above a call button and securely attached to the wall or partition. The top of such sign shall not be above six feet from the floor level. The diagram on such sign may be omitted provided that signs containing such diagram are posted in conspicuous places on the respective floor. In such case, the sign at the elevator landing shall be at least two and one half inches by ten inches and the diagram signs shall be at least eight inches by twelve inches.

§[C26-608.3] 27-392 Floor numbering signs. -

A sign shall be posted and maintained within each stair enclosure on every floor, indicating the number of the floor. The numerals shall be of bold type and at least three inches high. The numerals and background shall be in contrasting colors. The sign shall be securely attached to the stair side of the door.

§[C26-608.4] 27-393 Stair and elevator identification signs. -

Each stair and each bank of elevators shall be identified by an alphabetic letter. A sign indicating the letter of identification for the elevator bank shall be posted and maintained at each elevator landing directly above or as part of the sign specified in section 27-391 of this article. The stair identification sign shall be posted and maintained on the occupancy side of the stair door. The letter on the sign shall be at least three inches high, of bold type and of contrasting color from the background. Such signs shall be securely attached.

§[C26-608.5] 27-394 Stair re-entry signs in office buildings.-

Signs shall be posted and maintained on the stair door at each floor in buildings classified in occupancy group E occupied or arranged to be occupied for an occupant

load of more than one hundred persons above or below the street level or more than a total of five hundred persons in the entire building indicating whether re-entry is provided into the building and the floor where such re-entry is provided. The lettering and numerals of the signs shall be at least one-half inch high of bold type. The lettering and background shall be contrasting colors and the signs shall be securely attached approximately five feet above the floor. The signs shall read as follows and may be either independent or combined with the corresponding sign required by sections 27-392 and 27-393 of this article.

(a) Where no re-entry is provided from the stairs to any floor, the sign shall read "NO RE-ENTRY FROM THIS STAIR" and such sign shall be on the occupancy side of the stair door at each floor. No re-entry sign shall be required on the stair side of the door.

(b) Where re-entry is provided to specified floors:

(1) On the stair side of the door at floors where re-entry is provided, the sign shall read "RE-ENTRY ON THIS FLOOR."

(2) Where no re-entry is provided on that floor, the sign on the stair side of the door shall read "NO RE-ENTRY, NEAREST RE-ENTRY ON THE..... AND..... FLOORS." The floor numbers of the nearest re-entry below and the nearest re-entry floor above shall be entered in the blank spaces.

§[C26-608.6] 27-395 Materials for signs. –
Signs required by this article shall be of metal or other durable material.

§[C26-608.7] 27-396 Signs in existing buildings. -

(a) Signs installed prior to the enactment of this article may be accepted by the commissioner, provided that such signs will adequately accomplish the intended purpose.

(b) In buildings existing prior to January eighteenth, nineteen hundred seventy-three, the commissioner may modify the requirements as to location of signs where compliance would cause practical difficulty or undue hardship.

(c) All existing buildings not already subject to the requirements of this article as of January eighteenth, nineteen hundred seventy-three shall comply with the requirements of this article on or before October first, nineteen hundred eighty-five.

ARTICLE 10 SIGNS IN SLEEPING ROOMS

§[C26-609.1] 27-396.1 Applicability. -
This article is applicable to buildings and existing buildings classified in occupancy group J-1.

§[C26-609.2] 27-396.2 Requirements. -
All buildings and existing buildings classified in occupancy group J-1 shall post and maintain a sign on the inside of every door opening onto a public corridor giving access to a sleeping room. The sign shall contain a diagram showing the location where it is posted and the location and letter identification of the exit stairs on the floor. The diagram shall indicate the number of doors opening onto the public corridor which must be passed to reach each exit stair. The sign shall be at least eight inches by ten inches, located on the inside of the door and securely attached thereto. The top of such sign shall not be more than six feet from the floor level. Such sign shall contain such additional information as the fire department may require.

§[C26-609.3] 27-396.3 Retroactive requirements. -
All existing buildings required to comply with the provisions of this article shall post the requisite signs on or before April first, nineteen hundred eighty-seven. Signs installed prior to such date may be accepted by the commissioner, provided that such signs adequately accomplish the intended purpose.

ARTICLE 11 EMERGENCY POWER

§[C26-610.1] 27-396.4 Requirements. -
Where required by this article or any other provision of this code, an emergency power system shall be provided. The emergency power system shall have a power source and fuel supply sufficient to operate the following equipment in accordance with rules and regulations promulgated by the department, where such equipment is required to be provided by this code:

(a) Fire pumps and booster pumps.
(b) At least three elevators at one time, with manual transfer to other elevators.
(c) Alarm systems.
(d) Communication systems.
(e) Emergency lighting, if battery packs are not provided.
(f) Ventilating systems used for smoke venting or control.
(g) Stair pressurization.

§[C26-610.2] 27-396.5 Registration. –
Emergency power generation equipment shall be registered with the department of environmental protection, bureau of air resources in accordance with the requirements of section 24-109 of title twenty-four of the administrative code.

§[C26-610.3] 27-396.6 Applicability. –
Emergency power systems meeting the requirements of this article shall be provided in the following buildings and building sections:

(a) High rise buildings and building sections classified in occupancy group C, E, G or H.
(b) Buildings and building sections classified in occupancy group E or G which do not exceed seventy-five feet in height but have a gross area of over fifteen thousand square feet per floor or a total gross area of one hundred thousand square feet or more.
(c) Spaces classified in occupancy group F-4 having an occupant load of three hundred or more persons.
(d) Buildings and building sections classified in occupancy group J-1.
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SUBCHAPTER 7
SPECIAL USES AND OCCUPANCIES

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ARTICLE 1 GENERAL

§[C26-700.1] 27-397 Scope. –
This subchapter shall apply only to those building types, uses, and occupancies specifically regulated herein, and the requirements of this subchapter shall be in addition to the general requirements of other subchapters of this code governing the size, location, fire protection, means of egress, construction, and service equipment of buildings. Chemical plants, packing plants, refineries, and similar special occupancies may be constructed in accordance with the practices and requirements of the particular industry, subject to the approval of the commissioner.

§[C26-700.2] 27-398 Standards. -
The provisions of reference standard RS-7 shall be a part of this subchapter.

§[C26-700.3] 27-399 Definitions. -
For definitions to be used in the interpretation of this subchapter, see subchapter two of this chapter.

ARTICLE 2 HIGH HAZARD OCCUPANCIES

§[C26-701.1] 27-400 Application. -
This section shall apply to the construction, alteration, and use of buildings or spaces for high hazard occupancies classified in occupancy group A under the provisions of subchapter three of this chapter.

§[C26-701.2] 27-401 Explosion hazard and unlisted occupancies.- Buildings or spaces of high hazard occupancies that involve explosion hazards or that are not specifically provided for in this code, shall be constructed to provide any necessary additional protection adequate for the hazard involved subject to approval by the commissioner.

§[C26-701.3] 27-402 Other requirements. -
The occupancy and use of high hazard buildings and spaces shall also be subject to the applicable requirements of chapter four of this title.

§[C26-701.4] 27-403 Location. -
High hazard occupancies shall not be located within, or attached to, a building occupied for any other use, unless separated from such other use by noncombustible construction having not less than a four hour fire resistance rating.

§[C26-701.5] 27-404 Sprinkler requirements. -
Sprinkler protection meeting the construction requirements of subchapter seventeen of this chapter shall be installed in all high hazard occupancies. Where the nature of the fire hazard is such that water is not effective as an extinguishing agent, the extinguishing agent to be used, shall be subject to the approval of the fire commissioner.

§[C26-701.6] 27-405 Ventilation of storage occupancies.-
Rooms or spaces used for the storage of flammable paints, solvents, anesthetic agents, fuel or other oils having a flash point under two hundred degrees Fahrenheit (Tag closed cup) or other inflammable vaporous materials shall be vented to the outdoors by gravity or mechanical means, with independent supply and exhaust openings or ducts. If ventilation is provided by gravity means, the total net free openable area of supply and exhaust openings shall be equal to at least one percent of the floor area of the room, equally divided between supply and exhaust. If ventilation is provided by mechanical means, the system shall be designed to provide at least two air changes per hour. Where there are explosion hazards, see section 27-401 of this article. The construction of all ventilating systems shall be in accordance with the requirements of subchapter thirteen of this chapter.

ARTICLE 3 OCCUPANCIES INVOLVING SPRAY OR DIP FINISHING

§[C26-702.1] 27-406 Application. -
This section shall apply to the construction, alteration, and use of buildings or spaces for the spraying, dipping, or drying of flammable paints, varnishes, and lacquers or other flammable materials, mixtures, or compounds used for painting, varnishing, staining, or similar purposes.

§[C26-702.2] 27-407 Classification. -
All occupancies involving spray painting, dipping, and drying with flammable materials shall be classified in high hazard occupancy group A.

§[C26-702.3] 27-408 Location of processes. -
Spraying, dipping, or drying processes shall be located in accordance with the requirements of 27-403 of article two of this subchapter.

§[C26-702.4]27-409 Construction. -
(a) Spray Booths. - Spray booths shall be substantially constructed of noncombustible materials. Panels of polished wired glass at least one-quarter inch thick, not exceeding seven hundred twenty square inches in area and not more than forty-eight inches in any linear dimension, may be used in the sides of spray booths**.**

(1) Spray booths shall be provided with a mechanical ventilating system meeting the requirements of section 27-410 of this article.

(2) Each spray booth having a frontal area larger than nine square feet shall have a noncombustible deflector or curtain at least six inches deep installed along the upper outer edge of the booth, over the opening, and shall be protected with an automatic sprinkler system. The interior of ducts shall be

protected with sprinklers complying with the construction requirements of subchapter seventeen of this chapter, installed not more than twelve feet apart in horizontal ducts, and the sprinklers shall be accessible through duct access doors.

(b) Dip tanks. - Dip tanks, including their supports and drainboards when provided, shall be of an approved type.

§[C26-702.5] 27-410 Ventilation. –

Spraying or dipping spaces shall be mechanically ventilated during spraying or dipping operations so that the velocity of air is at least one hundred linear feet per minute in the breathing zone of the operator, conveying air toward the exhaust hood. The ventilating system shall be of sufficient capacity to prevent the accumulation of mist or vapors. Air shall be admitted to the spraying or dipping spaces in an amount equal to the capacity of the fan or fans and in a manner that prevents short-circuiting the path of air in the working zone of such spaces. The exhaust fan control shall be interconnected with spray guns so that they cannot be operated without the ventilation system being in operation. Exhaust fans shall, in addition, be arranged to operate independently of spray guns. Ventilation equipment shall be kept in operation for a sufficient length of time after spraying or dipping operations to exhaust all vapors, fumes, or residues of spraying materials from the spray, space dip space,* or drying room.

(a) Ventilating ducts shall run directly to the outer air and be protected with a hood against the weather. Ventilating ducts shall be installed in accordance with the requirements of subchapter thirteen of this chapter, but shall not terminate within ten feet horizontally of any chimney outlet, or within twenty feet of any exit or any opening in an adjoining wall.

(b) Make-up air shall be supplied from a point outside the spraying or dipping space.

(c) The exhaust system from any spraying, dipping or drying space shall not be connected to any other ventilating system or be discharged into a chimney or flue used for the purpose of conveying gases of combustion.

(d) Exhaust fan blades shall be constructed of nonferrous material. Fan blades not coming in direct contact with spraying fumes need not comply with this requirement.

(e) Adequate access doors or panels, tightly fitted, shall be provided to permit inspection and cleaning of ducts.

**As enacted but probably intended to read "spray space, dip space".*

§[C26-702.6] 27-411 Drying equipment. -

Ovens and furnaces operated in connection with spray or dip finishing processes shall be of an approved type.

§[C26-702.7] 27-412 Sprinklers. -

Sprinkler protection shall be provided in all spraying, dipping, or drying spaces using flammable materials in accordance with the construction requirements of subchapter seventeen of this chapter.

ARTICLE 4 USES AND OCCUPANCIES INVOLVING RADIOACTIVE MATERIALS AND RADIATION-PRODUCING EQUIPMENT

§[C26-703.1] 27-413 Application. -

This section shall apply to the construction, alteration, and use of buildings or spaces for radioactive materials and radiation-producing equipment.

§[C26-703.2] 27-414 City, state and federal regulations. -

In addition to the requirements of this section, occupancies involving radioactive materials and radiation-producing equipment shall also comply with applicable requirements of the city health code, relating to radiological hazards, of part thirty-eight of the state industrial code relating to radiation protection, and of title ten of the code of federal regulations relating to atomic energy.

§[C26-703.3] 27-415 Laboratories. -

All laboratories required to register under the requirements of the New York City health code shall comply with the following:

(a) Construction- All buildings in which such laboratories occur shall be of noncombustible group I construction.

(b) Floors - All floors shall comply with the fire-resistance requirements for the class of construction, and provide the degree of radioactive resistance required by applicable city, state, and federal regulations. A finished material shall be applied to provide a continuous nonporous surface, which may be readily removed.

(c) Interior finish. - All insulation of acoustical treatments and interior partitions shall be of noncombustible material. Walls and ceilings shall have nonporous finishes of class A rating.

(d) Sprinkler protection. - Automatic sprinkler protection complying with the construction provisions of subchapter seventeen of this chapter shall be provided, and such protection shall be designed for the type of combustible materials wherever such material is used, and for the radioactive material that may be expected to melt, vaporize, or oxidize under fire conditions. Laboratory equipment susceptible to damage from water or other materials used in the sprinkler system may be shielded by hoods except when the equipment provides a source of combustion. Where sprinkler protection uses water, or small water-spray installations are used to fight small isolated fires, floors shall be provided with drainage so that water may be carried to retention tanks for later disposal as required by the New York city health code when contamination of the water is to be anticipated.

(e) Electrical controls. - Electrical controls and equipment shall be installed in accordance with the

requirements of the electrical code of the city of New York**.**

(f) Ventilation. - Exhaust air from areas in which radioactive materials are used or stored shall be exhausted to the outdoors in such manner as not to create a health hazard, and shall not be recirculated to other areas of the building. Air pressure in rooms in which radioactive materials are used or stored shall be maintained below the [*sic*] air pressure of adjoining rooms, so that there is no flow of radioactive gases or dusts into adjoining rooms.

(1) Ducts shall be of sheet steel of not less than No. 16 manufacturers' standard gage [*sic*] or of other equivalent noncombustible material having a melting point above eighteen hundred degrees Fahrenheit. Exhaust ducts within the building, on the discharge side of the fan, shall be welded airtight. Exhaust ducts within the building, on the suction side of the fan shall have laps in the direction of air flow with smoke-tight joints, and shall be subjected to a smoke test in accordance with the requirements for chimneys in subchapter fifteen of this chapter. Access hatches with tight-closing covers shall be provided for cleaning and for fire-fighting in the exhaust system ducts.

(2) Fume hoods shall be exhausted to the outdoors. Controls for hood fans shall be interlocked so that contaminated air cannot be drawn into any space from a hood where the exhaust fan is not in operation.

(3) Fan equipment other than the impeller and impeller housing shall be located outside the exhaust stream.

(4) When the degree of contamination of the exhaust stream exceeds the concentration limits permitted by the health code, the duct system shall be equipped with devices to decontaminate the air to a safe level before discharging to the outdoor air.

(g) Plumbing. - Drainage lines from sinks used for radioactive wastes shall be without traps, and shall lead to retention tanks when required by the provisions of the New York city health code.

§[C26-703.4] 27-416 Radiation machines.-Radiation machines or particle accelerators, linear accelerators, cyclotrons, synchrotons, betatrons, or bevatrons shall be located only in buildings of noncombustible group I construction; however, this requirement shall not apply to conventional medical, dental, research, or industrial x-ray machines of less than one million volt capacity.

§[C26-703.5] 27-417 Storage. -
Radioactive materials shall be stored in sealed containers. When required by the commissioner to avoid too concentrated an exposure within any one space, radioactive materials shall be stored in vaults designed in accordance with the radiation shielding or other requirements for the materials to be stored. When any materials are subject to melting, vaporization, or oxidation under fire conditions, the storage vaults shall be constructed of walls having a fire-resistance rating of at least four hours, and the vaults shall be equipped with automatic sprinklers complying with the construction requirements of subchapter seventeen of this chapter and shall be vented through devices to decontaminate the air to a safe level. Doors opening into storage vaults shall meet shielding requirements and have a fire-protection rating of not less than three hours. All bins, shelving, partitions, and pallets in storage vaults shall be of noncombustible materials. Other methods of storage permitted by the health department or the atomic energy commission, such as storage under water, may be used.

ARTICLE 5 BOILER AND FURNACE ROOMS

§[C26-704.1] 27-418 Application. -
This section shall apply to the construction, alteration, and use of buildings or spaces for the enclosure of boilers, furnaces, and similar fuel-burning, heat-producing equipment.

§[C26-704.2] 27-419 Enclosure. -
Boilers or furnaces hereafter installed in any building, other than replacement boilers and furnaces and boilers or furnaces used to heat one- or two-family dwellings, shall be enclosed and separated from the rest of the building by noncombustible construction having at least a one hour fire-resistance rating, except that:

(a) All boilers carrying more than fifteen psi pressure and having a rating in excess of ten horsepower, shall be located in a room or compartment separated from the rest of the building by noncombustible construction having at least a two hour fire-resistance rating.

(b) Boilers or furnaces located adjacent to, or within, automotive repair shops, public garages (group 1), or any occupancy classified in high hazard occupancy group A shall be located in separate buildings or, in rooms enclosed by noncombustible construction having at least a two hour fire-resistance rating. Entrance to such enclosed rooms shall be from the outdoors, or through an intervening vestibule constructed of materials having a two hour fire-resistance rating. The floor area of such vestibules shall be at least fifty square feet, but not more than seventy-five square feet. Ventilation shall be provided by a louver permanently open to the outdoor air having a net free area of one hundred forty-four square inches, located near the floor. Vestibule doors shall be one and one-half hour self-closing fire doors, with a six inch high sill provided at the door between the vestibule and the boiler room. Both doors shall swing in the direction of the boiler room.

(c) Boilers having a rated gross capacity of less than sixty-seven thousand btu per hour for generating steam shall not be required to be enclosed, except as provided in subdivision (b) of this section.

(d) Electric or fuel-fired space heaters need not be enclosed when they are approved for installation without enclosure and are installed in accordance

with the conditions of approval.

(e) Boilers and furnaces used in conjunction with commercial and industrial processes need not be enclosed, subject to the approval of the commissioner.

§[C26-704.3] 27-420 Location. -
Rooms containing boilers or furnaces, or other equipment of similar or greater explosion hazard, shall not be located within fifty feet of any place of assembly, unless separated from such place of assembly by construction complying with the provisions of section 27-401 of article two of this subchapter.

§[C26-704.4] 27-421 Clearances. -
Enclosing construction for boilers and furnaces shall meet the minimum clearance requirements prescribed in subchapter fourteen of this chapter.

§[C26-704.5] 27-422 Ash storage pits and bins.-
Ash storage pits and bins not located within a boiler room enclosure shall be constructed of two hour fire-resistive construction, except that roofs over ash pits may be constructed of noncombustible materials.

§[C26-704.6] 27-423 Exit requirements. -
In every room containing a boiler, furnace, or incinerator, the maximum travel distance from any point within the room to an exit shall not exceed fifty feet. When two or more exits are so required, only the main exit shall comply with the size and construction requirements of subchapter six of this chapter. The other exit or exits may be noncombustible ladders or stairs leading to exit openings not less than thirty-two inches by forty-eight inches.

§[C26-704.7] 27-424 Ventilation. -
Boiler and furnace rooms shall be ventilated in accordance with the provisions of section 27-807 of article nine of subchapter fourteen of this chapter.

ARTICLE 6 DRY CLEANING ESTABLISHMENTS

§[C26-705.1] 27-425 Application. –
This section shall apply to the construction, alteration, and use of buildings or spaces for dry cleaning or dry dyeing operations.

§[C26-705.2] 27-426 Classification. –
Dry cleaning and dry dyeing establishments shall be classified as follows:

(a) High hazard.- All establishments employing gasoline or other solvents having a flash point below 100^{O}F (tag. closed-cup).

(b) Moderate hazard. - All establishments employing solvents having a flash point between 100^{O}F and 138.2^{O}F (tag. closed-cup).

(c) Low hazard. - All establishments employing solvents with a flash point higher than 138.2^{O}F (tag. closed-cup).

§[C26-705.3] 27-427 Construction requirements. -

(a) High hazard. - The construction or installation of high hazard dry cleaning establishments shall be prohibited.

(b) Moderate hazard. - Moderate hazard dry cleaning establishments shall meet all of the requirements of this code applicable to industrial occupancy group D-1 buildings. The floor finish in moderate hazard dry cleaning establishments shall be noncombustible and impervious.

(c) Low hazard. -
Low hazard dry cleaning establishments shall meet all of the requirements of this code applicable to industrial occupancy group D-2 buildings.

(d) Equipment.- All dry cleaning machines and equipment shall be of an approved type.

§[C26-705.4] 27-428 Ventilation. –
Mechanical ventilation systems in moderate hazard plants shall be adequate to effect ten complete air changes per hour. Low hazard dry cleaning establishments shall be provided with mechanical ventilation adequate to effect four complete air changes per hour. Ventilating systems shall be arranged in such manner as to prevent solvent vapors from being admitted to the combustion area of any device requiring an open flame. Sufficient make-up air shall be introduced into all parts of the establishment to equal the air exhausted by the dry cleaning units, dryers, and exhaust ventilating system. Such air shall not contain any flammable vapors. Openings or stacks discharging solvent vapor-air mixtures to the outdoors shall be located in accordance with the provisions of subchapter thirteen of this chapter.

§[C26-705.5] 27-429 Coin-operated units-
In coin-operated establishments all dry cleaning units shall be installed in such a manner that the working or maintenance portion of the equipment shall be separated from the front of the units by solid noncombustible partitions. Coin-operated units shall be located within a diked area, all parts of which are impervious to the solvent used in such units. The diked section shall be a four inch curb above the floor. Provisions shall be made for the collection of solvent spillage into tanks of capacity sufficient to contain all of the solvent in the dry cleaning units served, and for return of the solvent to the cleaning units through a closed pipe system. Access doors to the space in back of the units shall be kept closed and locked. Solvent storage tanks and other sources of danger shall be so situated as to be inaccessible to the general public. In addition to the mechanical ventilation required for low hazard dry cleaning establishments, the following mechanical ventilation shall be provided:

(a) All dry cleaning units shall have facilities that create an inward flow of one hundred cubic feet of air per minute into the unit when the loading door is opened.

(b) Emergency ventilation of the space in back of the dry cleaning units shall be provided so that in emergencies a minimum of one air change per minute in the enclosed space will be provided. Emergency ventilation equipment shall be on a circuit that is separate from the general lighting and power circuits, and shall be taken off ahead of the main switchboard, or shall be connected to the emergency lighting power source when such source is provided.

(c) A scavenger duct system shall be provided in the space in back of the units at each unit, and shall be designed to pick up vapor surrounding the equipment near the floor and exhaust it at the rate of one hundred cubic feet per minute. Scavenger ducts shall not be less than five square inches in area.

§[C26-705.6] 27-430 Sprinklers. -
Automatic sprinkler protection complying with the construction provisions of subchapter seventeen of this chapter as required for occupancy group D-1, shall be provided for moderate hazard dry cleaning establishments. In addition, in moderate hazard establishments each dry cleaning unit shall be provided with automatic extinguishing equipment, such as a carbon dioxide system, or a steam jet of not less than three-quarters of an inch at a pressure of fifteen psi.

§[C26-705.7] 27-431 Separation of direct-fired dryers. -
In moderate hazard dry cleaning establishments, direct-fired dryers shall not be used. In low hazard dry cleaning establishments using nonflammable solvents only, direct fired dryers may be used, but such dryers shall not be located within twenty-five feet of a dry cleaning unit unless a noncombustible partition (which may be glazed), equipped with self-closing doors, is provided between the dry cleaning unit and the flame producing device. This partition may provide either complete or partial separation, provided that any partial separation shall be so arranged that the line of air travel around the partition from the cleaning units to the dryer is a minimum of twenty-five feet. Where a solid noncombustible partition is constructed extending to the ceiling and all portions of the enclosure are solid, except for self-closing access doors, and outdoor air for combustion and drying is supplied, the separation may be reduced to fifteen feet.

ARTICLE 7 HELIPORTS

§[C26-706.1] 27-432 Application. -
This section shall apply to the construction, alteration, and use of building roofs, or parts thereof, as heliports.

§[C26-706.2] 27-433 Classification. -
Heliports on building roofs shall be classified in industrial occupancy group D-1. They shall be separated from all other portions of the building by construction meeting the requirements of table 5-2 for fire divisions.

§[C26-706.3] 27-434 Construction. -
Heliports shall be permitted only on buildings classified in noncombustible construction group I. All heliport construction above the building roof shall be noncombustible. No openings in the roof shall be permitted in the landing area. Roof openings outside the landing area shall be protected from flammable liquid spillage by four inch curbs and shall be surrounded by metal railings at least three feet complying with the requirements of subchapter nine of this chapter. The landing area shall be enclosed with a substantial metal fence or skirt.

§[C26-706.4] 27-435 Limitations. -
No refueling facilities shall be provided, and no major aircraft repair or maintenance facilities shall be provided.

§[C26-706.5] 27-436 Exits. -
At least two means of egress, meeting the requirements of subchapter six of this chapter, shall be provided for each landing area. The exits shall be remote from each other and shall lead to the building stairways.

§[C26-706.6] 27-437 Fire protection. - Heliports shall be provided with fire-foam extinguishing equipment and fire alarm facilities meeting the following requirements:

(a) At least two hose stations housing approved foam generating equipment shall be provided remote from each other and located adjacent to outlets of the building standpipe system or other source of water supply. Hoses shall be provided with nozzles and related equipment for dispensing foam to all portions of the roof.

(b) The building standpipe system or other source of water supply shall be capable at all times of providing two hose streams simultaneously, each of which will afford foam application at a total water rate of at least sixty gallons per minute at a nozzle pressure [*sic*] of seventy-five psi for a period of ten minutes.

(c) A fire alarm system meeting the installation requirements of subchapter seventeen of this chapter shall be provided with a direct connection to the central station of an operating fire alarm company and with a local alarm to all heliport personnel.

ARTICLE 8 AUTOMOTIVE SERVICE STATIONS

§[C26-707.1] 27-438 Application. -
This section shall apply to the construction, alteration, and use of buildings or spaces as automotive service stations.

§[C26-707.2] 27-439 Classification. -
Automotive service stations shall be classified in business occupancy group E.

§[C26-707.3] *27-440 Gasoline and diesel oil motor vehicle fuel storage. - All volatile flammable liquids and diesel oil motor vehicle fuel storage tanks shall be installed below ground and vented to the open air except for such above ground [*sic*] installation as may be authorized by the rules of the fire commissioner. The installation and venting of storage tanks shall be in accordance with applications and plans approved by the commissioner and shall also meet the requirements of chapter four of this title and the rules of the fire commissioner. Except as otherwise provided for in chapter four of this title or the rules of the fire commissioner, underground tank installations shall comply with the following:

(a) The top of the tanks shall be at least two feet below finished grade and at least two feet below the level of any cellar or basement floor within ten feet of the tanks.

(b) Tanks shall be supported on foundations complying with subchapter eleven of this chapter.

(c) Tanks shall be located so that the forces from any building foundation and support loads are not transmitted to the tanks. The distance from any part of a tank to the nearest wall of any basement, pit or cellar, or from any property line that may be built upon, shall not be less than three feet.

(d) Tanks shall be covered with a structurally supported reinforced concrete slab at least eight inches thick extending at least twelve inches beyond the horizontal outlines of the tanks and placed over a coverage of suitable clean backfill material.

(e) All concrete shall have a minimum compressive strength of twenty-five hundred pounds per square inch at twenty-eight days.

Local Law 68-1999.

§[C26-707.4] 27-441 Location of pumps. -
No gasoline pumps or other mechanical equipment shall be installed so as to permit servicing of motor vehicles standing on a public street. Canopies and supports over pumps and service equipment shall be noncombustible, except that they may be of construction having a one hour fire resistance rating or of heavy timber construction meeting the requirements of section 27-623 of article seven of subchapter ten of this chapter when located more than twenty feet from interior lot lines and from any building or structure.

§[C26-707.5] 27-442 Heating equipment. -
Heat generating equipment for automotive service stations shall be enclosed in accordance with the requirements of section 27-419 of article five of this subchapter.

ARTICLE 9 AUTOMOTIVE REPAIR SHOPS

§[C26-708.1] 27-443 Application. -
This section shall apply to the construction, alteration, and use of buildings or spaces as automotive repair shops.

§[C26-708.2] 27-444 Classification. -
Automotive repair shops shall be classified in industrial occupancy group D-1.

§[C26-708.3] 27-445 Volatile flammables. -
All volatile flammables shall be stored and handled in accordance with the provisions of chapter four of this title.

§[C26-708.4] 27-446 Ventilation. -
All spaces used for the repair of motor vehicles shall be provided with mechanical ventilation adequate to provide four air changes per hour.

(a) Exhaust gases. -Where engines are to be run for test purposes or adjustments, provisions shall be made to collect the exhaust gases from each vehicle and to discharge such gases to the outer air by means of a positively induced draft. The discharge opening from such system shall be located as required by subchapter thirteen of this chapter.

(b) Pits. - All pits for inspection or repair shall have mechanical exhaust ventilation taken from near the bottom of the pits. Pit exhaust systems shall be adequate to provide at least four air changes per hour.

§[C26-708.5] 27-447 Sprinklers. -
Automatic sprinkler protection complying with the construction provisions of subchapter seventeen of this chapter shall be provided as required by occupancy group D-1.

§[C26-708.6] 27-448 Heating equipment. -
Heat generating equipment for automotive repair shops shall be enclosed in accordance with the requirements of section 27-419 of article five of this subchapter.

§[C26-708.7] 27-449 Pits. -
All pits shall be provided with two means of egress.

ARTICLE 10 PUBLIC GARAGES

§[C26-709.1] 27-450 Application. –
This section shall apply to the construction, alteration, and use of buildings or spaces as public garages. Any areas of such buildings in which gasoline, oil, and similar products are dispensed shall meet the requirements of article eight of this subchapter; any areas in which motor vehicles are repaired shall meet the requirements of article nine of this subchapter; and any areas in which any paint spraying is done shall meet the requirements of article three of this subchapter.

§[C26-709.2] 27-451 Classification. -
Public garages shall be classified according to their specific uses as follows:

(a) Group 1. - Buildings or spaces used for the parking of vehicles having fuel storage tanks in excess of twenty-six gallon capacity; or used for the parking of vehicles of any size, and in which mechanical repair, body work, or painting of vehicles is conducted, or in which gasoline, oil, or similar products are dispensed. Group 1 public garages shall be classified in storage occupancy group B-1.

(b) Group 2. - Buildings or spaces used exclusively for the parking of vehicles having fuel storage tanks of twenty-six gallon capacity or less, and in which no repair, body work or painting of vehicles is conducted, and in which no gasoline, oil, or similar products are dispensed. Group 2 public garages shall be classified in storage occupancy group B-2.

§[C26-709.3] 27-452 Construction. -

The street floor construction of group 1 public garages shall have at least a two hour fire-resistance rating. Where openings are provided in the floor of any public garage, they shall be protected by railings complying with the requirements of subchapters nine and ten of this chapter, with a curb or ramp at least six inches high above the floor. All floors shall be concrete or equivalent noncombustible material. Columns in parking areas shall comply with the provisions of section 27-559 of article three of subchapter nine of this chapter**.**

§[C26-709.4] 27-453 Group 1 public garages in buildings of other occupancy classification. -

No group 1 public garage shall be located within, or attached to, a building occupied for any other use, unless separated from such other use by construction meeting the requirements of table 5-2 for fire divisions. Elevators, stairways, and exit passageways connecting group 1 garages to other occupancies shall be accessible only through vestibules constructed of materials having a two hour fire-resistance rating. The floor area of such vestibules shall be at least fifty square feet but not more than seventy-five square feet. Ventilation shall be provided by a louver permanently open to the outdoor air having a net free area of one hundred forty-four square inches, located near the floor. Vestibule doors shall be one and one-half hour self-closing fire doors, with a six inch high sill provided at the door between the vestibule and the garage. Both doors shall swing in the direction of the elevators, stairways or exit passageways.

§[C26-709.5] 27-454 Roof storage of motor vehicles.-

Roofs of buildings shall not be used for the parking or storage of motor vehicles unless the building is of class 1-A, 1-B, or 1-C construction, or is an open parking structure. When the roof of a building is used for parking of motor vehicles, it shall be provided with a parapet wall or guard rail at least three feet six inches high, and with curbs or wheel guards of noncombustible materials of at [*sic*] least eight inches high. Such guards shall be substantially anchored to prevent any vehicle from striking the parapet wall or guard rail. Guard rails shall comply with the requirements for railings in subchapter nine of this chapter.

§[C26-709.6] 27-455 Sprinklers. -

(a) Automatic sprinkler protection complying with the construction provisions of article four of subchapter seventeen shall be provided as required for occupancy group B-1 or B-2 respectively, except that in existing buildings lawfully occupied as garages prior to December sixth, nineteen hundred sixty-eight, storage of forty-five thousand gallons or less of product having a flash point over one hundred degrees [*sic*] F (tag open cup) in the cargo space of tank truck or other vehicles approved for such storage by the fire commissioner, pending delivery, shall not be deemed to require sprinkler protection.

(b) Smoke detection or thermostatic alarm with central office connection. -A thermostatic alarm system or smoke detection system equipped with a central office connection complying with subchapter seventeen of this code, and reference standard RS 17-3 of the appendix to this code may be provided in lieu of the sprinkler system required under the preceding subdivision in existing buildings lawfully occupied as garages prior to December sixth, nineteen hundred sixty-eight, when the storage of fuel oils or other products having a flash point over one hundred degrees F (tag open cup) is twenty-two thousand five hundred gallons or more but not exceeding forty-five thousand gallons in the cargo space of tank trucks or other vehicles approved for such storage by the fire commissioner, pending delivery.

(c) Portable fire fighting appliances, as the fire commissioner may direct, shall be provided in existing buildings lawfully occupied as garages prior to December sixth, nineteen hundred sixty-eight, when the storage of fuel oils or other products, having a flash point over one hundred degrees F (tag open cup), in the cargo space of tank trucks or other vehicles approved for such storage by the fire commissioner, pending delivery, is less than twenty-two thousand five hundred gallons.

§[C26-709.7] 27-456 Ventilation. -

Public garages shall be ventilated in accordance with provisions of section 27-766 of article eight of subchapter twelve of this chapter and the following:

(a) Garage spaces above or below grade except as provided in subdivision (e) of this section shall be provided with mechanical ventilation according to one of or a combination of the following methods:

(1) Air exhaust at the rate of not less than one cfm per square foot of total floor area with properly designed means for air inflow.

(2) Air supply at the rate of not less than one cfm per square foot of total floor area with properly designed means for air outflow.

(3) Air exhaust or air supply at a rate sufficient to maintain an average concentration of carbon monoxide not to exceed one hundred parts per one million parts of air for periods longer than one hour and with a maximum concentration at any time not to exceed four hundred parts of carbon monoxide per one million parts of air. The concentration of carbon monoxide shall be determined by periodic tests taken between three and four feet from the floor by means of approved carbon monoxide detector tubes or other equivalent means. This method of mechanical ventilation may be used only if the overall design includes automatic ventilating fan control by means of approved carbon monoxide monitoring devices or by other approved means located so as to provide full protection for the occupancy.

(b) The provisions of section 27-766 of article eight of subchapter twelve of this chapter shall apply.

(c) Air supply shall be taken from an uncontaminated source. Exhaust outlets shall be located in accordance with the requirements of subchapter thirteen with one-half of them located six inches above floor level. In public garages where motor vehicles are parked by mechanical means, the ventilation requirements shall be one-half of those required above.

(d) No automotive service pits shall be installed in floors below the street floor. Pits shall have mechanical exhaust ventilation taken from near the bottom.

(e) Garage spaces above grade provided with natural ventilation having a free openable area of at least five percent of the total floor area of the space and having adjustable openings measuring at least six inches by four inches located within six inches of the floor and at most sixteen feet apart on all outside and court walls need not be provided with mechanical ventilation.

§[C26-709.8] 27-457 Exits. -
Public garages shall be provided with at least two exits from each tier of parking. One of the exits may be a ramp used by motor vehicles, when serving not more than one level below grade. All vertical exits shall have a minimum width of thirty-six inches and shall be enclosed in two hour fire-resistive construction, except as permitted by section 27-458 of article ten of subchapter seven of this chapter. No exit in a group 1 public garage shall have a path of travel through a fuel dispensing area. In group 2 public garages occurring [*sic*] in occupancy group J-2 buildings, overhead doors shall be of the automatic self-closing type.

(a) Travel distance. -No point in any public garage shall be more than one hundred feet from an exit, except that such distance may be increased to one hundred fifty feet when the garage is fully sprinklered.

(b)Repair and fuel spaces. - Spaces in group 1 public garages used for the repair of motor vehicles or the dispensing of fuel shall be provided with at least two exits, within the travel distance limitations of subdivision (a) of this section.

(c) Roof parking. - When the roof of a building is used for parking, interior vertical exits shall be enclosed in a bulkhead constructed as required by subchapter five of this chapter.

§[C26-709.9] 27-458 Ramps. -
Vehicular ramps in public garages shall not exceed a gradient of one in seven, and their surfaces shall be nonslip. A landing having a minimum length of twenty feet shall be provided at the discharge point at the street level, within the street line. Ramps serving as required exits shall be enclosed in construction having a two hour fire-resistance rating except that openings for motor vehicles at each parking tier may be protected by a water curtain consisting of deluge-type sprinkler heads supplying at least three gallons of water per minute per linear foot of opening.

§[C26-709.10] 27-459 Heating equipment. -
Heat generating equipment for public garages shall be enclosed in accordance with the requirements of section 27-419 of article five of subchapter seven of this chapter.

***§27-459.1 Parking spaces for people having physical disabilities.** -
Parking spaces for people having physical disabilities [*sic*] shall comply with the requirements of section 27-292.19 and reference standard RS 4-6.
Local Law 58-1987.

ARTICLE 11 OPEN PARKING STRUCTURES

§[C26-710.1] 27-460 Application. -
This section shall apply to the construction, alteration, and use of open parking structures. Open parking structures in buildings of other occupancy group classification shall not be permitted unless separated from other occupancies by construction having at least a two hour fire resistance rating.

§[C26-710.2] 27-461 Height and area limitations. -
The height of the top parking surface, and the area per parking tier, shall not exceed the limitations listed in table 7-1.

TABLE 7-1
HEIGHT AND AREA LIMITATION[S] ** OF OPEN PARKING STRUCTURES

Construction Classification	Maximum Allowable Height (ft.)	Allowable area per Parking Tier (sq. ft.)
1A	Unlimited	Unlimited
1B	Unlimited	Unlimited
1C	100	50,000
1D	100	50,000
1E	75	30,000

****Copy in brackets not enacted but probably intended.***

a. The area of an open parking structure having not more than two tiers above grade shall not be limited.

b. Open parking structures of construction class 1C, or 1D exceeding three parking levels may be sixty thousand square feet on any parking level provided they shall have at least fifty percent of their perimeter, fifty percent open.

c. Open parking structures of construction class 1C or 1D, exceeding three parking levels, may be one hundred thousand square feet on any parking level when fifty percent of the perimeter is fifty percent open, and may be one hundred twenty-five thousand square feet on any parking level when seventy-five percent of the perimeter is fifty percent open and may be one hundred fifty thousand square feet on any parking level when one hundred percent of the perimeter is fifty percent open in all aforementioned cases and shall have frontage space on at least two sides, and the horizontal distance on any level to an open exterior wall shall not exceed two hundred feet.

d. Open parking structures of construction class 1E exceeding three parking levels may be fifty thousand square feet on any parking level when fifty percent of the perimeter is fifty percent open and may be sixty-two thousand five hundred square feet on any parking level when seventy-five percent of the perimeter is fifty percent open and may be seventy-five thousand square feet on any parking level when one hundred percent of the perimeter is fifty percent open in all aforementioned cases and shall have frontage space on at least two sides, and the horizontal distance on any level to an open exterior wall shall not exceed two hundred feet.

e. The allowable areas specified in notes b, c and d above shall apply only to open parking structures used exclusively for the parking and storage of passenger vehicles accommodating not more than nine passengers but not including trailers, campers or similar vehicles.

§[C26-710.3] 27-462 Construction. -
All materials used in the construction of open parking structures shall be noncombustible. Columns in parking areas shall comply with the provisions of section 27-559 of article three of subchapter nine of this chapter. Interior finishes shall be class A. The minimum clear height of any parking tier shall be at least six feet six inches.

(a) Below grade.- Any portion of an open parking structure extending below grade shall comply with all of the requirements for public garages as provided in article ten of this subchapter.

§[C26-710.4] 27-463 Exterior walls. -
An exterior enclosure wall shall be required on any side of an open parking structure located within fifteen feet of an interior lot line. Such walls shall be noncombustible construction having at least a two hour fire-resistance rating.

§[C26-710.5] 27-464 Curbs and bumpers. -
Curbs or bumpers of noncombustible materials shall be provided at the perimeter of each parking tier. Such curbs or bumpers shall be at least eight inches high, substantially anchored, and so located that no part of any motor vehicle will contact a wall, partition or railing.

§[C26-710.6]27-465 Railings. -
Substantial railings or protective guards of noncombustible materials shall be provided at the perimeter of all parking tiers, except where exterior walls are provided, and around all interior floor openings. Such railings or guards shall be at least three feet six inches high, and shall be designed in accordance with the requirements of subchapter nine of this chapter.

§[C26-710.7] 27-466 Floor openings. -
A curb or ramp at least six inches high shall also be provided at all interior floor openings. All floors shall be pitched to provide adequate drainage.

§[C26-710.8] 27-467 Motor fuel pumps. -
Motor fuel pumps and facilities may be provided within an open parking structure as an accessory use. Such facilities shall comply with the requirements for the storage and handling of volatile flammables as provided in chapter four of this title. The area used for such purpose shall be located on the street floor. No pedestrian exit from any parking area shall have a path of travel through any fuel dispensing area.

§[C26-710.9] 27-468 Mechanical parking. -
Open parking structures in which motor vehicles are parked by mechanical means shall comply with the requirements for open parking structures, except that the requirements for means of egress may be modified as provided in section 27-469 of this article.

§[C26-710.10] 27-469 Exits. -

(a) Driver parking. - Open parking structures with driver parking shall be provided with at least two exits from each tier. One of the exits may be a ramp used by motor vehicles, when serving not more than one level below grade. Exit stairs shall have a minimum width of thirty-six inches and may be unenclosed, except that they shall be enclosed in noncombustible construction having at least a two hour fire-resistance rating if the first riser of the stair is more than thirty feet from one of the open exterior walls of the structure. No point on any tier of parking shall be more than one hundred feet from an exit.

(b) Mechanical parking. - Open parking structures with mechanical parking equipment shall be provided with at least one exit from each tier of parking. Such exit may be unenclosed, but shall have a minimum width of thirty-six inches. No point on any tier of parking shall be more than two hundred feet from an exit.

§[C26-710.11] 27-470 Ramps. -
Ramps used for the movement of motor vehicles and as required exits need not be enclosed when serving tiers above grade. Such ramps shall have a gradient not exceeding one in seven, with nonslip surfaces. A landing

having a minimum dimension of twenty feet shall be provided at the discharge point of all ramps at the street level, within the street line. Where a ramp is also used for the parking of motors vehicles, it shall be considered as a parking tier and may not serve as an exit for the occupants of the structure.

§[C26-710.12] 27-471 Elevators. -
Passenger elevators in open parking structures shall comply with the requirements of subchapter eighteen of this chapter, except that hoistways may be enclosed with noncombustible construction.

§[C26-710.13] 27-472 Standpipes.-
Open parking structures shall be provided with standpipe in accordance with the requirements of subchapter seventeen of this chapter.

***§27-472.1 Parking spaces for people having physical disabilities. -** Parking spaces for people having physical disabilities shall comply with the requirements of section 27-292.19 and reference standard RS 4-6.
****Local Law 58-1987.***

ARTICLE 12 PRIVATE GARAGES

§[C26-711.1] 27-473 Application. -
This section shall apply to the construction, alteration, and use of buildings or spaces as private garages.

§[C26-711.2] 27-474 Classification. -
Private garages shall be classified in storage occupancy group B-2.

§[C26-711.3] 27-475 Attached garages. -
Private garages attached to, or located above or below, a dwelling shall have walls, partitions, floors, and ceilings separating the garage from the dwelling, having a fire-resistance rating of at least one hour, except that such fire-resistive construction shall not be required between a dwelling and a carport when such carport is open on at least two sides. Any openings to the dwelling in required walls or partitions shall be protected with one and three-quarter inch solid core wood doors or equivalent

§[C26-711.4] 27-476 Connection by breezeway. -
When a breezeway connects a garage with a dwelling, such a breezeway shall be firestopped at all points of connection to the garage.

§[C26-711.5] 27-477 Floors. -
Garage floors shall be of concrete or equivalent noncombustible material that will not absorb flammable liquids. The sills of all door openings connecting a garage with a dwelling shall be raised at least four inches above the garage floor.

§[C26-711.6] 27-478 Ventilation. -
No air used for heating, cooling, or ventilation shall be circulated through garages to dwellings.

ARTICLE 13 OPEN PARKING LOTS

§[C26-712.1] 27-479 Application. -
This section shall apply to the construction, alteration, and use of open parking lots. Open parking lots shall be unobstructed and free of other uses. All driveways and open spaces used for the parking or storage of motor vehicles shall be surfaced with concrete asphalt, or equivalent durable, dustless material.

§[C26-712.2] 27-480 Curb cuts. -For the purpose of this section, a curb cut shall be defined as the total length of cut curb, including splays.

(a) For street frontages of one hundred feet or less, the amount of cut curb shall not exceed sixty percent of the frontage of the lot. No single curb cut shall exceed thirty feet in length, and there shall not be more than two curb cuts on any street frontage of one hundred feet or less. The minimum distance between two curb cuts shall be five feet.

(b) For additional street frontage over one hundred feet there may be an additional curb cut for each fifty feet of frontage.

(c) No curb cut shall commence within eight feet of a side lot line, except that on lots with street frontages of fifty feet or less, or on corner lots, the curb cut may commence two feet six inches from the side lot line.

(d) The distance of curb cuts from the intersection of street lines shall comply with the zoning resolution.

(e) Notwithstanding any of the above computations, no curb cut shall be less than ten feet.

§[C26-712.3] 27-481 Protection of adjoiningproperty. -
(a) Curbs and bumpers. - Open parking lots shall be completely separated from adjoining land by curbs or bumpers of concrete, masonry, steel, heavy timber, or other similar and equally substantial materials, securely anchored so as to stop motor vehicles. Curbs and bumpers shall be at least eight inches high and eight inches wide. The only openings permitted in required curbs and bumpers shall be for drainage and for motor vehicle entrances and exits, and at pedestrian entrances.
**** (b) Drainage.** – Where the surface paving of an open parking lot is non- porous, such lot shall be drained as required by subdivisions (b), (c) or (d) of section P110.2 of reference standard RS-16, as applicable. An asphaltic concrete surface, not to exceed one and one-half inches in thickness after compaction, shall be considered a porous surface provided such surface will pass an amount of water equivalent to one-half inch of rainfall per hour and provided such surface is underlaid by permeable soil, except that whenever an off-street

parking facility is constructed in connection with the construction of a new building, or whenever such parking facility falls within the definition of a substantial horizontal enlargement as set forth in subdivision (a) of section P110.2 of reference standard RS-16, all storm water falling or coming to rest on such parking facility shall be disposed of as provided in section P110.2 of reference standard RS-16.
*** Local Law 103-1989.*

§[C26-712.4] 27-482 Accessory uses and occupancies. - Parking lot offices, attendant shelters, storage facilities, and similar structures used in conjunction with open parking lots may be provided for accessory use, but shall comply with all of the provisions of this code applicable to the specific use or occupancy.

Motor vehicle fuel pumps. - Fuel pumps for the servicing of motor vehicles may be provided for accessory use in conjunction with open parking lots when complying with the requirements for the storage and handling of volatile flammables as provided in chapter four of this title. Fuel pumps shall be at least thirty feet from any parking space or interior lot line.

***§27-483 Parking spaces for people having physical disabilities. -** Parking spaces for people having physical disabilities shall comply with the requirements of section 27-292.19 and reference standard RS· 4-6.
Local Law 58-1987.

ARTICLE 15 SWIMMING POOLS

§[C26-714.1] 27-488 Application. -

This section shall apply to the construction, alteration and use of all indoor and outdoor pools intended for swimming or bathing purposes, except for pools that have less than eighteen inches in depth of water at every point. Pools above grade having a maximum water depth of forty-eight inches above grade and an area not exceeding five hundred square feet that are accessory to J-3 occupancies and that are privately used for noncommercial purposes shall be exempt from the provisions of this subchapter except that such pools shall comply with the requirements of section 27-493 of this article. All pools not exempt from the provisions of this subchapter shall comply with the applicable provisions of subchapter sixteen of this chapter. No building permit shall be required for pools exempted by this section.

Regardless of any contrary provision, any pool existing on January first, nineteen hundred sixty-nine, which is accessory to J-3 occupancies, and that is privately used for noncommercial purposes shall be exempt from the provisions of this subchapter except that such pools shall comply with the requirements of section 27-493 of this article.

§[C26-714.2] 27-489 Construction. -

Pools shall be constructed so as to be water tight and easily cleaned. They shall be built of nonabsorbent materials with smooth surfaces and shall be free of open cracks and open joints.

(a) Walls. - The walls of pools shall be vertical for at least the top two feet six inches below the normal water level. The junctions between the side walls and the bottom shall be coved. A pool overflow shall be provided meeting the requirements of reference standard RS-16.

(b) Bottom slopes.- The bottom of any portion of a pool where the water is less than five feet six inches deep shall have a maximum slope of one foot vertically for every fifteen feet horizontally.

(c) Ladders.- There shall be a ladder or steps with handrails at the deep end and at the shallow end of every pool. Ladders and steps shall have nonslip treads.

(d) Walkways.- Every pool shall have a walkway at least five feet wide around its entire perimeter. The walkway shall have a nonslip surface and be so constructed that it does not drain into the pool.

(e) Hand-holds. - Every pool shall be constructed so that either the overflow gutter, if provided, or the top of the side walls afford a continuous hand-hold for bathers.

(f) Markings.- Permanent markings showing the depth of the shallow end, break points, diving depth, and deep end shall be provided so as to be visible from both inside and outside the pool.

(g) Spectator area. - Areas exclusively intended for spectators shall meet the applicable requirements of subchapter eight of this chapter for places of assembly.

(h) Diving boards and towers.- Diving towers shall be rigidly constructed and permanently anchored. The depth of the water below a diving board shall be at least eight feet six inches for boards one meter (3.28 ft.) or less above the water. For diving boards more than one meter and not more than three meters (9 ft. 10 in.) above the water, the depth below the board shall be at least twelve feet. For diving boards or platforms more than three meters above the water, the depth below the board shall be at least sixteen feet. Indoor pools shall provide at least twelve feet overhead clearance above all diving boards.

§[C26-714.3] 27-490 Dressing facilities. -

Toilet rooms, shower rooms, and indoor dressing areas shall be constructed of nonabsorbent materials with smooth-finish walls and partitions. Floors shall have a nonslip surface impervious to moisture, free of cracks or open joints, and sloped to drains. The junctions between the side walls and floors shall be covered. Individual dressing rooms or cubicles within indoor dressing areas shall be excluded from the above requirements. Cabanas and dressing rooms that are not a part of any other occupancy shall also be excluded.

Toilets and Showers.- Toilets, lavatories, and showers, including piping, shall be provided in accordance with the requirements of subchapter sixteen of this chapter.

§[C26-714.4] 27-491 Ventilation and heating. -
Indoor pools, dressing rooms, toilets, and shower rooms shall be ventilated in accordance with the requirements of subchapter twelve of this chapter. Unless used only between May first and October thirty-first, such spaces shall be heated in accordance with the requirements of subchapter twelve of this chapter.

§[C26-714.5] 27-492 Water circulation, water treatment, and drainage. -
The supply, circulation, treatment, and drainage of water for pools shall meet the requirements of subchapter sixteen of this chapter and the health code.

§[C26-714.6] 27-493 Safety precautions. -
(a) No overhead electrical conductors shall be installed within fifteen feet of any swimming pool. All metal fences, enclosures, or railings that might become electrically charged as a result of contact with broken overhead conductors or from any other cause near, or adjacent to, a swimming pool shall be grounded in accordance with the provisions of lightning protection in the electrical code of the city of New York.
(b) Every outdoor swimming pool, fish pond, or other pool greater than eighteen inches deep at any point shall be protected by an enclosure, barrier or other means adequate to make such pool inaccessible to small children which including gates thereto shall be at least four feet high above the adjacent ground.
All gates shall be self-latching with latches located at least four feet high above the ground or otherwise made inaccessible to small children from the outside.

***§27-493.1 Facilities for people having disabilities. –**
Facilities for people having physical disabilities shall comply with the requirements of subarticle two of article two of subchapter four and of subchapter sixteen.
Local Law 58-1987.

ARTICLE 16 RADIO AND TELEVISION TOWERS

§[C26-715.1] 27-494 Application. –
This section shall apply to the construction, alteration, and use of radio and television towers on buildings. Radio and television receiving antennas more than twenty feet high above a roof shall be deemed to be such towers and shall be subject to the requirements of this section.

§[C26-715.2] 27-495 Location and access. -
Towers shall be so located, and equipped with ladders or other devices, as to be readily accessible for inspection purposes. No guy wire or other accessories shall cross or encroach upon any street or pass over any electric power line.

§[C26-715.3] 27-496 Construction. -
Towers located on the roofs of buildings shall be constructed of noncombustible materials. Isolated towers less than one hundred feet high and supported directly from the ground may, when located outside of the fire districts, be constructed of timber meeting the requirements of construction class II-A. All towers shall be grounded for lightning protection in accordance with the provisions of the electrical code of the city of New York.

§[C26-715.4] 27-497 Loads. -
Towers shall be designed in accordance with the load requirements of subchapter nine of this chapter**.**

ARTICLE 17 OUTDOOR SIGNS AND DISPLAY STRUCTURES

§[C26-716.1] 27-498 Application. -
This section shall apply to the construction, alteration, and use of all outdoor signs and display structures, together with their appurtenant and auxiliary devices.
(a) No sign may be hung or attached upon or on the outside of any building unless such work is performed by or under the supervision of a licensed sign hanger.
(b) No sign shall be erected until a permit therefor has been obtained from the commissioner in accordance with the provisions of article two of subchapter eleven of this chapter.

§[C26-716.2] 27-499 Obstructions. - No sign shall be erected so as to obstruct free ingress to, or egress from, a required door, window, stairs, or other required exits, or be placed so as to prevent free passage from one part of a roof to any other part. No sign shall be attached in any manner to a fire escape or exterior stair, or placed so as to interfere with any opening for light or ventilation required under the provisions of subchapter twelve of this chapter.

§[C26-716.3] 27-500 Ground signs. -
(a) Location. -No part of a ground sign shall be erected so as to project beyond the street line, except as specifically permitted by the provisions of subchapter four of this chapter.
(b) Material -Inside the fire districts, ground signs shall be constructed entirely of noncombustible materials, except as permitted in sections 27-506 and 27-507 of this article. Outside the fire districts, the structure of ground signs exceeding twenty-five hundred square feet in facing or display area shall be constructed of noncombustible materials, and the facing of such signs shall be noncombustible, except as permitted in sections 27-506 and 27-507 of this article. The bottom of the facing of all ground signs shall be at least thirty inches above the ground, which space may be filled with open lattice work or decorative trim.

(c) Support. -Ground signs shall be constructed and anchored to resist loads acting in any direction on the sign, in accordance with the provisions of subchapter nine of this chapter.

(1) Anchors and supports shall be designed for safe bearing loads on the soil and for an effective resistance to pullout amounting to a force twenty-five percent greater than the required resistance to overturning. Anchors and supports shall penetrate to a depth of at least four feet.

(2) Whenever anchors or supports consist of wood embedded in the soil, the wood shall be treated under pressure as specified in subchapter eleven of this chapter before erection. This requirement shall not apply to signs, which are not to remain in place for more than six months.

(3) Members furnishing structural support for signs shall be designed in accordance with the requirements of subchapter ten of this chapter, and shall be of adequate thickness to meet the corrosion conditions.

§[C26-716.4] 27-501 Wall signs. -

(a) Limitations. - Wall signs shall not extend beyond the top or ends of the wall surface on which they are placed unless meeting all the requirements of this code regulating roof signs, projecting signs, or ground signs as the case may be. Wall signs shall not project beyond street lines except as permitted in subchapter four of this chapter.

(b) Materials. -Inside the fire districts, wall signs shall be constructed entirely of noncombustible materials except as permitted in sections 27-506 and 27-507 of this article. Outside the fire districts, the framework of wall signs exceeding five hundred square feet in facing or display area shall be constructed of noncombustible materials, and the facing of such signs shall be noncombustible except as permitted in sections 27-506 and 27-507 of this article**.**

(c) Supports. -Wall signs shall be constructed and supported to resist loads acting in any direction on the sign in accordance with the provisions of subchapter nine of this chapter. Attachment shall be by means of metal anchors, bolts, or similar devices. Wooden blocks or anchorage with wood used in connection with screws or nails shall not be used, except in the case of wall signs attached to buildings having walls of wood.

(d) Fire department access. -Wall signs that are, or have been, erected to cover doors or windows required by this code for fire department access to existing buildings shall be provided with access panels as required by section 27-292 of article two of subchapter four of this chapter. Existing wall signs shall be altered or otherwise arranged to comply with this requirement on or before December sixth, nineteen hundred seventy.

§[C26-716.5] 27-502 Projecting signs. -

(a) Location. -Projecting signs, other than temporary signs, shall not be constructed on those streets and avenues listed in reference standard RS 7-2, and shall not be constructed to project beyond the street line except as permitted in subchapter four of this chapter**.**

(b) Limitations. -Projecting signs whose width when measured at a plane parallel to the building wall, does not exceed two feet may extend not more than five feet above the main roof level of the building to which they are attached; except that for buildings thirty-five feet high or less, such projecting signs may be erected to a maximum height of forty feet above grade but in no case to a height of more than fifteen feet above the main roof level.

(c) Materials.-All projecting signs shall be constructed of noncombustible materials except as permitted in sections 27-506 and 27-507 of this article.

(d) Supports. -Projecting signs shall be constructed and supported to resist loads acting in any direction on the sign in accordance with the provisions of subchapter nine of this chapter. Attachment shall be by means of metal anchors, bolts, supports, chains, wire ropes, rods, or other similar devices. No staples or nails shall be used to secure any projecting sign to any building. Turnbuckles or other equivalent means of adjustment shall be placed in all chains, wire ropes, or rods supporting or bracing projecting signs. All chains, wire ropes, or rods, and their attachments, shall be galvanized or of corrosion-resistant material, and no such supports shall be attached to an unbraced parapet wall.

§[C26-716.6] 27-503 Roof signs. -

(a) Location.-Roof signs shall be set back a minimum of six feet from the face of the walls of the building on which they are erected.

(b) Materials. -Inside the fire districts, roof signs shall be constructed entirely of noncombustible materials except as permitted in sections 27-506 and 27-507 of this article. Outside the fire districts, the framework of roof signs exceeding fifteen hundred square feet in facing or display area or having any part more than sixty-five feet above grade shall be constructed of noncombustible materials, and the facing of such signs shall be noncombustible, except as permitted in sections 27-506 and 27-507 of this article.

(c) Supports. -Roof signs shall be constructed and anchored to resist loads acting in any direction on the sign in accordance with the provisions of subchapter nine of this chapter. Such signs shall be so constructed as to leave a clear space of at least seven feet between the roof and the lowest part of the sign, and at least five feet between the vertical supports thereof.

§[C26-716.7] 27-504 Marquee signs. -

(a) Limitations. -No part of a marquee sign shall project above or below the marquee fascia, except that in the case of theaters licensed under the provisions of subchapters one and three of chapter two of title twenty of the administrative code, marquee signs may project not more than eight feet above nor more than one foot below the fascia, provided that the total height of such

signs does not exceed nine feet and the lowest part of such signs is at least ten feet above the ground or sidewalk level. Marquee signs may extend the full length of the marquee on all sides, but in no case shall they project beyond the ends of the marquee.

(b) Materials. -All marquee signs shall be constructed of noncombustible materials except as permitted in sections 27-506 and 27-507 of this article.

(c) Supports. -Construction and anchorage of marquee signs shall conform to the requirements for projecting signs under subdivision (d) of section 27-502 of this article.

§[C26-716.8] 27-505 Illuminated signs. -

General. -All ground signs, wall signs, roof signs, projecting signs, and marquee signs may be lighted by internal or external sources when complying with the following requirements:

(1)ILLUMINATION. - No sign shall be illuminated by other than electrical means. All wiring and accessory electrical equipment shall conform to the provisions of the electrical code of the city of New York.

(2) MATERIALS. -Every illuminated sign shall be constructed of noncombustible materials except as permitted in section 27-507 of this article.

(3)PERMISSIBLE PROJECTIONS.-Lighting reflectors may project beyond the top or face of all signs, provided that every part of such reflector is at least ten feet above the ground or sidewalk level. In no case shall such reflectors project beyond a vertical plane two feet inside the curb line. Reflectors shall be constructed, attached, and maintained so that they shall not be, or become, a hazard to the public.

§[C26-716.9] 27-506 Temporary signs. -

(a) Materials. -Temporary signs not more than five hundred square feet in area may be constructed of combustible materials. Temporary signs more than one hundred square feet in area shall be made of rigid materials with rigid frames. Temporary signs shall be securely attached to their supports, and shall be removed as soon as they are torn or damaged, but in no case later than thirty days after their erection.

(b) Limitations. -Temporary signs of combustible materials shall not extend more than one foot over, or into, a street, except that when permitted by the department of transportation, temporary banners or signs of combustible materials may be suspended from buildings or poles to extend across streets, and except that temporary signs of combustible materials constructed without a frame may be attached flat against, or suspended from the fascia of a canopy or marquee, provided that the lowest part of any such sign is at least nine feet above the ground or sidewalk level**.**

§[C26-716.10] 27-507 Use of combustible materials. -

(a) General. -In all signs required to be constructed of noncombustible materials under the provisions of this code, wood or other materials of combustible characteristics similar to wood may be used for moldings, cappings, trim, nailing blocks, letters, latticing, and other purely ornamental features.

(b) Slow-burning plastics. -Slow-burning plastics may be used in sign construction subject to the following conditions and requirements.

(1) If all parts of the sign other than the letters and decorations are made from noncombustible materials, the display surface or sign facing may be made of slow-burning plastic, or may be occupied or covered by letters and decorations made from, or faced with, slow-burning plastics not exceeding a total area calculated from the values given in tables 7-2 and 7-3.

TABLE 7-2 GROUND SIGNS AND WALL SIGNS (NONCOMBUSTIBLE MATERIALS)

Area of Facing or Display Surface	Area Occupied or Covered by Plastics
150 sq. ft. or less	100 per cent of display surface area
Over 150 sq. ft. but not over 2,000 sq. ft.	150 sq. ft. plus 50 per cent of the difference between 150 sq. ft. and the area of the display surface
Over 2,000 sq. ft.	Not over 1,050 sq. ft. without permission of the commissioner

TABLE 7-3 ROOF SIGNS, PROJECTING SIGNS, AND MARQUEE SIGNS (NONCOMBUSTIBLE MATERIALS)

Area of Facing or Display Surface	Area Occupied or Covered by Plastics
150 sq. ft. or less	100 per cent of display surface area
Over 150 sq. ft. but not over 2,000 sq. ft.	150 sq. ft. plus 25 per cent of the difference between 150 sq. ft. and the area of the display surface
Over 2,000 sq. ft.	Not more than 575 sq. ft. without permission of the commissioner

(2) If combustible materials are permitted in the framework, moldings, cappings, trim, nailing blocks, latticing or other parts of the sign, the display surface or sign facing may be occupied or covered by letters and decorations made from or faced with slow-burning plastics not exceeding a total area calculated from the values given in tables 7-4 and 7-5.

TABLE 7-4 GROUND SIGNS AND WALL SIGNS (COMBUSTIBLE MATERIALS)

Area of Facing or Display Surface	Area Occupied or Covered by Plastics
300 sq. ft. or less	50 per cent of display surface area
Over 300 sq. ft. but not over 2,000 sq. ft.	150 sq. ft. plus 25 per cent of the difference between 150 sq. ft. and the total area of the display surface
Over 2,000 sq. ft.	Not more than 575 sq. ft. without permission of the commissioner

TABLE 7-5
ROOF SIGNS (COMBUSTIBLE MATERIALS)

Area of Facing or Display Surface	Area Occupied or Covered by Plastics
1,000 sq. ft. or less	25 per cent of display surface area
Over 1,000 sq. ft. but not over 2,000 sq. ft.	250 sq. ft. plus 10 per cent of the difference between 1,000 sq. ft. and the total area of the display surface
Over 2,000 sq. ft.	Not more than 350 sq. ft. without permission of the commissioner

§[C26-716.11] 27-508 Maintenance and inspection.-
(a)Maintenance. -All signs, together with all supports, braces, guys, and anchors, shall be kept in good repair at all times, and when not adequately galvanized or constructed of corrosion-resistant materials, shall be painted periodically to prevent corrosion. It shall be the duty and responsibility of the owner or lessee of every sign to maintain the immediate premises occupied by the sign in a safe, clean, sanitary, and inoffensive condition and free and clear of all obnoxious substances.
(b)Annual inspection. - Every sign for which a permit is required shall be inspected at least once in every calendar year.

* ARTICLE 17-A

YOUTH PROTECTION AGAINST TOBACCO ADVERTISING AND PROMOTION ACT

§ 27-508.1 Short title. -
This article shall be known and may be cited as the "Youth Protection Against Tobacco Advertising and Promotion Act."

§ 27-508.2 Definitions. -
For the purposes of this article, the following terms shall be defined as follows:

a. "Amusement arcade" means any enclosed business establishment, open to the public, whose primary purpose is the operation of coin-operated amusement devices within the meaning of subchapter three of chapter two of title 20 of this code.

b. "Child day care center" means (I) any child care arrangement, public, private or parochial child care center, school-age child care program, day nursery school, kindergarten, play school or other similar school or service operating pursuant to authorization, license or permit of the city or state, (ii) any facility that provides child care services as defined in section four hundred ten-p of the New York State social services law, or (iii) any child day care center as defined in section three hundred ninety of the New York State social services law. The definition of "child day care center" applies whether or not care is given for compensation but does not include child day care centers located in private dwellings and multiple dwelling units.

c. "Cigarette" means any product which consists of (i) any roll of tobacco wrapped in paper or in any substance not containing tobacco or (ii) any roll of tobacco wrapped in any substance containing tobacco which, because of its appearance, the type of tobacco used in the filler, or its packaging and labeling is offered for use or purchase by consumers as a cigarette described in (i) of this subdivision.

d. "Cigarette tobacco" means any product that consists of loose tobacco and is intended for use by consumers in a cigarette.

e. "Multiple dwelling" means any building or structure that may lawfully be occupied as the residence or home of three or more families living independently of each other.

f. "Multiple dwelling unit" means any unit of residential accommodation in a multiple dwelling.

g. "Person" means any natural person, partnership, co-partnership, firm, company, corporation, limited liability corporation, agency as defined in section eleven-hundred fifty of the New York City charter, association, joint stock association or other legal entity.

h. "Playground" means any outdoor premises or grounds owned or lawfully operated by or on behalf of, the board of education, the department of parks and recreation, or any public, private or parochial school, any child day care center or any youth center, which contains any device, structure or implement, fixed or portable, used or intended to be used by persons under the age of eighteen for recreational or athletic purposes including, but not limited to, play equipment such as a sliding board swing, jungle gym, sandbox, climbing bar, wading pool, obstacle course, swimming pool, see-saw, baseball diamond, athletic field, or basketball court.

i. "Private dwelling" means any building or structure or portion thereof that may lawfully be occupied for residential purposes by not more than two families,

including the grounds of such building or structure.

j. "School building" means any building or structure or any portion thereof, owned, occupied by, or under the custody or control of any public, private or parochial institution and lawfully used for the primary purpose of providing educational instruction to students at or below the twelfth grade level.

k. "Smokeless tobacco" means any product that consists of cut, ground, powdered, or leaf tobacco that is intended to be placed by the consumer in an oral cavity.

l. "Tobacco product" means a cigarette, smokeless tobacco or cigarette tobacco.

m. "Tobacco product advertisement" means any written word, picture, logo, symbol, motto, selling message, poster, placard, sign, photograph, device, graphic display or visual image of any kind, recognizable color or pattern of colors, or any other indicia of product identification identical or similar to, or identifiable with, those used for any brand of tobacco product, or any combination thereof, the purpose or effect of which is to promote the use or sale of a tobacco product through such means as, but not limited to, the identification of a brand of a tobacco product, a trademark of a tobacco product or a trade name associated exclusively with a tobacco product.

n. "Tobacco product promotion" means (i) any item or service marketed, licensed, sold or distributed, whether indoors or outdoors, which is not a tobacco product but which bears the brand of a tobacco product, a trademark of a tobacco product or a trade name associated exclusively with a tobacco product, alone or in conjunction with any written word, picture, logo, symbol, motto, selling message, poster, placard, sign, photograph, device, graphic display or visual image of any kind, recognizable color or pattern of colors, or any other indicia of product identification identical or similar to, or identifiable with those used for any brand of a tobacco product, or (ii) any gift or item other than a tobacco product offered or caused to be offered to any person purchasing a tobacco product in consideration of the purchase thereof, or to any person in consideration of furnishing evidence, such as credits, proofs-of-purchase, or coupons, of such purchase; provided, however, that a tobacco product promotion shall not include any gift or item provided through the exchange or redemption through the mail of any such credits, proofs-of-purchase, coupons or other evidence of the purchase of a tobacco product.

o. "Youth center" means any building or structure or portion thereof, lawfully occupied by any person for the primary purpose of operating a trade school (including those conducting after-school, vocational, remedial, tutorial, educational assistance programs) or an indoor recreational center (including recreational, cultural, physical fitness, or sports programs) for persons under the age of eighteen years, and which has been certified as such to the department in accordance with the procedure to be set by the department. Such certification shall be accepted by the department but nothing in this subdivision shall prevent the commissioner from removing a certified youth center from consideration as a youth center if she or he determines it does not meet the criteria of a youth center.

§ 27-508.3 Tobacco product advertisement restriction. -

a. It shall be unlawful for any person to place, cause to be placed, to maintain or to cause to be maintained, a tobacco product advertisement within one thousand feet, in any direction, of any school building, playground, child day care center, amusement arcade or youth center, in any outdoor area including, but not limited to, billboards, roofs and sides of buildings, rolling shutters or gates, any enclosures into which rolling shutters or gates retract, water tanks and towers and free-standing signboards; provided, however, that any tobacco product advertisement on an awning projecting from the outside of a premises as of July 1, 1997 where tobacco products are sold or offered for sale may be retained until two years from the effective date of this law.

b. It shall be unlawful for any person to place, cause to be placed, to maintain, or cause to be maintained, a tobacco product advertisement in the interior of a building or structure which is within one thousand feet, in any direction, of any school building, playground, child day care center, amusement arcade or youth center, when such advertisement is within five feet of any exterior window or any door which is used for entry or egress by the public to the building or structure; provided, however, that tobacco product advertisements may be placed or maintained in the interior of any such premises where such advertisements are (I) parallel to the street and face inward, or (ii) affixed to a wall panel or similar fixture that is perpendicular to the street regardless of whether such advertisements are illuminated or not illuminated.

c. Nothing in this section shall prevent a person from placing, causing to be placed, maintaining, or causing to be maintained, a single sign, poster, placard or label no larger than six square feet and containing only black text, in any language, not exceeding eight inches in height on a white background stating "TOBACCO PRODUCTS SOLD HERE" or such words translated into any language, within ten feet of an entrance to the premises where tobacco products are sold or offered for sale.

d. Nothing in this section shall prevent a tobacco product manufacturer, distributor or retailer from placing, causing to be placed, maintaining, or causing to be maintained, its corporate or other business name on a building or structure, in any location, where such building or structure or a portion thereof is owned, operated or leased by such manufacturer, distributor or retailer and that building or structure is the principal place of business of such manufacturer, distributor or retailer in the city of New York; provided, however, that the corporate or other

business name of such manufacturer, distributor or retailer is registered or filed in the United States or such manufacturer, distributor or retailer is authorized to do business in any state, and the corporate or business name of such manufacturer, distributor or retailer does not include any brand name or trademark of a tobacco product, alone or in conjunction with any written word, picture, logo, symbol, motto, selling message, poster, placard, sign, photograph, device, graphic display or visual image of any kind, recognizable color or pattern of colors, or any other indicia of product identification identical or similar to, or identifiable with, those used for any brand of a tobacco product.

e. This section shall not apply to any tobacco product advertisement on a motor vehicle. Nothing in this subdivision shall be construed to authorize the placement of a tobacco product advertisement in a location where such placement is otherwise prohibited by the rules of the department of transportation or other applicable law.

§ 27-508.4 Non-compliant advertisements to be removed.- The owner, operator or lessee of any location or premises where a tobacco product advertisement is prohibited or restricted pursuant to the requirements of section 27-508.3 of this article shall have thirty days from the effective date of the local law that added this section to remove any non-compliant tobacco product advertisements.

§ 27-508.5 Sponsorship of and at events. - Nothing in this article shall prevent a tobacco products manufacturer, distributor, or retailer who sponsors, in whole or in part, any athletic, musical, artistic, or cultural event, or team or entry in a competition or exhibition in any location from displaying or causing to be displayed the corporate or other business name of such sponsor; provided, however, that the corporate or other business name of such sponsor is registered or filed in the United States or such sponsor is authorized to do business in any state, and the corporate or other business name of such sponsor does not include any brand name or trademark of a tobacco product, alone or in conjunction with any written word, picture, logo, symbol, motto, selling message, poster, placard, sign, photograph, device, graphic display or visual image of any kind, recognizable color or pattern of colors, or any other indicia of product identification identical or similar to, or identifiable with, those used for any brand of a tobacco product.

***Local Law 3-1998.*

***§27-508.6 Injunctive relief. -** Whenever any person has engaged in any act or practice which constitutes a violation of any provision of this article or of chapter thirteen of title eleven of this code, or of subchapter one of chapter two of title twenty of this code, or of any rule promulgated thereunder, the city may make application to a court of competent jurisdiction for an order enjoining such act or practice.

****Local Law 2-2000; Local Law 3-1998.*

§27-508.7 Penalties. - Notwithstanding the provisions of sections 26-122, 26-125 and 26-248 of this code, a violation of this article shall not subject any person to liability for a criminal offense.

***Local Law 10 -1998.*

ARTICLE 18 FENCES

§[C26-717.1] 27-509 Permitted heights. - In other than residence districts as established by the zoning resolution, fences may be erected throughout the city to a maximum height of ten feet. In residence districts, no fences, whether of masonry, steel, wood, or any other materials shall be erected to a height of more than six feet above the ground, except that fences used in conjunction with nonresidence buildings and public playgrounds, excluding buildings accessory to dwellings, may be erected to a height of fifteen feet. Higher fences may be permitted by the commissioner where required for the enclosure of public playgrounds, school yards, parks, and similar public facilities.

ARTICLE 19 TENTS AND AIR-SUPPORTED STRUCTURES

§[C26-718.1] 27-510 Location and height. - Tents or air-supported structures may be erected inside or outside of the fire districts provided they are not more than one story high above the ground, or above a roof that meets the requirements of subchapter five of this chapter for fire divisions.

§[C26-718.2] 27-511 Separation. - No tent or air-supported structure shall be erected closer than twenty feet to any interior lot line nor closer than thirty feet in any direction to an unprotected opening, required exterior stairway or corridor, or required exit door, on the same level or above the level of the tent or air-supported structure. A tent or air-supported structure may abut another building on the same lot if there are no unprotected openings or exits above or within thirty feet as above stipulated, if there is no door between them that is a required exit, and if the exterior wall separating them meets the requirements of subchapter five of this chapter for fire divisions.

Exceptions. - Requirements for separation from other buildings on the site shall be waived where a tent or air-supported structure is used for on-site temporary shelter for construction work, or incidental fabrication of construction elements to be used on the site of construction.

§[C26-718.3] 27-512 Fire protection. -
The ground enclosed by a tent or air-supported structure, and the ground for a distance of at least ten feet outside of same, shall be cleared and maintained clear of all combustible material or vegetation. No open flame of any kind shall be employed within the structure, or closer than twenty feet to any part of the enclosure fabric. Fire extinguishing facilities shall be provided in accordance with the requirements of chapter four of this title.

§[C26-718.4] 27-513 Exits. -
Notwithstanding any other requirements of subchapters six and eight of this chapter, travel distance to an exit from any point within a tent or air-supported structure shall not exceed seventy-five feet. Exit doors in air-supported structures shall close automatically against normal operational pressures. Opening force at the edge of such doors shall not exceed fifteen pounds, with the structure at operational pressure. Exit doors shall be located in frames so constructed that they will remain operative and support the weight of the structure in a state of total collapse.

§[C26-718.5] 27-514 Structural requirements. -
(a) Tents. - Tents shall be guyed, supported, and braced to withstand a wind pressure of ten pounds per square foot of projected area of the tent. The poles and their supporting guys, stays, stakes, fastenings, etc. shall be of sufficient strength and attached so as to resist wind pressure of twenty psf of projected area of the tent.

(b) Air-supported structures. -
(1) Air-supported structures shall be anchored to the ground or supporting structure by either ballast distributed, and adequate to resist the inflation lift load, the aerodynamic lift load, and the drag (shear) load due to wind impact. The latter factors shall be based on a wind velocity of at least seventy miles per hour, and an estimated stagnation of not less than 0.5q for structures on grade whose height is equal to, or less than, the width of the structure. For greater heights, or for elevated structures, increased anchorage shall be provided, justified by analytical and/or experimental data.

(2) The skin of the structure shall be of such strength, and the joints so constructed, as to provide a minimum dead load strip tensile strength at seventy degrees F of four times the seventy mph design load (inflation and aerodynamic loading). The joints shall provide a dead load strip tensile strength of one hundred sixty degrees F of twice the seventy mph design load (i.e., a factor of safety of four and two respectively). In addition, the material shall provide a trapezoidal tear strength of at least fifteen percent of the maximum design tensile load. Material and joint strengths shall be so certified by the manufacturer, justified by analytical and/or experimental data.

§[C26-718.6] 27-515 Flame resistance. -
(a) Tents. - All materials used for tents shall be treated to be flameproofed and shall remain flameproofed in accordance with chapter four of this title.

(b) Air-supported structures. All fabrics that have a base fabric weight of 6.4 oz. per square yard or less or that are used to enclose spaces classified in occupancy group C, E, F, G, H or J shall have an extinction time of not more than two seconds when tested under the small scale test method of reference standard RS 7-3. All other fabrics shall have a flame extinction time of not over one minute and/or a flame spread of not over one inch per minute when tested in accordance with the provisions of reference standard RS 7-4.

§[C26-718.7] 27-516 Pressurization system. -
Air-supported structures shall be inflated and shall remain inflated during all periods of occupancy to a minimum differential pressure of 0.88 in. and a maximum differential pressure of 1.50 in. of water. Ventilation flow per occupant, either through vents or anticipated leakage, shall comply with the requirements of subchapter twelve of this chapter.
Occupied spaces. - Where the net floor area per occupant is one hundred fifty square feet or less, the structure shall be provided with at least two blowers, each of which shall have adequate capacity to maintain the required inflation pressure. In addition, an auxiliary engine-generator set capable of powering one blower, or a supplementary blower powered by an internal combustion engine, either of which shall have the capacity to run continuously for four hours, shall be located outside the structure, shall be weather protected, and shall be arranged to automatically operate the blower within twenty seconds upon failure of the normal source. Heat shall be provided from a source outside the structure so arranged as to prevent the spread of fire to the structure. The temperature within the air-supported structure shall be maintained at the temperature required by subchapter twelve of this chapter, but not less than fifty degrees Fahrenheit during periods of snowfall.

§[C26-718.8] 27-517 Certificate of occupancy. -
Certificates of occupancy for tents or air-supported structures shall be issued for a period not exceeding one year, and such certificates may be renewed for one year periods thereafter if the tent or air-supported structure complies with all laws, rules and regulations in effect at the time of request for renewal.

ARTICLE 20 OCCUPANCIES INVOLVING STORAGE OF NITRIC ACID

§[C26-719.1] 27-518 Application.- This article shall apply to the construction, alteration and use of buildings or spaces wherein nitric acid is stored.

§[C26-719.2] 27-519 Location. -
Carboys containing nitric acid shall be stored in storage vaults.

§[C26-719.3] 27-520 Construction requirements. -

(a) Vaults shall be constructed of incombustible acid-resistant material with a fire resistance of at least one hour.

(b) Doors opening into such storage vaults shall be self-closing, noncombustible fire doors with a fire-protection rating of at least three-quarters of an hour.

(c) Vault floors shall be constructed of acid-resistant brick, concrete treated with sodium silicate or other acid-proof material and shall incorporate a dike constructed of the same material, whose height shall be adequate to contain the acid plus the neutralizing substance that would be necessary to neutralize said acid plus six inches.

(d) The floor shall be provided with a valved drain, which shall be connected to the drainage system in accordance with the requirements of subchapter sixteen of this chapter.

§[C26-719.4] 27-521 Ventilation. -

Mechanical ventilation systems for storage vaults shall be adequate to effect ten complete air changes per hr. Exhaust shall be taken from within twelve inches above the level of the top of the dike. The exhaust system shall be independent of exhaust systems serving other parts of the building and the openings to the outdoors shall be located in accordance with the provisions of subchapter thirteen of this chapter for system conveying vapors.

ARTICLE 21 ATRIUMS

§[C26-720.1] 27-521.1 Applicability. -

This article shall apply to the construction, alteration and use of atriums.

§[C26-720.2] 27-521.2 Classification.- An atrium shall be classified in occupancy group F-3.

§[C26-720.3] 27-521.3 Construction. -

(a) Atriums may be constructed only in buildings in noncombustible construction groups 1-A, 1-B and 1-C.

(b) An atrium shall be fully enclosed except that openings of any size into the two lowest levels of an atrium shall be permitted if such openings are provided with opening protectives having a fire-resistance rating of at least one and one-half hours or are provided with sprinklers no more than six feet apart.

(c) The minimum horizontal clear dimension of an atrium shall be forty feet, provided, however that this dimension can be reduced to twenty feet where sprinkler spacing on the occupied side adjacent to glass panels authorized by subdivision (d) of this section is no more than four feet or the minimum atrium area is twelve hundred square feet.

(d) Atrium enclosing walls shall be of at least two hour fire-resistant construction or of glass that is wired, laminated, or tempered and is provided with sprinklers on the occupied side spaced no more than six feet apart, except as otherwise permitted by subdivision (c) of this section.

§[C26-720.4] 27-521.4 Fire protection equipment. -

(a) Smoke detectors. - In all spaces opening onto an atrium, a smoke detecting system shall be installed in accordance with the requirements of reference standard RS 17-5E.

(b) Standpipes. - At least one standpipe outlet in addition to a riser or risers within required stairways, shall be installed in every atrium.

(c) Sprinklers. -

(1) Every story or mezzanine within an atrium that overhangs another story or mezzanine within fifty feet shall have the overhang sprinklered in accordance with section 27-956 of article four of subchapter seventeen of this chapter, except that atrium ceilings less than fifty feet above the atrium floor but more than thirty feet above the floor may alternatively be provided with smoke detectors, which shall be of the central supervisory type connected to an approved central station. Every room or space opening onto the atrium shall be sprinklered, no matter where located.

(2) Except as otherwise permitted by subdivision (c) of section 27-521.3 of this article, at glass panels permitted by subdivision (d) of such section, sprinklers on the occupied side at all levels shall be spaced six feet apart parallel to the glass and that distance away from the glass panels so as to insure complete glass wetting upon activation. No obstructions to such wetting capability shall be permitted.

(3) Every sprinkler system for an atrium shall be provided with sources of water supply in accordance with article four of subchapter seventeen of this chapter.

§[C26-720.5] 27-521.5 Means of egress. -

(a) No vertical exits shall discharge into an atrium at any level.

(b) Atrium corridors shall have a width equal to or greater than one hundred fifty per cent of that required by either table 6-1of subchapter six or table 8-1 of subchapter eight, as applicable.

(c) An unenclosed path of travel to a required exit shall be permitted, except that access to one of the required vertical exits shall be only through an enclosed passageway or corridor conforming to the requirements for exits of subchapter six.

§[C26-720.6] 27-521.6 Fire alarm and communication system. -

An interior fire alarm and communication system shall be installed in accordance with the requirements of reference standard RS 17-3.

§[C26-720.7] 27-521.7 Signs. -

Atriums shall be provided with all signs required by articles seven and nine of subchapter six of this chapter, regardless of the occupant load of the atrium.

§[C26-720.8] 27-521.8 Smoke control. -

(a) In all atriums there shall be provided a system of mechanical ventilation of sufficient capacity to exhaust at least six air changes per hour of the combined volumes of the atrium and all spaces with an open connection to the atrium, or 1 cfm/sq. ft. from all such spaces, whichever is greater, using either dedicated fan equipment or the building ventilation system arranged to shut down automatically, with manual override capability. Make-up air shall be supplied at the lowest level of an atrium at a rate equal to seventy-five percent of exhaust.

(b) All atriums shall have a gravity ventilation system equipped with remote manual controls to remove smoke if the mechanical exhaust system fails.

(c) A ventilation system serving an atrium shall not be interconnected with any other system serving another space.

(d) Ventilation systems supplying occupied spaces shall not be interconnected with the general atrium supply.

§[C26-720.9] 27-521.9 Emergency power. -
All atriums shall be provided with an emergency power system meeting the requirements of article eleven of subchapter six of this chapter.

ARTICLE 22 MALLS

§[C26-721.1] 27-521.10 Applicability. - This article shall apply to the construction, alteration and use of malls.

§[C26-721.2] 27-521.11 Classification. -
A mall shall be classified in occupancy group C.

§[C26-721.3] 27-521.12 Construction; General. -

(a) A mall may be constructed only in buildings in noncombustible construction groups I-A, I-B and I-C.

(b) The minimum horizontal clear dimension at any level in a mall shall be twenty feet.

(c) Where different tenancies have openings to a mall the tenancies shall be separated in accordance with section 27-341 of article five of subchapter five of this chapter.

(d) All openings between a mall and other spaces shall be provided with a noncombustible draft curtain that shall extend downward a minimum of twenty-four inches below the lowest ceiling adjacent to such draft curtain or shall meet the requirements of clause three of subparagraph d of paragraph three of subdivision (h) of section 27-370 of article five of subchapter six of this chapter relating to show windows.

§[C26-721.4] 27-521.13 Fire protection equipment. -

(a) Smoke detectors. - Smoke detectors meeting the specifications of section 27-981 of article six of subchapter seventeen shall be located at the ceiling and adjacent to each return air intake.

(b) Standpipes. - At least one standpipe outlet shall be installed in every mall.

(c) Sprinklers. - An automatic wet sprinkler system shall be installed in every mall.

(1) All spaces with openings between such spaces and a mall shall be fully sprinklered in accordance with subchapter seventeen of this chapter and reference standard RS 17-2 regardless of floor area or occupancy classification.

§[C26-721.5] 27-521.14 Egress. - The exits for a mall shall be of sufficient capacity to accommodate the aggregate occupant load of the mall and all spaces opening onto the mall.

§[C26-721.6] 27-521.15 Smoke control . -

(a) In all malls there shall be provided a system of mechanical ventilation of sufficient capacity to exhaust at least six air changes per hour of the combined volumes of the mall and all spaces with an open connection to the mall, or 1 cfm/sq. ft. from all such spaces, whichever is greater, using either dedicated fan equipment or the building ventilation system arranged to shut down automatically, with manual override capability. Make-up air shall be supplied at the lowest level of a mall at a rate equal to seventy-five per cent of exhaust.

(b) All malls shall have a gravity ventilation system equipped with remote manual controls to remove smoke if the mechanical exhaust system fails.

(c) A ventilation system serving a mall shall not be interconnected with any other system serving another space.

(d) Ventilation systems supplying occupied spaces shall not be interconnected with the general mall supply.

§[C26-721.7] 27-521.16 Signs. -
Malls shall be provided with all signs required by articles seven and nine of subchapter six of this chapter, regardless of occupant load of the mall.

SUBCHAPTER 8
PLACES OF ASSEMBLY

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8-1 Determination of Exit and Access Requirements

ARTICLE 1 GENERAL

*****§[C26-800.1] 27-522 Scope. -**

The provisions of this subchapter shall control the design and construction of places of assembly as defined in subchapter two of this chapter. For specific classifications of assembly occupancies, see article eight of subchapter three of this chapter. For place of assembly permit requirements, see section 27-525.1 of article two of this subchapter.

******Local Law 23-1990.***

§[C26-800.2] 27-523 Definitions. -

For definitions to be used in the interpretation of this subchapter, see subchapter two of this chapter.

§[C26-800.3] 27-524 Tents and air supported structures.-

Places of assembly enclosed by tents or air supported structures shall comply with the provisions of this subchapter regulating indoor places of assembly, and with the provisions of article nineteen of subchapter seven of this chapter.

ARTICLE 2 BASIC REQUIREMENTS

§[C26-801.1] 27-525 General. -

The provisions of this article shall apply to all places of assembly, in addition to the specific requirements of articles three through five of this subchapter for the several categories of places of assembly.

****§27-525.1 Place of assembly permit. -**

a. It shall be unlawful to use or occupy any building or premises or part thereof as a place of assembly unless and until a permit therefor shall have been issued by the department. The permit shall be for a term of one year.

b. The application for such permit and such permit shall be in a form prescribed by the commissioner.

c. The annual fee for a permit issued pursuant to this section shall be the amount provided for in paragraph seven of subdivision a of section 26-214 of the code. An application for such permit or renewal thereof shall be accompanied by the annual fee, except as otherwise provided in section 26-210 of the code.

d. The permit issued pursuant to this section shall be posted in a conspicuous place in the place of assembly, which is covered by such permit.

*****Local Law 23-1990.***

§[C26-801.2] 27-526 Location. –

No place of assembly shall be located within two hundred fifty feet of any occupancy containing explosive contents.

§[C26-801.3] 27-527 Posted capacity. -
Signs shall be posted in all assembly spaces, indicating the number of persons who may legally occupy the space. Signs shall not be required where seating is fixed in place in accordance with an approved seating plan and no provision is made for standee spaces. Such signs, where required, shall read as follows:

OCCUPANCY BY MORE THAN_____PERSONS
IS DANGEROUS AND UNLAWFUL

Public Assembly License No_____ Commissioner,
(where applicable) Dept. of Buildings, City of New

When a space is occupied for multiple purposes involving different occupant loads the sign shall read as follows:

OCCUPANCY BY MORE THAN
(number)____PERSONS AS____(type of occupancy)____
OR BY
(number)____PERSONS AS____(type of occupancy)____
OR BY
(number)____PERSONS AS____(type of occupancy)____
IS DANGEROUS AND UNLAWFUL
Public Assembly License No_____ Commissioner,
(where applicable) Dept. of Buildings, City of New York

Signs shall be at least twelve inches wide and sixteen inches high. The lettering shall be red on a white background. The letters shall be at least one inch high and the numerals at least one and one-quarter inches high. Signs shall be framed under a transparent protective cover, and permanently mounted in a location that is conspicuously visible to a person entering the space. Signs shall be lighted by artificial illumination at all times during occupancy to maintain at least five foot candles on the surface of the sign.

§[C26-801.4] 27-528 Approved seating plans. -
In every place of assembly providing seating, copies of approved seating plans and approved alternate seating plans shall be kept on the premises. The plans shall be readily available for inspection, and shall provide the following information:

(a) For assembly spaces:

(1) The location of each seat of each tier of seating, along with the number of occupants of each seating section.

(2) The location and number of standees for each standee area.

(3) The total number of occupants of each tier and of the assembly space.

(4) The location and classification of all exits.

(b) For safe areas:

(1) The furniture and equipment arrangement and location.

(2) The number of occupants to be accommodated.

(c) For stage areas:

(1) The maximum number of occupants, including audience seating on the stage.

(2) Any conditions limiting the use of the stage area.

(3) The location of all exits.

These plans shall not be smaller in size than required for one-eighth inch scale plans.

§[C26-801.5] 27-529 Enclosure and interior finish. - Places of assembly shall be separated from adjoining occupancies by construction meeting the requirements of table 5-1 or table 5-2, whichever may apply. The interior finish of places of assembly shall meet the requirements of table 5-4.

§[C26-801.6] 27-530 Means of egress. -
Places of assembly shall be provided with exit facilities meeting all of the requirements of this subchapter and all of the requirements of subchapter six of this chapter. A place of assembly located in a building classified in another occupancy group shall comply with the exit requirements of this subchapter, but may use the exit facilities of the building of which it is a part as a means of egress from the building.

§[C26-801.7] 27-531 Seating in assembly spaces. - All seating in assembly spaces shall conform to the following:

(a) Seating arrangements.- Except as otherwise provided in this subchapter, all seating shall be arranged in rows to provide for orderly egress.

(1) CHAIR SEATING. - Seating patterns employing individual chairs shall comply with the following:

a. Assembly spaces in which the net floor area, exclusive of stage area, is less than eight square feet per person shall be provided with chairs that are rigidly anchored to the construction or fixed in place by devices that prevent movement in any direction, except that not more than twelve movable chairs may be provided in a box or loge if such box or loge is separated from the main seating pattern by railings or other permanent construction and has an area of at least five square feet per chair.

b. In assembly spaces where the net floor area, exclusive of stage area, is between eight and twelve square feet per person, movable chairs may be used provided all chairs in a row between aisles are fastened or ganged together to preserve the integrity of the row. Not more than twelve chairs shall be used in any row between aisles.

c. In assembly spaces where net floor area, exclusive of stage area, is more than twelve square feet per person, individual movable chairs may be used.

Not more than twelve chairs shall be used in any row between aisles.

d. All chairs placed on stepped platforms less than four feet wide shall be anchored or fixed in place.

e. The minimum distance between centerlines of chairs in the same row shall be nineteen inches.

f. The spacing between the back of one chair in any row and any part of the chair in the row behind it, including arm blocks, when the seat is in the lift-up position for automatic operation or in the horizontal position for nonlift-up or nonautomatic operation, when measured horizontally between plumb lines, shall be at least twelve inches, and this spacing shall be increased for any of the following reasons:

1. Where a difference in floor level occurs between any two rows, the spacing shall be increased as follows:

Difference in Level (in.)	Increase in Space (in
6-10, plus any fraction of an inch..	1
11-16, plus any fraction of an inch	2
17-22, plus any fraction of an inch	3
23 and over…….	4

2. Where it is necessary from any location to pass more than seven chairs to reach the nearest aisle, spacing shall be increased one-quarter of an inch for each chair in excess of seven.

g. Not more than eight chairs shall be provided in any row of seating having access to only one aisle except as provided below for bleacher and platform seating.

[*] h. Performance viewing positions shall be provided for persons who use wheelchairs in accordance with the following schedule.

[*] ***Local Law 58-1987.***

Capacity of Assembly Space	Number of Viewing Positions
75 to 100…….	…….minimum 4
101 to 150……...	…….minimum 5
151 to 200……...	…….minimum 6
201 to 300……...	……7
301 to 400……...	……8
401 to 500……...	……9
501 to 1000……..……..	2 percent of total
Over 1000……...	20 plus 1 for each 100 over 1000

These positions shall be located so as not to interfere with egress from any row of seats and shall be reachable by means of ramps and/or elevators. Steps shall not be allowed in line of travel from the main approach entry to the designated locations. Size and placement of wheelchair locations, surfaces, access to performing area and listening systems where required, shall comply with the provisions of reference standard RS 4-6. These positions may be utilized by persons who do not use wheelchairs provided that the positions are delineated on the approved seating plans, the seating is readily removable and the positions are unsold one full working day before the performance.

(2) BLEACHER SEATING. - Fixed or folding bleachers shall comply with the following:

a. For the purpose of determining occupant load, individual seat space width shall be assumed to be eighteen inches. There shall be a space of at least fourteen and one-half inches between the back edge of each seat and the front edge of the seat immediately behind it when measured between plumb lines.

b. The width of footboards and seat boards shall be at least nine and one-half inches. Where wider seat boards are provided, the space between seats may be reduced by an amount equivalent to the increase in width.

c. Sections having not more than ten consecutive rows of seating shall not require aisles. Where there are more than ten consecutive rows, aisles shall be provided at the ends of seat rows, the minimum spacing between seat rows shall be increased to sixteen inches and the required space between seat rows shall be increased by one-quarter of an inch for each seat in excess of seven that it is necessary to pass to reach an aisle. Cross aisles shall be provided at the bottom of each section of seating.

d. Bleacher seating shall be constructed to comply with the requirements of subchapters nine and ten of this chapter

(3) PLATFORM SEATING. - Stepped platforms used for seating without chairs shall comply with the following:

a. For the purpose of determining occupant load, individual seat space width shall be assumed to be eighteen inches.

b. Platforms shall be at least twenty-eight inches deep from front to back.

c. Platform depth shall be increased one-quarter of an inch for each seat in excess of seven that it is necessary to pass to reach an aisle.

d. Aisles complying with section 27-532 of this article shall be provided when the height between levels of platform seating exceeds eight inches

(4) BENCH SEATING. - Bench or pew seating, with or without backs, may be used when complying with the applicable requirements for chair seating in [*sic*] paragraph one of this subdivision. For the purpose of determining occupant load, individual seat space width shall be assumed to be eighteen inches.

(5) TABLE AND CHAIR SEATING. - Tables and chairs shall be so arranged that the distance from any chair at any table by way of a path between tables and chairs is not greater than eighteen feet to an aisle

leading to an exit. The width of the path shall be at least eighteen inches, except that it may be reduced by one inch for each one foot that the distance to the aisle is less than eighteen feet but may not be reduced to less than twelve inches. Chairs, when placed with the front edge of the seat on a line with the edge of the table, shall not protrude into the path. Booths containing up to eight seats may be used, provided they open directly on an aisle.

(6) COUNTER SEATING. - Counters at which food or beverages are consumed shall be attached to the floor. Fixed or movable chairs or stools may be provided. The number of occupants shall be determined on the basis of one occupant for each eighteen inches of counter length. The width of aisles bordering counters shall be measured excluding a depth of eighteen inches for chair or stool spaces.

(7) STANDEE AREAS. - Standee areas may be permitted within assembly spaces provided each standee space has a minimum width of twenty-two inches and a minimum depth of twenty-one inches. Standee areas shall not encroach on the required exit facilities and shall be separated from the space to be left clear for passage by tape, ribbon or other easily broken material, supported by lightweight posts fixed in stationary sockets, so constructed and placed as to not constitute an obstruction in case of panic or emergency.

(8) PROTECTIVE GUARDS. - Protective guards shall be provided for seating and standee areas as follows:

a. A protective guard at least thirty inches high above the floor shall be provided along the fascia of all balconies, loges, and boxes, except that the guard shall be at least thirty-six inches high at the bottom of stepped aisles. When rails or other parts of such guards are designed with ledges more than two and one-half inches wide, the top surface of the ledges shall slope down toward the seating area at an angle of at least thirty degrees from the horizontal. The guards shall provide an unperforated curb or toeguard at least twelve inches high above the level of the floor of the balcony, loge, or box.

b. A protective guard at least thirty inches high above the floor shall be provided at cross aisles where fixed seat backs of any adjacent lower level do not project at least twenty-four inches above the cross aisle level.

c. A protective guard at least eighteen inches high above the floor shall be provided along the front edge of any stepped platform where fixed seat backs of the adjacent lower level do not project at least eighteen inches above the stepped platform level.

d. A protective guard at least twenty-six inches high above seat level shall be provided at the open ends of bleacher seating, extending from the front of the third row of seats to the back of the highest row of seats, and continuously along the rear of the seating, except where the seating is adjacent to a wall.

e. Guards shall be designed to meet the load requirements for railings in subchapter nine of this chapter.

§[C26-801.8] 27-532 Aisles and cross aisles. –

Assembly spaces shall be served by aisles, cross aisles, or other unobstructed floor areas providing access to exits, except as permitted for bleacher seating in paragraph two of subdivision (a) of section 27-531 of this article.

(a) The capacity of aisles and cross aisles shall be adequate to serve all persons for whom they provide a primary path of travel to an exit. (See section 27-533 of this article.)

(1) CAPACITY. - The capacity of aisles and cross aisles shall be as listed in table 8-1. The unit of exit width shall be twenty-two inches. Seats or other facilities shall not project into an aisle or cross aisle so as to reduce the width of the aisle or cross aisle more than one inch per unit of exit width.

(2) MINIMUM WIDTH. - Aisles and cross aisles shall have a minimum width of forty-four inches except that the width may be at least thirty-six inches under any one or more of the following conditions:

a. In any assembly space having a total of not more than three hundred occupants.

b. When not more than the number of persons permitted for one unit of exit width is served.

c. At the narrowest point when a tapered aisle is permitted under paragraph three of this subdivision.

d. When an aisle parallels and is alongside an enclosure wall or partition that is provided with exit doors spaced not more than sixteen feet on centers, provided such aisle serves only the rows of seats adjacent to it

(3) TAPERED AISLES. - Tapered aisles shall be used where egress is provided only at one end of the aisle, except that uniform aisles may be used when their width for the entire length will accommodate eighty percent of the total occupant load served by the aisle. Tapered aisles shall be widened gradually so that their width at the point of discharge provides for the entire occupant load of the aisle.

(4) UNIFORM AISLES. - Aisles of uniform width shall be used where egress is provided at both ends of an aisle by either cross aisles or exit doors. The width of uniform aisles shall not be less than required for sixty percent of the total occupant load served by the aisles.

(5) AISLE WIDTH AT OPENINGS. - When an aisle or cross aisle discharges directly into exit openings, a space shall be provided in front of such openings that is at least as wide as such openings and at least as deep as the width of the aisle or cross aisle.

(6) CROSS AISLES. - Cross aisles, at any point shall not be closer than twelve feet to a stage area

using scenery or scenic elements. Steppings shall not be permitted in cross aisles.

(7) AISLE GRADIENTS AND STEPPINGS. - The floors of aisles shall have a gradient of not more than one in eight. Where differences in levels require a greater gradient, steps shall be used, complying with the following:

a. When one riser only is used between levels of platforms, its height shall not exceed eight inches, and where more than one riser is used, none shall exceed seven and three-quarter inches.

b. No riser shall be less than four inches high.

c. No riser shall vary from the height of the riser immediately above or below except that risers that are separated by a tread of seventeen inches or more may vary up to one-quarter inch.

d. The width of treads of intermediate steps between platform levels shall be at least nine and one-half inches, but not more than ten and one-half inches, exclusive of nosings.

e. Treads at the level of platforms and seventeen inches or more in width may slope not more than one-quarter inch in twelve inches.

f. No steps shall be used to enter a row of seats from an aisle unless an unobstructed floor space of at least seven square feet is provided at the level of the aisle, between the aisle and the steps.

g. Each step in an aisle shall be marked along its nosing with a permanent contrasting color stripe, and shall be provided with a step light.

h. The line of risers of aisle steppings shall deviate no more than twenty degrees from a line perpendicular to the centerline of the aisle.

(8) STEPPED AISLE LANDINGS. - Stepped aisles shall be provided with landings at exit openings, and shall have a length equal to at least the width of the aisle and a slope of not more than one in twelve.

(9) LIGHTING. - Aisles and cross aisles shall be provided at all times with at least one-half foot candle of artificial illumination by electrical means.

(10) VOMITORIES. - Vomitories within assembly spaces shall comply with all of the requirements for aisles, and shall have a clear ceiling height of at least seven feet.

§[C26-801.9] 27-533 Travel distance. -

At least one exit opening shall be available from every attached seat or standee space in an assembly space, or from the most remote point in the space when movable seats are provided or, when no seats are provided, within the primary travel distance limitation listed in table 8-1. In addition, an alternate exit opening shall be available from every attached seat or standee space, or from the most remote point when attached seats are not provided within the secondary travel distance limitation listed in table 8-1. Such alternate exit openings may serve to satisfy the requirements for primary travel distance for other seats or locations. Exit openings satisfying the primary and secondary travel distance requirements for any one seat or location shall be separated from each other by a distance of at least twenty-five feet.

(a) Travel distance shall be the measured distance along centerlines of paths of travel to the centerline of the exit opening, as adjusted by penalties for multi-directional or stepped travel as provided below.

(1) No path of travel shall be permitted through rows of seating other than the first leg of travel from a seat to an aisle.

(2) The first thirty-five feet of a primary path of travel and a secondary path of travel may be common to each other except that this distance may be increased to fifty feet in F-2 places of assembly.

(3) Not more than three changes in direction of travel shall be permitted in the path of travel to an exit opening. A change in direction shall be deemed to occur when it is necessary to change direction by a forty-five degrees or greater angle, measured from the preceding line of travel, except that it shall not be considered as a change in direction when it is necessary in an aisle or cross aisle to travel in another direction not more than seven feet.

(4) Travel distance shall be the sum of the distances of all segments of travel to the exit, computed as follows:

Segment	Length
First leg of travel	Measured distance
Second leg of travel after first change in direction	Measured distance
Third leg of travel after second change in direction	1.25 times measured distance
Fourth leg of travel after third change in direction	1.40 times measured distance
Any leg of travel with four or more steps	1.25 times length of segment as computed above

§[C26-801.10] 27-534 Exit openings. -

Exit openings from assembly spaces shall comply with the following:

(a) Capacity. - The capacity of exit openings shall be listed as in table 8-1, based on the number of occupants for whom the opening satisfies the primary travel distance requirement.

(b) Width. - Exit openings shall be at least thirty-six inches wide for single doors and at least sixty-six inches but not more than eighty-eight inches wide for doors swinging in pairs, except that in assembly spaces having an occupant load of over three hundred persons, single door openings shall be at least forty-four inches wide.

TABLE 8-1 DETERMINATION OF EXIT AND ACCESS REQUIREMENTS

Occupancy Group Classification	Maximum Travel Distance Within Assembly Space (ft.) [a]		Capacity (number of persons per unit of width)					
				Doors or Openings				*
	Primary	Secondary	Aisle and Cross Aisle [e]	From Assembly Space	From Safe Area	Stairs and Escalators	Ramps, Corridors, Safe Areas, Exit Passageways
F-1a [b]	85	125	80	50	100	60	80
F-1b [c]	100	125	90	80	125	80	100
F2	175	250	400	400	500	320	425
F3	100 [d]	125 [d]	90	80	125	80	100
F4	85 [d]	125 [d]	80	50	100	60	80

Notes:

[a] See section 27-533. When an exit opening from an assembly space discharges into corridor that does not meet the requirements of this code for a safe area, the travel distance shall include the distance within the corridor to an exit.

[b] See paragraph four of subdivision (b) of section 27-546 for stages.

[c] See paragraph three of subdivision (b) of section 27-547 for stages.

[d] In place of assembly completely equipped with automatic sprinklers, this distance may be increased fifty percent.

[e] See section 27-532.

[*] ***Bracket not enacted but probably intended.***

(c) Classification. - Exit openings from assembly spaces shall be classified as follows:

Class. 1.- Exit openings that are used for normal entry to the assembly space, and that open directly to a safe area or to an open exterior space.

Class 2.-Exit openings that are not used for normal entry to the assembly space, and that open directly to a safe area or to an open exterior space.

Class 3.-Exit openings that open from the assembly space into corridors, exit passageways, or vertical exits.

(d) Distribution of classes. - The required exit capacity from F-2 places of assembly, and from all other assembly spaces in which the net floor area, exclusive of stage area, is twelve square feet or more per person may be provided by exit openings of any class. The required exit capacity from assembly spaces in which the net floor area, exclusive of stage area, is less than twelve square feet per person shall be distributed so that exit openings of each class are provided to comply with the following requirements:

1. For assembly spaces in which the mean floor level is not more than fifteen feet above or below the adjoining grade elevation, the exit capacity shall be distributed as follows:

Class 1- not less than forty percent

Class 2- not more than sixty percent

Class 3- not more than forty percent

2. For assembly spaces in which the mean floor level is more than fifteen feet, but not more than thirty feet, above or below the adjoining grade elevation, the exit capacity shall be distributed as follows:

Class 1 - not less than sixty percent

Class 3 - not more than forty percent

3. For assembly spaces in which the mean floor level is more than thirty feet above or below the adjoining grade elevation, the exit capacity shall be distributed as follows:

Class 1- not less than one hundred percent

(e) Location. - No exit opening shall be closer than twelve feet to any part of a stage using scenery or scenic elements. All exit openings shall be clearly identifiable and shall not be disguised as part of a wall or covered in any way to obscure them from view. Where, because of the configuration of the assembly space enclosure, an exit opening is not visible from all seats using it as a means of egress, directional exit signs shall be placed on the enclosure alongside the exit opening to indicate its location. These signs shall be in addition to those required over the exit opening.

(f) Locking. - No exit door shall be locked so as to prevent egress from an assembly space while it is occupied.

§[C26-801.11] 27-535 Safe areas. –
Safe areas shall comply with the following:

(a) When provided to serve class one or class two exit openings safe areas shall be separated from assembly spaces by noncombustible construction having a two hour fire-resistance rating, and shall serve as transition areas in the line and direction of exit travel. They shall serve for normal entry to the assembly space and may be used as corridors, lobbies, or lounges. No room or space classified in occupancy group A, B-1, D-1, or D-2 shall open upon a safe area. Safe areas shall be at a level not more than six feet above or below the level at which egress is made from the assembly space, except that a separate safe area shall not be required for any assembly space having an occupant load of less than one hundred fifty persons and which is served by a safe area of another assembly space, when such safe area is in the direction of egress. Ventilating systems for safe areas shall not be connected to systems serving any other spaces, unless separated from such systems by fire dampers actuated by smoke detectors meeting the construction requirements of subchapter thirteen of this chapter.

(1) COLLECTING SAFE AREAS. -
Places of assembly having more than one assembly space may have a collecting safe area that receives the occupant load discharged into it by other safe areas. Collecting safe areas shall be located within six feet above or below the assembly space nearest to grade.

(2) OCCUPANT LOAD. - The occupant load of a safe area shall be the aggregate occupant load of all exit openings discharging directly into it. The occupant load of a collecting safe area shall be the aggregate occupant load of all exit openings discharging directly into it, plus fifty percent of the occupant load of other safe areas discharging into it.

(3) DIMENSIONS.- Except as provided in subdivision four of this section, the clear unobstructed floor area of each safe area shall be sufficient to accommodate the total occupant load of the safe area on the basis of two square feet per person, not including space occupied by furniture or equipment. The minimum dimension of such unobstructed space shall be eight feet. The width of the unobstructed space shall be measured at right angles to the direction of travel to an exit and shall not be less than required for the occupant load, on the basis of the exit capacity listed in table 8-1. The height of safe areas shall be at least eight feet at all points.

(4) SAFE AREAS NEAR GRADE. - When a safe area provides egress to an open exterior space, either directly or through a vestibule, the safe area need not provide the floor area required by subdivision three of this section when the level of discharge from the safe area to the open exterior space is not more than four feet above or below the grade of the open exterior space.

(5) RAMPS AND STEPS. - Ramps in safe areas shall have a gradient of not more than one in twelve, except that when not exceeding six feet in length, the gradient may be not greater than one in ten. Steps in safe areas shall comply with the following requirements:

a. No riser shall be less than six inches nor more than seven and one-half inches high.

b. No riser shall vary in height from the riser immediately above or below it.

c. Treads in flights of steps shall be at least ten and one-half inches wide exclusive of nosing, and, except as provided in paragraph d of this subdivision, the sum of two risers plus the width of one tread shall be at least twenty-four inches but not more than twenty-five and one-half inches.

d. No change in levels shall have less than three risers, except that where the intervening tread is between twenty-eight inches and thirty-six inches, two risers may be used when the edge of each tread is marked by a contrasting color stripe.

e. Where exit openings from an assembly space are above or below the level of the safe area, a platform shall be provided at the same level as that of the exit opening. The platform shall be at least one foot wider on each side than the exit opening, and shall extend a minimum of six feet in the direction of exit travel. The sides of such platforms, and of steps or ramps leading from them, shall be protected by guards at least three feet high.

(6) EXITS FROM SAFE AREAS. - The capacity of exits from safe areas shall be as listed in table 8-1.

Exit openings from safe areas shall discharge into exit types as provided in subchapter six of this chapter.

(7) DOOR HARDWARE. - Doors from safe areas or from exits from safe areas opening directly to the outdoors and furnished with locks shall be equipped with fire exit bolts complying with the requirements of paragraph two of subdivision (k) of section 27-371 of subchapter six of this chapter.

§[C26-801.12] 27-536 Corridors. -
Corridors shall comply with all of the requirements of subchapter six of this chapter, except as modified below:

(a) Capacity. - The capacity of corridors shall be as listed in table 8-1.

(b) Changes in level. - Changes in level requiring less than three risers in a corridor shall be by a ramp having a slope not greater than one in ten.

§[C26-801.13] 27-537 Exit passageways. –
Exit passageways shall comply with all of the requirements of subchapter six of this chapter, except as modified below:

(a) Capacity. - The capacity of exit passageways shall be as listed in table 8-1.

(b) Changes in level. - Changes in level requiring less than three risers in an exit passageway shall be by a ramp having a slope not greater than one in ten.

§[C26-801.14] 27-538 Vertical exits. –
Stairs, escalators and ramps shall comply with all of the requirements of subchapter six of this chapter, except as modified below**:**

(a) Capacity. - The capacity of stairs, escalators or ramps shall be as listed in table 8-1.

(b) Width. - The minimum width of stairs shall be at least forty-four inches, except that where the total occupant load is not more than permitted for one unit of exit width, the minimum width may be thirty-six inches.

(c) Unenclosed vertical exits. -
Vertical exits leading directly from one safe area to another, or leading from a safe area directly to an open exterior space, need not be enclosed.

(d) Ramp slope. - Ramps serving as vertical exits shall not have a slope greater than one in ten.

§[C26-801.15] 27-539 Open exterior spaces. -

(a) Capacity. - Open exterior spaces shall be adequate in width and area to accommodate the accumulated occupant load of all exits discharging into them on the basis of two square feet per person.

(b) Minimum dimensions. - The minimum dimensions of open exterior spaces shall be twenty feet, except that when the principal entrance to the place of assembly is from an open exterior space, the minimum dimension of this space shall be thirty feet. No open exterior space shall have less than four hundred square feet of floor area, and floor area shall be measured exclusive of the following:

1. The area immediately outside any exit door from the place of assembly for a distance perpendicular to the exit doors of ten feet for the full width of the exit opening.
2. The area of steps, platforms, stairs, or ramps within or leading to or from the space.
3. The area of obstructions such as shrubs, trees, fixed furniture, signs, sculptures, pools, and similar obstructions to occupancy or exit travel.

(c) Above or below grade. - When an open exterior space is more than fifteen feet above or below the grade of the street or public space to which it discharges, its required area shall be increased by one-third.

(d) Egress from open exterior spaces. -
Exterior exit passageways, ramps, or steps leading from open exterior spaces shall be not less in width than required for the occupant load of all exits discharging into the open exterior space. The width of such exit passageways shall be based on the capacities listed in table 8-1, but in no case less than ten feet. Ramps and steps shall comply with the requirements of paragraph (e) of subdivision five of section 27-535 of this article.

§[C26-801.16] 27-540 Exit lighting. - In addition to the requirements of subchapter six of this chapter, lighting shall be provided in the following areas:

(a) Safe areas. - Safe areas shall be artificially lighted by electrical means at all times during occupancy of a place of assembly so as to provide illumination of at least five foot candles at the level of the floor and on the surface of all stairs, steps, ramps, and escalators within the safe area.

(b) Open exterior spaces. -Yards or courts which serve as open exterior spaces shall be artificially lighted by electrical means at all times between sunset and sunrise during occupancy of a place of assembly so as to provide illumination of at least five foot candles at the level of the floor over at least the required area.

§[C26-801.17] 27-541 Exit signs. –
Signs meeting the requirements of subchapter six of this chapter and subdivision (e) of section 27-534 of this article shall be provided in all assembly spaces to indicate the location of exits and, where necessary, the direction to the exits. All exit or directional signs shall be placed so that they are clearly visible from all parts of the assembly spaces, and the bottom of all signs shall be at least seven feet above floor level. Signs shall be of the internally lighted type in all assembly spaces where the general illumination is reduced to less than five foot candles during a performance or during occupancy. Signs shall be lighted at all times during occupancy.

§[C26-801.18] 27-542 Emergency lighting. -
All assembly spaces shall be provided with emergency lighting facilities sufficient to provide at least five foot candles of illumination at the floor level. Such lighting shall be on circuits that are separate from the general lighting and power circuits, either taken off ahead of the main switch or connected to a separate emergency lighting power source, and be arranged to operate automatically in the event of failure of the normal lighting system. The provisions of this section shall apply retroactively to all existing places of assembly that are or would be classified in occupancy groups F-3 and F-4 or are changed to such classification under this code, in accordance with the following schedule and specifications:

1. Cabarets, dance halls, night clubs, and taverns having an occupant load exceeding one hundred fifty persons shall complete the installation required by this section on or before April twelfth, nineteen hundred seventy-nine.
2. Cabarets, dance halls, night clubs, and taverns having an occupant load of one hundred fifty persons or less shall complete such installation on or before July twelfth, nineteen hundred seventy-nine.
3. Spaces occupied exclusively as restaurants shall complete such installation on or before October twelfth, nineteen hundred seventy-nine.

4. All other spaces in occupancy groups F-3 and F-4 shall complete such installation on or before January twelfth, nineteen hundred eighty.

5. The wiring shall conform with the electrical code of the city of New York, and have the same protection as specified for wiring in reference standard RS 17-3, RS 17-3A or 17-3B.

6. Storage battery equipment may be used as the sole source of energy provided it conforms with the provisions of section four of reference standard RS 17-3 or consists of two battery packs listed by an acceptable testing laboratory or conforms with nationally accepted standards for such source of emergency energy.

§[C26-801.19] 27-543 Light projection sources. –
Motion picture projection and other light projection sources shall comply with the following:

(a) Film. - The projection, use or storage of film having a nitrocellulose base (commonly known as nitrate film) shall not be permitted except under conditions specified in special permits when issued by the fire department. Safety film meeting the specifications and test standards of reference standard RS 8-1 may be projected, used or stored.

(b) Projection machines. - Projection machines shall meet the requirements of the electrical code of the city of New York. The lamp housing of projection machines using carbon-arc or other light sources that emit gaseous discharge shall be equipped with, or connected to a mechanical ventilation system of adequate capacity to exhaust the products of combustion through ducts directly to the outdoors. Such duct systems shall comply with the requirements of subchapter thirteen of this chapter. When more than one projection machine or other facility employing a carbon-arc or similar light source is used, all may be vented by the same duct system if the capacity is adequate for all facilities so connected.

(c) Other light source facilities. - All devices, such as spotlights, that employ a carbon-arc or other light source that emits gaseous discharge shall be vented directly as required in subdivision (b) of this section, unless the space in which such devices are located is mechanically ventilated and provides at least two thousand cubic feet of room volume for each device.

(d) Light or projection rooms or booths. -
When enclosed, rooms or booths used for the projection of motion picture film or the manipulating of lights shall be built of noncombustible materials, and shall provide a clear working space of at least two feet around the projection apparatus. Such rooms or booths shall be provided with vents opening to a mechanically ventilated area or the outdoors, adequate in size to supply the make-up air required. The rooms or booths shall be provided with at least one noncombustible or metal clad door at least two feet by six feet opening in the direction of exit travel, and no point within the room, booth, or gallery shall be more than fifty feet from a door opening into a corridor or space that provides access to an exit at a distance not greater than seventy-five feet.

§[C26-801.20] 27-544 Motion picture screens. -
Motion picture screens shall be noncombustible, or have a flame spread rating not over twenty-five, or be of materials that have been rendered flameproof in accordance with the provisions of chapter four of this title. The construction supporting screens shall be noncombustible, and shall comply with the stage rigging requirements of subchapter nine and with the provisions of subchapter ten of this chapter.

ARTICLE 3 F-1 PLACES OF ASSEMBLY

§[C26-802.1] 27-545 General. -
The provisions of this section shall apply to all places of assembly classified in occupancy group F-1 under the provisions of subchapter three of this chapter.

§[C26-802.2] 27-546 F-1a places of assembly. -
F-1a places of assembly shall comply with all of the requirements of article two of subchapter eight of this chapter, and with the following:

(a) Construction in seating areas. -

(1) Scenery or scenic elements may be placed in seating sections of F-1a assembly spaces if such elements:

a. Are noncombustible, or of materials that have been rendered flameproof in accordance with the provisions of chapter four of this title, or have a flame spread rating of twenty-five or less.

b. Are adequately braced or secured.

c. Do not obstruct the required visibility of, or paths of travel to, exit openings.

(2) Platforms or runways for performances, to accommodate the operation of cameras, electronic equipment, or motion picture projection machines not using carbon-arc or other light source that emits a gaseous discharge may be constructed in seating sections, provided such platforms or runways comply with the requirements of paragraph one of subdivision (a) of this section.

(b) Stage requirements. -

(1) DEFINITION. -
For the purposes of this section the stage in an F-1a place of assembly shall include the performing area and all other nonaudience areas that are used in the presentation of a performance and that are open to the performing area. The performing area shall be that area between the outer edge of the stage apron and the furthermost up-stage acting boundary, the width being the maximum stage opening to the audience.

(2) STAGE FLOOR CONSTRUCTION. -
The floor construction of stages shall provide fire-resistance ratings complying with the requirements of section 27-240 of article two of subchapter three of this chapter and table 3-4 except as follows:

a. Any portion of the stage floor used for passing scenery and scenic elements to a lower level may consist of heavy timber construction supporting tight fitting traps of at least three inch nominal solid wood or of equivalent materials in terms of fire-resistance, strength, and stiffness properties.

b. Stage lifts shall comply with the provisions of subchapter eighteen of this chapter. Any portion of the stage floor that is equipped with stage lifts shall be of noncombustible construction. Joints between lift platforms and adjacent floors shall be tightly fitted.

c. Finish flooring shall comply with the provisions of section 27-351 of article five of subchapter five of this chapter.

(3) AREAS BELOW THE STAGE. -
When the stage floor is equipped with traps or stage lifts, the room or space below the stage into which the traps or lifts open shall be completely enclosed by construction having at least the fire-resistance rating required for the stage floor, and such room or space shall not be used as a workshop or storage area. Storage shall not be deemed to include the location in this area of scenery or scenic elements used during a performance. However, no combustible material that has a flamespread rating greater than twenty-five or that has not been rendered flameproof in accordance with chapter four of this title may be stored in this location at any time. Under-stage areas shall comply with the requirements of paragraph eleven of this subdivision.

(4) EXITS FROM THE STAGE. -
At least two exits, remote from each other, shall be available from every point on a stage, each within a travel distance limitation of one hundred twenty-five feet. The occupant load of the stage shall be based upon one person per fifteen square feet for the performing area and on one person per fifty square feet for the remaining area. When any portion of a stage is used for audience seating at any time, exits of adequate capacity shall be provided for that portion, within the travel distance limitations for assembly space seating. Exit openings serving a stage directly shall have a capacity of seventy-five persons per unit of exit width.

(5) SCENERY AND SCENIC ELEMENTS. - All scenery or scenic elements shall be of noncombustible materials, or of materials having a flame-spread rating not exceeding twenty-five, or of materials that have been rendered flameproof in compliance with the provisions of chapter four of this title. Scenery and scenic elements not complying with the above requirements may be used only when expressly permitted by the fire department.

(6) RIGGING LOFTS, FLY GALLERIES, AND GRIDIRONS. - Girders, beams, or slats of galleries or gridirons over the stage floor or in the rigging loft need not be fire protected but shall be of noncombustible materials designed in accordance with the provisions of subchapters nine and ten of this chapter.

(7) AUTOMATIC SPRINKLER PROTECTION. - Stages in F-1a places of assembly shall be provided with automatic sprinkler protection complying with the construction provisions of subchapter seventeen of this chapter, as follows:

a. Automatic sprinklers shall be placed above all rigging lofts; and above all stage areas, other than those portions of stage areas specifically designated on approved plans as performing areas which do not have rigging lofts above and that are not at any time used for storage purposes. Sprinklers above rigging lofts shall be located so that no gridiron or other obstruction intervenes between the sprinkler heads and the scenery or scenic elements.

b. When any part of a stage is sprinklered in accordance with the provisions of subparagraph a of this paragraph, or when rigging lofts are provided, such stage areas and rigging lofts shall be completely separated from audience areas by a deluge sprinkler system designed to form a vertical water curtain, with heads spaced to provide a water density of at least three gpm per linear foot. The water curtain system shall be controlled by a deluge valve actuated by a "rate of rise system" and "fixed temperature system." The heat actuating devices shall be located on not more than ten foot centers around the perimeter of the sprinklered area or as otherwise required for the type of device used to assure operation of the system. In addition to the automatic controls, manual operating devices shall be located at the emergency control station as required by paragraph ten of this subdivision, and adjacent to at least one exit from the stage. Such exit shall be remote from the emergency control panel.

c. When openings are provided in the stage floor for stage lifts, trap doors or stairs, sprinklers spaced five feet on centers shall be provided around the opening at the ceiling below the stage, and baffles at least twelve inches in depth shall be installed around the perimeter of the opening.

d. All valves controlling sprinkler supplies shall be provided with tamper switches wired to an annunciator panel located at the emergency control panel.

e. The operation of any section of the sprinkler system and the deluge system shall activate the emergency ventilating equipment required in paragraph eight of this subdivision.

f. The water flow alarm, tamper switches and deluge system equipment shall be provided with central station supervision in addition to the required local alarm.

g. Existing premises shall be required to

conform with this requirement on or before January twelfth, nineteen hundred eighty. However, existing sprinkler systems, which have been previously accepted by the department or by the fire department, shall be deemed in compliance with this requirement.

(8) EMERGENCY VENTILATION. - Emergency ventilation shall be provided for all stages in F-1a places of assembly to provide a means of removing smoke and combustion gases to the outdoors in the event of a fire, as follows:

a. A mechanical exhaust system shall be provided of sufficient capacity to exhaust an amount of air at least equal to the sum of the following:

(1) two cfm per square foot of the performing area.

(2) four cfm per square foot of that portion of stage area that is not designated as performing area.

(3) four cfm per square foot of rigging loft area.

b. The exhaust system shall be designated to be activated both manually and automatically, manual operation shall be by means of a manually operated switch located at the emergency control panel as required by paragraph ten of this subdivision and adjacent to at least one exit from the stage. Such exit shall be remote from the emergency control panel. Automatic activation shall be by means of the sensing devices that start the operation of the sprinklers. Exhaust air openings of ducts shall be located so as to provide the most effective removal of smoke and combustion gases.

c. The exhaust system shall be provided with an automatic emergency by-pass damper in the exhaust duct on the suction side of the fan. Such damper shall close to* the fan in the event of a power failure to the fan motor and shall open directly to the outdoors if the fan is located outside the building, or shall open to a duct leading directly to the outdoors if the fan is located inside the building. When located inside the building, the fan shall be insulated with a minimum of one inch magnesia block or the equivalent in insulating and fire-resistive qualities. Exhaust fans shall have drive and bearings located outside of the fan impeller housing. The exhaust system shall not be connected to exhaust openings in any space other than the stage and rigging loft, and shall be constructed to comply with the provisions of subchapter thirteen of this chapter[. All]** switches shall be clearly labelled "emergency stage ventilation" and shall be painted red.

As enacted but "to" probably intended to be omitted.

****** Copy in brackets not enacted but probably intended.***

d. The emergency ventilation system shall be connected to both the normal and emergency light and power circuits.

(9) CURTAINS. - No curtain shall be located between the audience area and the stage unless it is designated to permit the air movement required for emergency ventilation in paragraph eight of this subdivision to bypass or pass through the curtain without excessive billowing, and be made of noncombustible fabrics, as specified in the appendix of reference standard RS 7-3.

(10) EMERGENCY CONTROL PANEL. - An emergency control panel shall be provided, as follows:

a. It shall be located on or adjoining the stage, except that where the stage is surrounded by seating, it shall be located so as to permit a view of the audience and stage areas. It shall be manned in accordance with the requirements of the fire department at all times during the presentation of a performance to an audience.

b. It shall be equipped with tell-tale lights to indicate when feeders and subfeeders of emergency light and power circuits are in operation in assembly spaces and all exits, including safe areas.

c. It shall, when a deluge type sprinkler system is provided, be equipped with manual operating devices to activate the sprinkler system. It shall also be provided with a signal system to show when any portion of the sprinkler system has been deactivated.

d. It shall be provided with switches to provide for operation of the emergency ventilating system. Controls for the ventilating system shall be electrically supervised. The supervisory circuit shall be provided with a trouble bell and light, both of which shall be activated in the event of a failure in the ventilation system. A silencing switch may be provided, and where provided, shall have either an automatic reset or shall ring again when the trouble is corrected.

e. It shall be equipped with a public address system serving loudspeakers in the assembly space. The public address system shall be connected to both the normal and emergency light and power circuits.

f. It shall be equipped with an alarm system and intercom connected to the manager's office, the dressing rooms, and to a supervisory central fire station.

(11) AUXILIARY STAGE SPACES. -

Auxiliary stage spaces such as understage areas, dressing rooms, green rooms, storage rooms, work shops, and similar spaces associated with the use of the stage shall comply with the following:

a. No point within any auxiliary stage space shall be more than fifty feet from a door providing access to an exit.

b. There shall be at least two exits available from every auxiliary space, one of, which shall be available within a travel distance of seventy-five feet. A common path of travel of twenty feet to the two exits shall be permitted.

c. The occupant load of dressing rooms shall be based on one person per fifty square feet of area.

d. Auxiliary stage spaces shall be equipped with automatic sprinklers when required by the provisions of subchapter seventeen of this chapter.

e. No workshop involving the use of combustible or inflammable paint, liquids, or gases or their storage

shall open directly upon a stage.

f. The interior finish of auxiliary stage spaces shall comply with the requirements of table 5-4.

(12) STAGE LIGHTING. - No stage lights shall be placed so that they will develop temperatures on the surface of any material that will cause that material to ignite, or smoke, or cause its flameproofing to deteriorate.

§[C26-802.3] 27-547 F-1b Places of assembly. -
F-1b places of assembly shall comply with all of the requirements of article two of this subchapter, and with the following:

(a) Certificate of occupancy. -
The certificate of occupancy for F-1b places of assembly shall specifically note the prohibition against the use or placement of scenery or scenic elements on or above the stage.

(b) Stage requirements. -

(1) DEFINITION. - For the purposes of this section, the stage in an F-1b place of assembly shall be the area where the principal activity viewed by the audience takes place.

(2) CONSTRUCTION. - Raised platforms may be built as stages in F-1b places of assembly when they are supported on floors having the fire-resistance ratings required by table 3-4, in accordance with the following:

a The area below the platform shall be enclosed on all sides with solid construction.

b. The horizontal area of stage construction shall not exceed the following:
Wood frame: maximum area-four hundred square feet.
Fire retardant treated wood: maximum area-twelve hundred square feet.
Noncombustible frame: maximum area-unlimited.

c. The floor of the stage, when wood is used, shall be a least one inch nominal thickness, and shall be laid on a solid, noncombustible backing, or all spaces between supporting members shall be fire-stopped with noncombustible material.

d. In all F-1b places of assembly providing live entertainment, at anytime, the stage, dressing rooms and property rooms shall be provided with automatic sprinkler and fire alarm protection in conformance with the provisions of subchapter seventeen of this chapter. Existing premises shall be required to conform with this requirement on or before January twelfth, nineteen hundred eighty. However, existing sprinkler systems, which have been previously accepted by the department or by the fire department, shall be deemed in compliance with this requirement.

(3) EXITS FROM THE STAGE. -
At least two exits, remote from each other, shall be available from every point on a stage, each within a travel distance limitation of one hundred fifty feet. The occupant load of the stage shall be based upon one person per twenty-five square feet of area. When any portion of a stage is used for audience seating at any time, exits of adequate capacity shall be provided for that portion, within the travel distance limitations for assembly space seating. Exit openings serving a stage directly shall have a capacity of one hundred persons per unit of exit width.

(4) EMERGENCY CONTROL PANEL. - In F-1b places of assembly having an occupant load over six hundred persons, an emergency control panel shall be provided, as follows:

a. It shall be located so as to have a view of the audience and stage areas, and shall be manned during the presentation of a performance to an audience, by a competent person instructed in its use.

b. It shall be equipped with tell-tale lights to indicate when feeders and subfeeders of emergency light and power circuits are in operation in assembly spaces and all exits, including safe areas.

c. It shall be equipped with a public address system serving loudspeakers in the assembly space. The public address system shall be connected to both the normal and emergency light and power circuits.

ARTICLE 4 F-2 PLACES OF ASSEMBLY

§[C26-803.1] 27-548 General. - The provisions of this section shall apply to all places of assembly classified in occupancy group F-2 under the provisions of subchapter three. F-2 places of assembly shall comply with all of the requirements of article two of this subchapter, and with the following:

(a) Enclosure. - To qualify as an F-2 outdoor place of assembly, a place of assembly shall have at least forty percent of the combined surface area of all exterior wall and roof planes open to the outdoors. When a portion of an outdoor place of assembly is enclosed to a greater extent, that portion shall comply with all of the requirements of this code applicable to indoor places of assembly.

(b) Grandstands. - Grandstands shall comply with the following:

(1) CONSTRUCTION.- Grandstands shall be designed in accordance with the requirements of subchapters nine and ten of this chapter.

(2) HEIGHT AND AREA.- Grandstands, when built entirely of noncombustible materials, may be of unlimited height and area, and when built of combustible materials, shall be subject to the following limitations:

a. No section of seating shall exceed twenty feet in height, or exceed ten thousand square feet in area.

b. When more than one section of seating is provided, and the separation between them is less than fifty feet, each section shall be separated from the other by construction having a fire-resistance rating of

a least two hours and rising to a height of at least two feet six inches above the levels of seating at each row.

c. No outdoor grandstand of combustible materials shall be erected within less than two-thirds of its height, but in no case less than ten feet, of a building or an interior lot line unless separated therefrom by noncombustible construction having a one hour fire-resistance rating.

(3) SPACES UNDER SEATS. -
Spaces under grandstand seats shall be kept free of all combustible materials and shall not be occupied or used for other than egress, unless such spaces are completely enclosed by noncombustible construction having a two hour fire-resistance rating.

(4) PARKING. - Motor vehicle parking spaces shall not be closer than twenty feet to any grandstand unless separated therefrom by noncombustible construction having a one hour fire-resistance rating.

(c) Stage requirements. -

(1) DEFINITION. - For the purposes of this section the stage in an F-2 place of assembly shall be the area where the principal activity viewed by the audience takes place.

(2) CONSTRUCTION. - The horizontal area of stage construction shall not exceed the following:
Wood frame: maximum area-five thousand square feet.
Fire retardant treated wood: maximum area-ten thousand square feet. Noncombustible frame: maximum area-unlimited.

(3) EXITS FROM THE STAGE. -
At least two exits, remote from each other, shall be available from every point on a stage, each within a travel distance limitation of three hundred feet. The occupant load of the stage shall be based upon one person per fifty square feet of area. When any portion of a stage is used for audience seating at any time, exits of adequate capacity shall be provided for that portion, within the travel distance limitations for assembly space seating. Exit openings serving a stage directly shall have a capacity of four hundred persons per unit of exit width.

(4) EMERGENCY CONTROL PANEL. -
In F-2 places of assembly having an occupant load over one thousand persons, an emergency control panel shall be provided as follows:

a. It shall be located so as to have a view of the audience and stage areas, and shall be readily accessible at all times during the presentation of a performance to an audience, to a competent person instructed in its use.

b. It shall be equipped with tell-tale lights to indicate when feeders and subfeeders of emergency light and power circuits are in operation in assembly spaces and all exits.

c. It shall be equipped with a public address system serving loudspeakers in the assembly space. The public address system shall be connected to both the normal and emergency light and power circuits.

(d) Drive-in-theaters-

Drive-in theaters shall comply with the following:

(1) Projection booths and projection machines shall comply with the requirements of section 27-543 of article two of this subchapter. Motor vehicle parking spaces shall not be closer than twenty feet to any projection booth or machine.

(2) Projection screens and supporting structures shall comply with the requirements of section 27-544 of article two of this subchapter and shall be designed in accordance with the requirements of subchapters nine and ten of this chapter as applied to signs. Motor vehicle parking spaces shall not be closer than twenty feet to any projection screen.

(e) Amusement parks. - Buildings and structures within amusement parks shall be constructed to conform with all of the requirements of this code governing the specific use and occupancy. Amusement devices shall not be placed in operation until they have been made to comply with the provisions of subchapter eighteen of this chapter.

ARTICLE 5 F-3 AND F-4 PLACES OF ASSEMBLY

§[C26-804.1] 27-549 General. -
The provisions of this section shall apply to all places of assembly classified in occupancy group F-3 or F-4 under the provisions of subchapter three of this chapter. F-3 or F-4 places of assembly shall comply with all the requirements of article two of this subchapter and the following:

(a) Stage requirements. -

(1) With scenery and scenic elements. - Where an F-3 or F-4 place of assembly provides a stage using scenery and scenic elements, the space shall comply with all of the requirements of this code applicable to F-1a places of assembly.

(2) Without scenery and scenic elements. - Where an F-3 or F-4 place of assembly provides a stage not using scenery or scenic elements, the space shall comply with all of the requirements of this code applicable to F-1b places of assembly.

(3) Cabarets. - In all F-4 places of assembly used as a cabaret, the stage dressing rooms and property rooms shall be provided with automatic sprinkler and fire alarm protection in compliance with the provisions of subchapter seventeen of this chapter. Existing premises shall be required to conform with this requirement on or before January twelfth, nineteen hundred eighty.

(b) Retroactive provisions.- On or before January twelfth, nineteen hundred eighty, all places of assembly providing entertainment or used as a cabaret within F-3 or F-4 occupancies shall be provided with automatic sprinkler and fire alarm protection to comply with the provisions of subchapter seventeen of this chapter.

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SUBCHAPTER 9
LOADS

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9-1 Percentage of Live Load

ARTICLE 1 GENERAL

§[C26-900.1] 27-550 Scope. -
Buildings and parts thereof, shall be capable of resisting all levels*** actually imposed thereon without exceeding the allowable stresses prescribed in subchapters ten and eleven of this chapter. In no cases shall the assumed loads be less than the minimum values described herein. In addition, within special flood hazard areas, and below the regulatory flood datum, as described in article ten of subchapter four of this chapter, applicable load requirements of reference standard RS 4-5 shall be applied.

****** As enacted but "loads" probably intended.*

§[C26-900.2] 27-551 Standards. -
The provisions of reference standard RS-9 shall be a part of this subchapter.

§[C26-900.3] 27-552 Definitions. -
For definitions to be used in the interpretation of this subchapter, see subchapter two of this chapter.

ARTICLE 2 DEAD LOADS

§[C26-901.1] 27-553 Construction materials and assembled elements of construction. - Except as provided in section 27-555 of this article, the dead load shall be the actual weight of the building materials or construction assemblies to be supported, computed from the unit weights given in reference standard RS 9-1. Where unit weights are not established in reference standard RS 9-1, the actual weights may be determined by analysis or from data in manufacturers' drawings or catalogs. Unit weights less than those given in reference standard RS 9-1 may be used only with approval of the commissioner.

§[C26-901.2] 27-554 Service equipment. - Provision shall be made for the weights of all building service equipment including plumbing stacks, piping, heating and air conditioning equipment, electrical equipment, elevators, elevator machinery, flues, and similar fixed equipment. The weights of such equipment (or the allowances therefor) shall be included in the dead load. The weight of equipment that is part of the occupancy of a given area shall be considered as live load. See also paragraph two of subdivision (b) and subdivision (d) of section 27-557 of article three of this subchapter.

§[C26-901.3] 27-555 Partition loads. - Weights of all partitions shall be considered, using either actual weights at locations shown on the plans or the equivalent uniform load given in subdivision (b) of this section.

(a) Actual loads. - Where actual partition weights are

used, the uniform design live load may be omitted from the strip of floor area under each partition.

(b) Equivalent uniform load. - The equivalent uniform partition loads in reference standard RS 9-1 may be used in lieu of actual partition weights except for bearing partitions or partitions in toilet room areas (other than in one- and two-family dwellings), at stairs and elevators, and similar areas where partitions are concentrated. In such cases, actual partition weights shall be used in design. Except as otherwise exempted, equivalent uniform loads shall be used in areas where partitions are not definitely located on the plans, or in areas where partitions are subject to rearrangement or location.*

As enacted but "relocation" probably intended.

ARTICLE 3 LIVE LOADS

§[C26-902.1] 27-556 General. -

In addition to the applicable dead, wind, and other loads, the building shall be designed for uniform live loads, for concentrated live loads, or for concurrent combinations of uniform and concentrated live loads, whichever produce the greatest stress.

§[C26-902.2] 27-557 Floor live loads. -

(a) Uniformly distributed live loads. - The minimum design values established in reference standard RS 9-2 for various occupancies or uses shall be used subject to the provisions of subdivision (d) of this section. Where the occupancy or use of a space does not conform to any of those listed, the design load shall be determined by the architect or engineer subject to approval by the commissioner.

(b) Concentrated live loads. -

(1) The building framing shall be capable of supporting the concentrated live loads established in reference standard RS 9-2, placed so as to produce maximum stress.

(2) Floors that support any items of machinery, electrical or mechanical equipment, or other concentrated live load in excess of one thousand pounds (including the weights of pads or bases) shall be designed to support such weight as a concentrated load or group of concentrated loads.

(c) Nonconcurrence. -

(1) When a concentrated live load is present, the uniformly distributed load may be considered to be omitted in the area occupied by the concentrated load.

(2) Where reference standard RS 9-2 indicates that the concentrated live load is nonconcurrent with the uniform live load, it may be assumed that the total concentrated load is to be omitted when the uniform load is present and that the total uniform load is to be omitted when the concentrated load is present.

(d) Conformance. - For purposes of determining that the magnitude of the actual live load conforms to or is less than the minimum design live load established in this section, the actual uniform live load shall be approximated by averaging the total load actually applied over a rectangular area of one hundred fifty square feet having no side less than eight feet.

§[C26-902.3] 27-558 Live loads for sidewalks, driveways, and railings. -

(a) Sidewalks and driveways. -

(1) When supported on grade, all sidewalks for new buildings and alterations shall be subject to inspection and acceptance by the commissioner. Portions of such sidewalks that are located between the curb line and the street line shall be constructed in compliance with the specifications for concrete sidewalks of the department of transportation.

(2) All sidewalks and driveways or portions thereof that are structurally supported shall be designed for a live load of one hundred psf uniformly distributed and in accordance with the provisions of subchapter ten of this chapter. Where subject to intentionally or accidentally imposed wheel loads of vehicles, such portions of sidewalks and driveways shall be designed for a uniformly distributed load of six hundred psf or for the maximum vehicular wheel load that could be imposed thereon, whichever develops the greater stresses.

(3) Appurtenant components of sidewalks and driveways, including manholes, manhole covers, vault covers, gratings, etc., shall be designed for the loads prescribed in paragraph two of this subdivision, or shall conform to the standards of the city agency having jurisdiction.

(b) Railings and parapets. -

(1) Railings and parapets around stairwells, balconies, areaways, and roofs, and other railings in similar locations other than those for places of assembly, shall be designed to resist the simultaneous application of a lateral force of forty plf and a vertical load of fifty plf, both applied to the top of the railing. For railings and parapets at the front of theater balconies and in similar locations in places of assembly, the lateral force shall be increased to fifty plf and the vertical load to one hundred plf. An exception is made for railings in one- and two-family dwellings, which shall be designed for a lateral force of twenty plf plus a vertical load of twenty plf, both applied at the top of the railing. The total lateral force and total vertical load shall be at least two hundred pounds each.

(2) Intermediate and bottom rails, if provided, shall be designed for the simultaneous application of forty plf applied horizontally and fifty plf applied vertically; however, lateral and vertical design loads on intermediate and bottom rails need not be considered in the design of posts and anchorages. For railings having solid panels, the panels shall be designed for a uniform lateral load of twenty psf.

(3) Where railings or parapets support fixtures, allowance shall be made for the additional loads imposed thereby.

(4) Railings, bumpers, or similar devices used in parking areas to resist the impact of moving vehicles shall be designed to resist a lateral load of three hundred plf applied at least twenty-one inches above

the roadway; but in no case shall the load be less than twenty-five hundred pounds per vehicle.

§[C26-902.4] 27-559 Columns in parking areas. - Unless specially protected, columns in parking areas subject to impact of moving vehicles shall be designed to resist the lateral load due to impact and this load shall be considered a load of infrequent occurrence. For passenger vehicles, this lateral load shall be taken as a minimum of twenty-five hundred pounds applied at least twenty-one inches above the roadway and acting simultaneously with other design loads.

§[C26-902.5] 27-560 Stage areas using scenery or scenic elements. - Scenery battens and suspension systems shall be designed for a load of thirty pounds per linear foot of batten length. Loft block and head block beams shall be designed to support vertical and horizontal loads corresponding to a four inch spacing of battens for the entire depth of the gridiron. Direction and magnitude of total forces shall be determined from the geometry of the rigging system including load concentrations from spot line rigging. Locking rails shall be designed for a uniform uplift of five hundred psf with a one thousand pound concentration. Impact factor for batten design shall be seventy-five percent and for loft and head block beams shall be twenty-five per cent. A plan drawn to a scale not less than one-quarter inch equals one foot shall be displayed in the stage area indicating the framing plan of the rigging loft and the design loads for all members used to support scenery or rigging. Gridirons over stages shall be designed to support a uniformly distributed live load of fifty psf in addition to the rigging loads indicated.

§[C26-902.6] 27-561 Roof loads. -
Roofs and marquees shall be designed for wind, live, and other loads as prescribed in subdivisions (a) through (d) of this section. It may be assumed that maximum wind load occurs with zero live load and that maximum live load occurs with zero wind load. For dwellings an exception is made for awnings, canopies, and patio covers, which may be designed for a live load of twenty psf of horizontal projection.

(a) Live load. - Minimum design live loads shall be as follows:

(1) For roofs with slopes up to and including twenty degrees from the horizontal, thirty psf of horizontal projection.

(2) For roofs with slopes greater than twenty degrees from the horizontal, thirty psf of horizontal projection, reduced by one psf for each degree of slope in excess of twenty degrees.

(3) For valleys, live loadings shall be increased to provide for accumulations of snow. The loading intensity shall be assumed to vary from forty-five psf at the low point to fifteen psf at the ridge.

(4) For roofs having curved or pyramidal shapes, the proposed live load shall be established by the architect or engineer, subject to approval by the commissioner.

(b) Wind load. - The provisions of section 27-569 of article five of this subchapter shall apply.

(c) Concentrated loads. -
The provisions of subdivision (b) of section 27-557 of this article shall apply.

(d) Special loads. -

(1) When used for purposes such as promenades, assembly areas, or roof gardens, design shall be made for live loads corresponding to the particular usage, as indicated in reference standard RS 9-2. Such loads shall be considered as nonconcurrent with the wind load or with the live load specified in subdivision (a) of this section. The design live and wind loads for roofs, as specified elsewhere in this subchapter, shall be deemed to provide for incidental use of the roof of a building by the occupants thereof.

(2) Where roofs are intended for the ponding of water, the roof shall be designed for the maximum possible depth of water which may be ponded thereon as determined by the relative levels of roof deck and overflow weirs or scuppers. Such load need not be considered as occurring simultaneously with wind or live load.

(3) Girders and roof trusses (other than joists) over garage areas regularly utilized for the repair of vehicles and over manufacturing floors or storage floors used for commercial purposes shall be capable of supporting, in addition to the specified live and wind loads, a concentrated live load of two thousand pounds applied at any lower chord panel point for trusses, and at any point of the lower flange for girders.

(4) Where roofs are landscaped, the uniform design live load on the landscaped portions shall be thirty psf. The weight of the landscaping materials shall be considered as dead load and shall be computed on the basis of saturation of the earth. The areas adjacent to the landscaped portions shall be considered as assembly areas, unless specific provision is made to prevent such use.

(5) Where equipment is placed on roofs, the design shall provide for the support of such equipment.

§[C26-902.7] 27-562 Moving loads. –
Where applicable to the use or occupancy of the building, the design shall consider the moving loads described below.

(a) General. -The loads established in subdivisions (a) and (b) of section 27-557 of this article shall be assumed to include allowance for ordinary impact conditions.

(b) Passenger vehicles. - Areas used for, and restricted by physical limitations of clearance to, the transit or parking of passenger vehicles shall be designed for the uniformly distributed and concentrated loads for parking areas for such vehicles as provided in reference standard RS 9-2, applied without impact. An exception is made for members or constructions which,

because of physical limitations, cannot be subjected to direct load from the vehicle or from a jack or hoist used to shall be designed for the loads corresponding raise or suspend the vehicle. Such members or constructions to the actual usage.

(c) Truck loads. -Minimum loads (including vertical, lateral, and longitudinal) and the distribution thereof shall meet the applicable requirements or reference standard RS 9-3, except that impact shall be taken as ten percent of the vertical reaction.

(d) Railroad equipment. - Minimum loads (including vertical, lateral, longitudinal, and impact) and the distribution thereof shall meet the applicable requirements of reference standard RS 9-4.

(e) Crane runways and supports. -

(1) VERTICAL LOADS. - Actual maximum wheel loads occurring when the crane is lifting its capacity load shall be used. To allow for impact, the lifted load shall be increased twenty-five percent or the wheel loads increased fifteen percent whichever produces greater stress condition.

(2) HORIZONTAL LOADS. -

a. Lateral load (due to crane trolley travel) shall be twenty percent of the sum of the capacity load and the trolley weight, applied one-half at the top of each rail and acting in either direction normal to the runway rail.

b. Longitudinal load (due to crane travel) shall be twenty percent of the maximum total reaction (not including impact) on the rail being considered, applied at the top of the rail and acting parallel to the runway.

(f) Monorail beams and supports. -

(1) Vertical loads shall be the sum of the capacity load and trolley weight. To allow for impact, the lifted load shall be increased ten percent for hand-operated and twenty-five percent electrically-operated trolleys.

(2) Longitudinal loads shall be twenty percent of the sum of the capacity load and the weight of the trolley.

(3) Lateral loads shall be twenty percent of the sum of the capacity load and the weight of the trolley.

(4) Centrifugal forces shall be considered for curved tracks.

(g) Loads on supports for elevators, dumbwaiters, and escalators. - The provisions of subchapter eighteen of this chapter shall apply.

(h) Loads on machinery supports. -

Unless machinery is isolated from the support framing, the reactions of reciprocating or heavy power-driven units shall be increased at least fifty percent and reactions of light shaft - or motor-driven [*sic*] units shall be increased at least twenty-five percent to provide for impact.

(i) Assembly structures. -

Seating areas in grandstands, stadiums, and similar assembly structures shall be designed to resist the simultaneous application of a horizontal swaying load of at least twenty-four plf of seats applied in a direction parallel to the row of the seats, and of at least ten plf of seats in a direction perpendicular to the row of the seats. When this load is used in combination with wind for outdoor structures, the wind load shall be one-half of the design wind load, and the provisions of subchapter ten of this chapter relating to infrequent stress conditions shall apply to this loading condition.

(j) Heliports and helistops. –

(1) CONCENTRATED LOADS. -

a. Landing area. - Helicopter landing areas shall be designed for either of the following vertical loads acting at any location:

1. A single concentrated load equal to three quarters of the gross weight of the helicopter and acting on an area of one square foot.

2. Concentrated loads representing the gross wheel reactions of the helicopter acting simultaneously and increased one-third for impact.

b. Taxiing area. - Helicopter taxiing areas shall be designed for concentrated loads in accordance with clause two of this subparagraph.

(2) UNIFORM LIVE LOAD. -

The landing and taxiing areas shall be capable of supporting a uniformly distributed live load of forty psf acting nonconcurrently with the concentrated loads.

§[C26-902.8] 27-563 Partial loading conditions. -

(a) Uniformly distributed loads. -

In continuous framing and cantilever construction, the design shall consider live load on all spans and arrangements of partial live load that will produce maximum stresses in the supporting members. The simplifications given in paragraphs one through three of this subdivision are permissible.

(1) FLOOR AND ROOF FRAMING. -

a. For vertical live load applied to the level under consideration, the far ends of the columns above and below that level may be assured* as fixed.

b Combinations of live load may be limited to the following:

1. Live load placed on two adjacent spans.

2. Live load placed on alternate spans. The effects of live load on spans more than two spans away from the span under consideration may be neglected.

(2) ARCHES AND GABLED FRAMES. -

a. Live load placed on 1/2 span adjacent to one support.

b. Live load placed on the center 1/4 span.

c. Live load placed on 3/8 the span adjacent to each support.

(3) COLUMNS. - Moments due to vertical loads may be calculated from the live load on the largest single adjacent span of the floor under consideration. This moment shall be assumed to act concurrently with live load on all other floors.

(b) Moving concentrated loads. -

Structural members supporting moving concentrated loads shall be designed for only those loads that can physically occur simultaneously and are arranged to produce maximum stresses.

As enacted but "assumed" probably intended.

§[C26-902.9] 27-564 Floor loads to be posted. -

(a) Posting required. -

Posting requirements shall conform to the requirements of section 27-225 of article twenty-three of subchapter one of this chapter.

(b) Data required. - The following floor load data shall be shown:

(1) The uniformly distributed design live load for each floor or part thereof.

(2) The weight of any piece of machinery or equipment weighing more than one thousand pounds, and its identifying description and location.

(3) The maximum design wheel load and total maximum weight of any vehicle that may be brought into the building.

(4) The equivalent uniform partition loads or, in lieu of this, a statement to the effect that the design was predicated on actual partition loads.

ARTICLE 4 LIVE LOAD REDUCTION

§[C26-903.1] 27-565 Roof loads. –

No reduction shall be permitted.

§[C26-903.2] 27-566 Floor live loads. –

The uniform live load to be used for design shall be the basic value established in reference standard RS 9-2 multiplied by the percentages given in subdivisions (a) through (d) of this section.

(a) Except as provided in subdivisions (b), (c), and (d) the percentages in table 9-1 shall apply. Contributory areas shall be computed in accordance with section 27-567 of this article.

(b) No live load reduction shall be permitted for the following: members and connections (other than columns, piers, and walls) supporting floor areas used for storage (including warehouses, library stacks, and record storage); areas used for parking of vehicles; and areas used as place of assembly, for manufacturing, and for retail or wholesale sales. For columns, piers, and walls supporting such floor areas the maximum live load reduction shall be twenty percent.

(c) No live load reduction shall be permitted for calculating shear stresses at the heads of columns [*sic*] in flat slab or flat plate construction.

(d) In lieu of the percentages given in table 9-1, the live load reductions for columns, piers and walls may be taken as fifteen percent of the live load on the top floor, increased successively at the rate of five percent on each successive lower floor, with a maximum reduction of fifty percent; and for girders supporting two hundred square feet or more of floor area, the live load reduction may be taken at fifteen percent. The limitations of subdivisions (b), (c)and (d) of this section shall apply.

TABLE 9-1 PERCENTAGE OF LIVE LOAD*

Contributory Area (sq. ft.) [*sic*]	Ratio of Live Load to Dead Load*		
	0.625 or less	1	2 or more
149 or less…….	100	100	100
150-299…….	80	85	85
300-449…….	60	70	75
450-599…….	50	60	70
600 or more……	40	55	65

Note for Table 9-1:

*For intermediate values of live load/dead load, the applicable percentages of live load may be interpolated.

§[C26-903.3] 27-567 Contributory floor areas. -

For purposes of computing live load reduction, contributory floor areas shall be determined as follows:

(a) For the design of one-way and two-way slabs: the product of the shorter span length and a width equal to one-half the shorter span length. Ribbed slabs shall be considered as though the slabs were solid.

(b) For the design of slabs in flat plate or flat slab construction: one-half the area of the panel.

(c) For the design of columns and girders or trusses framing into columns: the loaded area directly supported by the column, girder, or truss. For columns supporting more than one floor, the loaded area shall be the cumulative total area of all of the floors that are supported.

(d) For the design of joists and similar multiple members framing into girders or trusses, or minor framing around openings: twice the loaded area directly supported but not more than the area of the panel in which the framing occurs.

§[C26-903.4] 27-568 Foundations and column supports.-

The live load to be supported by the foundation or by trusses or girders that support columns shall be the total column reaction reduced as provided in section 27-566 and section 27-567 of this article.

ARTICLE 5
*WIND LOADS AND EARTHQUAKE LOADS

***§[C26-904.0] 27-569 Wind loads and earthquake loads.-**

(a)Wind loads.-

The structural frame and exterior components of all buildings, tanks, and other exposed constructions shall be designed to resist the pressures due to wind as prescribed in reference standard RS 9-5. Wind shall be assumed to act from any direction. For continuous framing, the effects of partial loading conditions shall be considered.

(b) Earthquake loads.

Every building, structure and portion thereof shall, at a minimum, be designed and constructed to resist the effects of seismic ground motions as prescribed in reference standard RS 9-6.

****Local Law 17-1995.***

ARTICLE 6 OTHER LOADS

§[C26-905.1] 27-570 Earth pressures and foundation loads. - The provisions of article three of subchapter eleven of this chapter shall apply.

§[C26-905.2] 27-571 Bins and bunkers-
Loads on component parts of bins and bunkers may be reduced for friction on sidewalls, provided that sidewalls and supports are proportioned for the increased vertical loads. Where stresses would be increased in any component by arching of the fill, the effect of such arching shall be considered.

§[C26-905.3] 27-572 Prestressing forces. -
Prestressing forces shall be considered in the design of prestressed concrete structures, cable structures, guyed structures, and multiple intersecting truss webs utilizing tension members.

§[C26-905.4] 27-573 Construction loads. -
The provisions of subchapter nineteen of this chapter shall apply.

§[C26-905.5] 27-574 Fluid pressures. -
The design of building components shall consider pressures, both positive and negative, of confined fluids and gases.

§[C26-905.6] 27-575 Ice. -
The weight of a one-half inch radial thickness of ice on all surfaces shall be considered as part of the live load in the design of open framed or guyed towers.

§[C26-905.7] 27-576 Thermal forces. -
The design of enclosed buildings more than two hundred fifty feet in plan dimension shall provide for the forces and/or movements resulting from an assumed expansion corresponding to a change in temperature of forty degrees F. For exterior exposed frames, arches, or shells regardless of plan dimensions, the design shall provide for the forces and/or movements resulting from an assumed expansion and contraction corresponding to an increase or decrease in temperature of forty degrees F for concrete or masonry construction and sixty degrees F for metal construction. For determining required anchorage for piping, the forces shall be determined on the basis of temperature variations for the specific service conditions. Friction forces in expansion bearings shall be considered.

§[C26-905.8] 27-577 Shrinkage. -
The design of reinforced concrete components shall provide for the forces and/or movements resulting from shrinkage of the concrete in the amount of 0.0002 times the length between contraction joints for standard weight concrete, and 0.0003 times the length between contraction joints for lightweight concrete. The design of arches and similar structures shall provide for effects of shrinkage, plus rib-shortening, plus plastic flow.

ARTICLE 7 DISTRIBUTION OF LOADS

§[C26-906.1] 27-578 Distribution of vertical loads.- Distribution of vertical loads to supporting members shall be determined on the basis of a recognized method of elastic analysis or system of coefficients of approximation. Elastic or inelastic displacements of supports shall be considered and, for the distribution of dead loads, the modulus of elasticity of concrete or composition sections shall be reduced to consider plastic flow. Secondary effects, due to warping of the floors shall be considered.

§[C26-906.2] 27-579 Distribution of horizontal loads. - The following provisions shall apply to superstructure framing only, and shall not apply to structures wherein horizontal loads are transmitted to the foundation by stay-cables, arches, non-rectangular frames, or by frames, trusses, or shear walls not oriented in vertical planes.

(a) Distribution of horizontal loads to vertical frames, trusses and shear walls. - Horizontal loads on the superstructure shall be assumed to be distributed to vertical frames, trusses, and shear walls by floor and roof systems acting as horizontal diaphragms. The proportion of the total horizontal load to be resisted by any given vertical frame, truss, or shear wall shall be determined on the basis of relative rigidity, considering the eccentricity of the applied load with respect to the center of resistance of the frames, trusses, or shear walls. For vertical trusses, web deformations shall be considered in evaluating the rigidity.

(b) Distribution of horizontal loads within rigid frames of tier buildings. -

(1) ASSUMPTIONS. - The distribution of horizontal loads within rigid frames of tier buildings may be determined on the basis of a recognized method of elastic analysis or, subject to limitations in paragraph two of this subdivision, may be predicated on one or more of the following simplifying assumptions:

a. Points of inflection in beams or columns are at their midspan and midheight, respectively. The story shear is distributed to the columns in proportion to their stiffnesses.

b. The change in length of columns due to axial effects of the horizontal loads may be neglected.

c. Vertical column loads due to horizontal forces are taken by the exterior columns only, or are resisted by the columns in proportion to the column distances from the neutral axis of the bent.

(2) LIMITATIONS. -

a. For buildings over three hundred feet in height, the change in length of the columns, due to the effects of the horizontal loads, shall be evaluated or the framing proportioned to produce regular movements of the successive joints at each floor so that warping of the floor system may be neglected.

b. Simplifying assumptions used in design shall be subject to approval by the commissioner for any of the following conditions or circumstances:

1. For buildings over three hundred feet in height or for buildings with a height-width ratio greater than five.

2. At two-story entrances or intermediate floors.

3. Where offsets in the building occur.

4. Where transfer columns occur.

5. In any similar circumstances of irregularities or discontinuities in the framing.

(c) Distribution of load in self-relieving construction.- the framing of self-relieving construction may be proportioned on the assumption that connections are fully rigid in resisting moments due to lateral load and that any larger moments due to the gravity loads or due to a combination of gravity and lateral loads will be relieved by deformation of the connection material, provided that:

(1) The fasteners shall be capable of developing the full moment capacity of the connection at the allowable unit stress established in subchapter ten of this chapter.

(2) The connection shall be capable of resisting the moment due to lateral load, and the shear due to lateral load plus vertical load, all at the allowable unit stresses established in subchapter ten of this chapter.

(3) The framing and the building are within the limitations established in subparagraph (b) of paragraph two of subdivision (b) of this section.

(4) The connections shall be detailed to permit the required deformations without fracture, and their capacity to so function shall be verified by test or other means.

(d) Structural walls and partitions. -
Walls and partitions, if specifically designed to resist the applied forces, may be considered as contributing to the resistance or rigidity of the structure with regard to horizontal loads.

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SUBCHAPTER 10
STRUCTURAL WORK

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ARTICLE 1 SCOPE AND GENERAL REQUIREMENTS

§[C26-1000.1] 27-580 Scope. -The provisions of this subchapter, supplemented by the additional requirements of subchapter eleven of this chapter, shall establish minimum requirements for materials, designs, and construction to be used for all structural elements in buildings. In addition, within special flood hazard areas and below the regulatory flood datum, as described in article ten of subchapter four of this chapter, materials, designs and construction required for structural elements by reference standard RS 4-5 shall be applicable.

§[C26-1000.2] 27-581 Standards. -The provisions of reference standard RS-10 shall be a part of this subchapter.

§[C26-1000.3] 27-582 Definitions. -For definitions to be used in the interpretation of this subchapter, see subchapter two of this chapter.

§[C26-1000.4] 27-583 Plans. -For the requirements governing the filing of plans and the work to be shown on the plans, see subchapter one of this chapter.

§[C26-1000.5] 27-584 Permits. -
For the requirements governing equipment work permits and equipment use permits, see subchapter one of this chapter.

§[C26-1000.6] 27-585 General requirements. -
For purposes of this code, the structural elements of a building shall normally include all floor, roof, and wall framing members and slabs (but not including slabs-on-grade); all piers, walls, footings, piles, and similar elements of the foundation; and all other elements of both foundation and superstructure which, in engineering practice, are proportioned on the basis of calculated stress. Where doubt exists as to the structural nature of an element, the provisions of this subchapter, and of subchapter eleven of this chapter, shall be deemed to apply only to an element in which the materials are stressed in excess of thirty-three and one-third percent of the allowable stress values (without increase for infrequent stress conditions) for such material in its proposed use, or to an element wherein public safety would be involved in the event of excessive distortion under the applied loads.

§[C26-1000.7] 27-586 Materials and methods of construction. -
Materials and methods of construction used in the manufacture and/or placement of structural elements in a building shall be subject to the requirements of article seven of subchapter one of this chapter, the inspection provisions established in tables 10-1 and 10-2 and the detailed requirements of articles four through twelve of this subchapter and article thirteen of subchapter eleven of this chapter.

§[C26-1000.8] 27-587 Fire protection requirements to apply.-Where a material or method of construction in a specific use is required to provide fire protection as well as structural adequacy, the material or method of construction shall meet both specified requirements.

§[C26-1000.9] 27-588 Use of used and unidentified materials.-
The utilization of used materials and unidentified or ungraded materials shall be limited to non-structural elements, except:
(a) Such materials (or elements) may be reused, or continued in use, at stress levels to which the materials or elements were subjected in the previous construction, or at load capacity as demonstrated by load test procedures as described in subdivision (a) of section 27-599 of article three of this subchapter.
(b) Unidentified materials may be graded by the recovery and test of representative samples, or by other means satisfactory to the commissioner.
(c) Used materials shall be considered to be graded where the grade is clearly indicated on the approved plans for the existing construction and may be used at the allowable stress levels for that grade of like material as established in the building code in force at the time the plans for the existing construction were approved.

§[C26-1000.10] 27-589 Equivalent systems of design. -
Nothing in this subchapter shall be construed to prohibit the use of any system of design, alternate to those indicated, provided that it can be demonstrated to the satisfaction of the commissioner that such system of design will provide a factor of safety against structural

failure consistent with the requirements of articles four through twelve of this subchapter, fire safety in consonance with the requirements of subchapters three through eight of this chapter, and such other characteristics pertinent to the safety of life, health, and property as prescribed in this subchapter or as may be required by the commissioner.

(a) Alternate or equivalent materials or methods of construction shall be subject to the provisions of section 27-133 of article seven of subchapter one of this chapter.

§[C26-1000.11] 27-590 Deferred detailing. -
Where structural elements are normally detailed on shop or working drawings, the application for the permit shall so state, and issuance of the permit shall be conditioned upon future submission of such shop or working drawings showing the approval of an architect or engineer with regard to such elements, or of a signed statement by an architect or engineer to the effect that such drawings were prepared to his or her satisfaction. In cases where the detailing of structural elements has been made on the basis of fire-resistance ratings, load tables, or similar data as given in manufacturer's catalogues, the application for approval of the plans shall so state and issuance of such acceptance shall be conditional upon submission of a statement by the manufacturer, or of other supporting documentary evidence of accreditation furnished by the manufacturer, attesting to the accuracy of the data and stating that such data were derived in conformance with the provisions of this code. Where the detailing of structural elements has been made on the basis of data published in technical documents of recognized authority issued by, or accredited by the agency or association promulgating the applicable reference standard cited in this code, such statements will not be required.

TABLE 10-1 INSPECTION OF MATERIALS AND ASSEMBLIES

Materials	Elements That Shall be Subject to Controlled Inspection [a,b,d]	Elements That Are Not Subject to Controlled Inspection [a,c,d]
Steel	None	All structural elements and connections.
Concrete	Materials for all structural elements proportioned on the basis of calculated stresses seventy per cent or greater, of basic allowable values. See article five for specific requirements relating to "quality control of materials and batching."	(1) All materials for structural elements proportioned on the basis of calculated stresses less than seventy percent of basic allowable values. (2) Concrete materials for: (a) Short span floor and roof construction proportioned as per section 27-610. (b) Walls and footings for buildings in occupancy group J-3. (3) Metal reinforcement.
Aluminum	None	All structural elements and connections.
Wood	None	All structural elements and connections.
Reinforced gypsum concrete	None	All structural elements.
Masonry	None	All structural elements.
Other	Requirements as may be established in other subchapters of this code or by the commisioner.	

Notes for Table 10-1:

[a] For general provisions relating to inspection see section 27-132.

[b] All structural materials and assemblies subject to controlled inspection shall be tested and/or inspected at their place of manufacture and evidence of compliance with the provisions of this subchapter shall be provided as stipulated in articles four through twelve.

[c] Mill, manufacturer's and supplier's inspection and test reports will be accepted as evidence of compliance with the provisions of this code for all structural materials and assemblies not subject to controlled inspection.

[d] Basic allowable stress values as referenced herein shall denote allowable stress value without increase for infrequent stress conditions as established in this code or in the applicable reference standard for the material or element in its proposed use.

ARTICLE 2 STRUCTURAL DESIGN-GENERAL REQUIREMENTS

§[C26-1001.1] 27-591 Stability. -Except as provided in article twelve of subchapter eleven of this chapter with regard to foundation elements, a building, or any element thereof shall be proportioned to provide a minimum factor of safety of 1.50 against failure by sliding or overturning. The required stability shall be provided solely by the dead load plus any permanent anchorages, which may be provided.

§[C26-1001.2] 27-592 Bracing. -Unless otherwise specified in the reference standards, members used to brace compression members shall be proportioned to resist an axial load of at least two percent of the total compressive design stress in the member braced, plus any transverse shear therein.

§[C26-1001.3] 27-593 Secondary stresses. –
Secondary stresses in trusses shall be considered and where of significant magnitude, their effects shall be provided for in the design.

§[C26-1001.4] 27-594 Combination of loads. -
Dead loads, live loads (including impact) and reduced live loads, where applicable, shall be considered as basic loads. Wind, earthquake, thermal forces, shrinkage, and unreduced live loads (where live load reduction is permitted by subchapter nine of this chapter) shall be considered as loads of infrequent occurrence. Members shall have adequate capacity to resist all applicable combinations of the loads listed in subchapter nine of this chapter, in accordance with the following:
***Local Law 17-1995.*
(a) Where design is based on allowable working stresses, the loads as described in subchapter nine of this chapter shall be multiplied by the following factors and the design shall be based on the resulting load values:
(1) For combinations of basic loads, only, the factor shall be 1.0, except that for the design of temporary structures (defined as a structure, which will be in place six months or less) the factor shall be 0.75.
(2) For any combination of one or more basic loads with any one load of infrequent occurrence, the factor shall be 0.75, except that for the design of temporary structures the factor shall be 0.67.
(3) For any combination of one or more basic loads with two or more loads of infrequent occurrence, the factor shall be 0.67.

Exception.—The provisions of reference standards RS 10-8 and RS 10-9 relating to increases of allowable unit stresses for short-time loading shall apply.
(b) Where design is based on ultimate strength criteria (including plastic design of steel structures and proportioning of suspended structures), the loads, as described in subchapter nine of this chapter shall be multiplied by the factors indicated in subdivision (e) of section 27-639 of article eleven of this subchapter and in the applicable reference standards. The design shall be based on the resulting load values.

Exceptions.—1. Where combinations of load for which factors are given in the reference standard include the load of wind (or earthquake) the design additionally shall consider combinations of load wherein each other of the loads of frequent* occurrence as listed in this paragraph are substituted for the load of wind.

2. The design also shall consider combinations of load wherein two most critical of the loads of infrequent occurrence are combined with the basic loads. For such combination, however, the factors indicated in the reference standards and in subdivision (e) of section 27-639 of article eleven of this subchapter for suspended structures, for the combination of basic loads plus one load of infrequent occurrence may be reduced fifteen percent.
***As enacted but "infrequent" probably intended.*

§[C26-1001.5] 27-595 Deflection limitations. -
The applicable provisions of the several reference standards cited in this subchapter shall apply. In addition, the total of the dead plus live load vertical deflections (including effects of creep and shrinkage) of members, supporting walls, veneered walls, or partitions constructed of or containing panels of masonry, glass, or other frangible materials shall not exceed 1/360 of the span.

ARTICLE 3 ADEQUACY OF THE STRUCTURAL DESIGN

§[C26-1002.1] 27-596 General. - The structural design of a member or assembly shall be deemed to be adequate if the design computations demonstrate conformance with the applicable standards noted in articles four through twelve of this subchapter. Where, because of practical difficulties, such computations cannot be executed, the structural design may be deemed adequate if the member or assembly is subjected to, and satisfactorily performs under, load tests in accordance with the provisions of subdivision (a) of section 27-599 of this article. Where there is a question as to the adequacy of a completed or partly completed construction, the provisions of section 27-597, 27-598 and subdivision (b) of section 27-599 of this article shall apply.

§[C26-1002.2] 27-597 Questionable construction. -
If, upon inspection, it is found that a construction or any part thereof, as built, shows open cracks, spallings, or other signs of distress; or should inspection records show more** significant deficiency of construction; or should laboratory tests on concrete or other materials that have been incorporated into the work indicate deficiency of strength; or should there be a reasonable doubt as to the strength, stability, or adequacy of the construction or any part thereof, such construction may be checked to verify the adequacy thereof either by computation, or by core or load tests conducted in accordance with the provisions of section 27-598 or subdivision (b) of section 27-599 of this article or by any combination of these means. Should the adequacy of construction not be verified within a reasonable time, such construction shall be rejected and shall be demolished or reinforced or rebuilt to be made safe in conformance with the requirements of this code. In the event of a disagreement, the final decision as to the acceptance of the work shall be made by the commissioner. All such tests shall be made without expense to the city.
***As enacted but "some" probably intended.*

TABLE 10-2 INSPECTION OF METHODS OF CONSTRUCTION

Materials	Operations on Structural Elements That Shall be Subject to Controlled Inspection [a,b,d]	Operations on Structural Elements That Are Not Subject to Controlled Inspection [a,c,d]
Steel	(1) Welding operations and the tensioning of high strength bolts in connections where the calculated stresses in the welds or bolts are fifty percent or more of basic allowable values. (2) Connection of fittings to wire cables for suspended structures, except where cables together with their attached fittings are proof-loaded to not less than fifty-five percent of ultimate capacity.	(1) Welding operations and the tensioning of high strength bolts in connections where the calculated stresses in the welds or bolts are less than fifty percent of basic allowable values. (2) All other fabrication and erection operations not designated for controlled inspection.
Concrete	Except for those operations specifically designated in this table are*** not subject to controlled inspection, for all concrete, the operations described in subdivision (a) of section 27-607 shall be subject to controlled inspecion.	(1) All operations relating to the construction of members and assemblies (other than prestressed members) which involve the placement of a total of less than fifty cubic yards of concrete and wherein said concrete is used at levels of calculated stress seventy percent or less of basic allowable values. (2) Placing and curing of concrete for all: (a) Short span floor and roof construction as per section 27-610. (b) Walls and footings for buildings in occupancy group J-3. (3) Size and location of reinforcement for walls and footings for buildings in occupancy group J-3. (4) All other operations not described in subdivision (a) of section 27-607.
Aluminum	Welding operations in connections where the calculated stresses in the welds are fifty percent or more of the basic allowable values.	(1) Welding operations in connections where the calculated stresses in the welds are less than fifty percent of basic allowable values. (2) All other fabrication and erection operations not designated for controlled inspection.
Wood	Fabrication of glued - laminated assemblies and of plywood components.	All other operations not designated for controlled inspection.
Reinforced Gypsum Concrete	None	All operations incident to the fabrication and placement of structural elements.
**Reinforced Masonry	(1) Fabrication of prefabricated units. (2) Placement and bedding of units, sizes of members, including thickness of walls and wythes; sizes of columns; the size and position of reinforcement, in place, and provisions for curing and protection against freezing for all reinforced masonry construction unless such operations are specifically not designated for controlled inspection.	**(1) All masonry work for buildings in occupancy group J-3. **(2) All mixing of mortar. **(3) All other operations not designated for controlled inspection.
**Un-Reinforced Masonry	Placement and bedding of units and sizes of members including thickness of walls and wythes; sizes of columns; and provisions for curing and protection against freezing for all masonry construction proportioned on the basis of structural analysis as described in section four of reference standard RS 10-1A*, unless such operations are specifically not designated for controlled inspection.	**(1) All masonry work for buildings in occupancy group J-3. **(2) All mixing of mortar. **(3) All other operations not designated for controlled inspection.
Piling	See provisions of subchapter eleven.	
Other	Requirments as may be established in other subchapters on this code.	

Notes for Table 10-2:

[a]For general provisions relating to inspection see section 27-132.

[b]All construction operations designated for controlled inspection shall be inspected by the architect or engineer designated for controlled inspection during the performance of such operation.

[c]Certification by the fabricator or erector, as applicable, will be accepted as evidence of compliance with the provisions of this code for all construction operations not subject to controlled inspection.

[d]Basic allowable stress values as referenced herein shall denote allowable stress value without increase for infrequent stress conditions as established in this code or in the applicable reference standard for the material or element in its proposed use.

**** "A" not enacted but probably intended***

*****Local Law 17-1995.***

****** "are"emacted "is" probably intended.***

§[C26-1002.3] 27-598 Core tests of concrete construction.- The adequacy of the concrete in a building may be ascertained by the recovery and testing of cores. Cores shall be taken and tested in accordance with the procedure described in reference standard RS 10-16. In lieu thereof, cores cast-in-place and originally cured with the parent concrete, or other device acceptable to the architect or engineer designated for controlled inspection and which will produce test specimens simulating the condition of the concrete in place including the size and proportions specified for core specimens may be utilized to demonstrate the adequacy of the concrete in place. The compressive strength so determined shall meet the requirements for strength tests as described in reference standard RS 10-3.

§[C26-1002.4] 27-599 Load tests. -

(a) Prequalifying load tests.- The provisions of this section shall apply only to load tests made for the purpose of establishing the structural adequacy of members or assemblies before such members or assemblies are incorporated into the work. Load tests for the purpose of establishing the strength of an element or assembly, in place, after construction, shall conform to the requirements of subdivision (b) of this section.

(1) TEST SPECIMENS. -The test specimens shall be a true representation of the units or assemblies to be used in the work and, unless sufficient tests are conducted on differing specimens to interpolate the performance of members of varying characteristics, test specimens shall be substantially identical with the units or assemblies to be used in service. Particular attention shall be given to matching the type and grade of material and, in the case of concrete, the mix, age, curing, and other pertinent variables.

(2) SUPPORT CONDITIONS AND INTERACTION.- Load tests shall be performed in such a manner that the supports for the members or assemblies being tested will simulate the conditions of support in the building, except that conditions of partial fixity may be approximated by condition of full or zero restraint, whichever produces a more severe stress condition in the member being tested. The test conditions shall be such as to obviate all interaction of fills, finishes, partitions, supports, or members whose interaction normally would be neglected in design. Where continuous, multiple, intersecting, or connected members are used in the test, all interacting members shall be simultaneously and fully loaded and additional tests shall be performed under the partial loading conditions specified in subchapter nine of this chapter. Test specimens shall not be unloaded and reloaded or subjected to cyclical loading, except as specifically required by the provisions of this code and except that the adding of increments of additional load to a member already under load and the application of the test load as described in subparagraph (b) of paragraph three of this subdivision following removal of the test load described in subparagraph (a) of paragraph three of this subdivision will be permitted.

(3) STRENGTH REQUIREMENTS. -The member or assembly, supported as described in paragraph two of this subdivision, shall be capable of supporting:

a. Without visible damage (other than hairline cracks) its own weight plus a test load equal to one hundred fifty percent of the design live load plus one hundred fifty percent of any dead load that will be added at the site; and

b. Without collapse, its own weight plus a test load equal to fifty percent of its own weight plus two hundred fifty percent of the design live load plus two hundred fifty percent of any dead load that will be added at the site. The latter loading shall remain in place for a minimum period of one week. All loading conditions described in subchapter nine of this chapter shall be considered. The design live load shall be the nominal value reduced for contributory area as described in subchapter nine. Except as permitted under paragraph five of this subdivision, units to be tested shall be full size. Load bearing wall and partition assemblies shall be tested both with and without window and door framing where such framing will be included in the final assemblies.

Exception: If the load tests are conducted and the results promulgated in a manner that will permit clear differentiation between the dead and live load components added at the site, then the capacity of the member or assembly without visible damage other than hairline cracks as determined under load test condition in subparagraph a of paragraph three of this subdivision, may be reduced to the weight of the member, plus any dead load that will be added at the site, plus one hundred fifty percent of the design live load; and the capacity of the member or assembly to resist collapse as determined under load test condition in subparagraph b of paragraph three of this subdivision may be reduced to one hundred fifty percent of the weight of the member, plus one hundred fifty percent of any dead load that will

be added at the site, plus two hundred fifty percent of the design live load.
(4) DEFLECTION REQUIREMENT. -With the member or assembly supported as described in paragraph two of this subdivision, and after loading as required by the provisions of subparagraph a of paragraph three of this subdivision and the removal of said load, the percentage of recovery of the deflection caused by the superimposed load shall be at least seventy-five percent. The deflection under the design live load shall not exceed that permitted in this subchapter.
(5) MODEL TESTS. -Tests on models less than full size may be used to determine the relative intensity, direction, and distribution of stresses and applied loads, but shall not be considered as a proper method for evaluating stresses in, nor the strength of, individual members unless approved by the commissioner for this purpose. Where model analysis is proposed as a means of establishing the structural design, the following conditions shall be met:
a. Analysis shall be made by a firm or a corporation satisfactory to the commissioner.
b. The similitude, scaling, and validity of the analysis shall be attested to by an officer or principal of the firm or corporation making the analysis.
c. A report on the analysis shall be submitted showing test set-ups, equipment, and readings.
(b) Load tests of completed construction.- The provisions of this subdivision shall apply to any type of construction where the appropriate reference standard does not provide for load test of completed construction and the construction is questionable. When the appropriate reference standard provides for such load testing, the provisions of reference standard shall be used.
(1) STRENGTH. -The construction shall be loaded in two stages:
(a) With all dead load to which it will be subjected in service plus a superimposed load equal to the design live load reduced as described in subchapter nine of this chapter; and
(b) With a total load, including its own weight, equal to one hundred fifty percent of the total dead load to be supported in service plus one hundred eighty percent of the design live load, reduced for contributory area as described in subchapter nine of this chapter, which load shall remain in place for a minimum period of twenty-four hours.
(2) DEFLECTION REQUIREMENT. -Under the first stage loading, the deflection shall not exceed that permitted in the applicable reference standard. The residual deflection after removal of the second stage loading shall not exceed twenty-five percent of the calculated elastic deflection under the superimposed test load. The structure, after recovery of the deflection shall not show any evidence of serious distress.
(3) INTERACTION.- The load area shall extend to include the loading of all framing and elements that contribute to the strength of the element or elements under test, by way of interaction.
(4) LATERAL LOADS.- Where the elements in question must resist lateral loads in service, such loads shall be simulated in the tests. In such case, the magnitude of the applied live load and lateral load components of the test load may be adjusted as described in section 27-594 of article two of this subchapter, provided that the stress condition under the load increments described in paragraph one of this subdivision is not more critical.
(5) RELOADING. -Unloading and reloading or cyclical loading of test areas will not be permitted, except for the addition of increments of additional load to a member already under load.
[(6) LIMITATION ON USE OF LOAD TESTS OF CONCRETE STRUCTURES. -Where the strength tests of the concrete (as defined in reference standard RS 10-3) that initiate the requirement for load tests show strengths less than 2/3 of the strength required by the design of the specific element, the use of load tests to show the adequacy of the structure will not be permitted.]*
Copy in brackets not enacted but probably intended.

ARTICLE 4 MASONRY

§[C26-1003.1] 27-600 General requirements. -
(a) Unreinforced masonry. - Materials, design, and construction of unreinforced masonry shall meet the requirements of reference standard RS 10-1.
(b) Reinforced masonry. - Materials, design, and construction of reinforced masonry shall meet the requirements of reference standard RS 10-2.

§[C26-1003.2] 27-601 Identification. -
(a) Masonry units. -Masonry units shall be clearly identified to show the grade of the unit and the compressive strength where called for on the plans.
(b) Metal reinforcement.- Reinforcing bars shall be rolled so as to identify the grade of steel and the size. Bundles and rolls of cold-drawn steel wire or welded wire fabric shall be tagged so as to identify the type and grade of steel and the size.

§[C26-1003.3] 27-602 Inspection. -The inspection of masonry and masonry construction shall conform to the requirements of tables 10-1 and 10-2.

ARTICLE 5 CONCRETE

***§[C26-1004.1] 27-603 General requirements**. -
Concrete materials, design, construction, quality, inspection and testing shall meet the requirements of reference standard RS 10-3. Precast concrete construction utilizing a thin skin or slab stiffened or supported by a system of ribs shall conform to the requirements of reference standard RS 10-4.
Local Law 65-1990.

§[C26-1004.2] 27-604 Identification of metal-reinforcement.-
Reinforcing bars shall be rolled so as to identify type and grade of steel, and size. Bundles and rolls of wire,

strands, or welded wire fabric shall be tagged so as to identify the type and grade of steel and the size.

***§[C26-1004.3] 27-605 Mixes.**- Concrete may be proportioned, batched, and mixed by any of the following methods:

Local Law 65-1990.

(a) Method I. -Mixes with Minimum Cement Content. -

(1) MINIMUM CEMENT CONTENT. -The cement content used in the work shall not be less than the content given in table 10-3 for the corresponding strength of concrete.

(2) WATER-CEMENT OR STRENGTH-CEMENT RATIO.- Normal weight concrete proportioned on the basis of preliminary tests shall be produced by using a water-cement ratio corresponding to a point on a strength-cement or water-cement ratio curve. Proportioning of lightweight and heavyweight concrete, and concrete using an aggregate other than natural sand, gravel or stone shall be by using a strength-cement content curve. The point on the respective curves shall represent a strength of concrete at the slump and age called for on the plans at least twenty-five percent higher than the specified strength, f'c. The cement content shall not be less than the content shown in table 10-3.

(3) PRELIMINARY TESTS. -Preliminary tests of concrete shall be made in advance of any concreting operation by a licensed concrete testing laboratory acceptable to the architect or engineer of record. Preliminary tests shall consist of compression strength tests of molded concrete cylinders made in accordance with reference standards RS 10-17 and RS 10-21. A curve representing the relation between the average strength of the concrete at twenty-eight days, or at any other specified age filed with the department, and the strength-cement ratio or the water-cement ratio shall be established for the range of strength values at the slump required for the work. The tests shall include at least four mixes with different strength-cement ratios or four mixes with different water-cement ratios and at least four cylinder specimens for each mix. The cylinder strength tests shall be supplemented by tests to confirm that the cement and aggregates conform to the provisions of reference standard RS 10-3.

(4) PREVIOUSLY ACCEPTED MIXES. -In lieu of the requirements of paragraph three of this subdivision, the architect or engineer designated for controlled inspection may permit the use of mix proportions of aggregates having the same specific gravity, size and gradation; cements of the same type and batch weight; admixtures of the same type and quantity; and other ingredients the same as or equal to those that have been previously submitted with applicable preliminary tests which complied with paragraphs one and two of this subdivision, and which have been accepted by the commissioner within the past year. If any of the mix proportions or ingredients are changed, a separate submission for acceptance shall be required.

(5) QUALITY CONTROL AND INSPECTION OF MATERIALS AND OF BATCHING. -Where concrete materials are used for structural elements defined in section 27-585 of article one of this subchapter, quality control and inspection shall be provided at the batch plant by a licensed concrete testing laboratory under the supervision of the architect or engineer designated for controlled inspection, in accordance with the requirements of table 10-1 and in sufficient scope to:

a. Determine and record the actual batched weights of the ingredients and the volume of water charged into the mixer;

b. Verify that such weights conform to the weights and proportions required by the preliminary test mix, adjusted for moisture content, fineness modulus and gradation of aggregates;

c. Verify conformance of the quality and condition of the materials to reference standard RS 10-3;

d. Verify that the aggregates have the same specific gravity, size and gradation; the cement is the same type and batch weight, the admixtures are the same type and quantity; and that any other ingredients are the same as or equal to those used for the preparation of the preliminary test mixes;

e. For all concrete, whether or not designated for controlled inspection, attestation of the results of quality control and inspection at the batch plant shall appear on a ticket accompanying each load of concrete. The attestation for subparagraphs a, b, c and d of this paragraph shall be executed by the licensed concrete testing laboratory.

f. The licensed concrete testing laboratory shall also attest that the slump entrained air content and unit weight of the fresh concrete, as discharged from the mixer at the job site, were tested in accordance with reference standards RS 10-49, RS 10-51, RS 10-52, RS 10-61, RS 10-62, RS 10-63 and RS 10-64, and that all were in compliance with the accepted mix design.

(b) Method II. -Proportioning on the basis of field experience. -

(1) PROPORTIONING. -For the computation of the standard deviation in accordance with reference standard RS 10-14, mixes with test data from previous projects, similarly proportioned in accordance with the provisions of subdivision (a) of this section, and having materials of similar density and admixtures and having a slump equal to or greater than that at which the concrete is to be placed shall be used. Such mixes may be accepted subject to the approval of the architect or engineer designated for controlled inspection.

(2) STRENGTH. -The required average strength, f ’c [*sic*], to be used as the basis for the selection of mix proportions, shall in no case be less than fifteen percent higher than the specified strength called for on the plans.

(3) BATCHING. -The concrete shall be produced either in the concrete production facility used to produce the concrete from which the tests were made to develop the field experience data referred to in paragraph one of this subdivision or, subject to the approval of the architect or engineer designated for controlled inspection, in any concrete production facility that has data showing a record of standard deviation equal to or less than that of the original facility. All concrete proportioned according to field experience shall be produced in a plant with automatic recording equipment for all ingredients.

(4) QUALITY CONTROL AND INSPECTION OF MATERIALS AND OF BATCHING. - When the concrete is batched in a plant where automatic recording

equipment documents the batched weights or volumes of cement, aggregates, admixtures and water, no inspection of the materials or of the batching, nor any attestation by a licensed concrete testing laboratory responsible to the architect or engineer designated for controlled inspection, shall be required. A concrete producer shall:

a. Verify that such weights conform to the required weights and proportions, and to the strength-cement ratio or water-cement ratio required by the proportioning established pursuant to paragraph one of this subdivision, adjusted for moisture content, fineness modules and gradation of aggregates.

b. Verify conformance of the quality and condition of the materials to reference standard RS 10-3.

c. Attest, on a ticket accompanying each load, to the specified strength of the concrete, the actual weights or volume of the ingredients, and the weight or volume of water charged into the mixer at the batch plant or to be added at the job site. A statement that subparagraph b of this paragraph has been complied with shall also be included.

d. If at any time the automatic recording equipment becomes inoperative, the concrete production facility may be permitted, but only with the approval of the architect or engineer designated for controlled inspection, to batch and mix concrete for a period not to exceed three consecutive working days. During such a period, the concrete production facility shall engage a concrete batch plant inspector from a licensed concrete testing laboratory to observe and record the actual weights of the cement, aggregates, admixtures and other ingredients, and the weight or volume of water charged into the mixers. If the automatic recording equipment is inoperative for a period longer than three consecutive working days the concrete production facility shall not batch or mix concrete and the architect or engineer designated for controlled inspection shall notify the commissioner in writing that such equipment is inoperative.

***TABLE 10-3 MINIMUM CEMENT CONTENT**

Specified Compressive Strength in 28 Days (f'c)-psi	Minimum Pounds of Cement Per Cubic Yard of Concrete (all aggregates)
3,000	540
3,500	610
4,000	660
5,000	800
Over 5,000	Permitted only by reference standard RS 10-3
6,000 and over	Permitted only by reference standard RS 10-3 "Special Requirements for High Strength Concrete."

NOTE: Minimum pounds of cement may be reduced up to 8 percent by the addition of an accepted admixture.
Local Law 65-1990.

(c) Method III. -Average concrete. -

(1) in lieu of making preliminary tests, average concrete limited to the concrete strengths shown in table 10-3A below may be used, and the cement content shall not be less than the value given in table 10-3A for the corresponding specified compressive strengths, nor shall the total volume of water (moisture plus added water) exceed that specified therein, provided that the total yardage placed does not exceed fifty cubic yards and the levels of calculated stress do not exceed seventy percent of the basic allowable stresses.

***TABLE 10-3A**

Specified compressive strength in twenty-eight days (f'c) pounds per square inch	Minimum pounds of cement per cubic yard of concrete	Maximum permissible total volume of water, U.S. gallons per cubic yard of concrete
2000	520	40
2500	560	41
3000	610	42

Local Law 65-1990.

(2) Each load of concrete shall be certified by the producer to the owner, whether produced at a ready mixed plant or site mixed, as to the total quantity of concrete, concrete strength and actual quantities per cubic yard of each material, including water, contained therein. A copy of such certificate shall be available to the department during the progress of the work and for two years thereafter.

***§[C26-1004.4] 27-606 Documentation.-** All mix proportions and supporting data shall be submitted for acceptance to the commissioner or to the architect or engineer designated for controlled inspection, as required, prior to the start of any work. All required attestations shall become a part of the documentation to be filed with the commissioner, and shall be subject to verification by strength tests, as hereinafter described, by check sampling of ingredients, or by such other inspections as the commissioner or the architect or engineer designated for controlled inspection may elect. Copies of all documentation filed with the commissioner, all the licensed concrete testing laboratory test data and required attestations, together with the tapes recording the batch weight where automatic recording equipment is used shall be available for inspection for a period of two years after the completion of the project. Such records shall be maintained by the architect or engineer designated for controlled inspection.
Local Law 65-1990.

***§[C26-1004.5] 27-607 Inspections. -** Inspection of concrete and concrete construction shall conform to the requirements of tables 10-1 and 10-2 and the provisions of this subchapter.

(a) Controlled inspection. - Controlled inspection of concrete construction shall include:

(1) STRENGTH TESTS. - Strength tests shall be performed on all structural concrete. The provisions of reference standard RS 10-3 shall apply. A licensed concrete testing laboratory shall, in compliance with reference standards RS 10-17, RS 10-51 and RS 10-52, sample the concrete, make and cure the test specimens at the job site, transport the specimens to the laboratory and test the specimens for compressive strength. Written reports of the results shall be furnished to the architect or engineer designated for controlled inspection and to the concrete producer immediately, but not more than five days following the conclusion of the compression strength tests. Test specimens shall be stored on the job site in an insulated curing box of sufficient size and strength to contain all the specimens made in any four consecutive working days and to protect the specimens from falling over, being jarred or otherwise disturbed during the period of initial curing. The box shall be erected, furnished and maintained by the concrete contractor. Such box shall be equipped to provide the moisture and to regulate the temperature necessary to maintain the proper curing conditions required by reference standard RS 10-52. Such box shall be located in an area free from vibration such as pile driving and traffic of all kinds. No concrete requiring inspection shall be delivered to the site until such storage curing box has been provided. Specimens shall remain undisturbed in the curing box until ready for delivery to the testing laboratory but not less than sixteen hours. Specimens delivered to the laboratory prior to an age of forty-eight hours shall not be demolded prior to delivery. All specimens shall be carefully removed from the box and transported to the laboratory by the licensed concrete testing laboratory in accordance with the provisions of reference standard RS 10-52. All specimens shall be delivered to the laboratory before the laboratory closes at the end of the second working day following the day the specimens were molded. The date of arrival at the laboratory shall be recorded on the specimen test reports. All concrete failing to meet the specified minimum strength requirements shall be rejected by the architect or engineer designated for controlled inspection pending verification of the adequacy of the construction as described in section 27-598 of article three of this subchapter.

(2) ADDITIONAL TESTS. -Each sample of fresh concrete made in accordance with reference standard RS 10-51 for the purpose of molding strength test specimens shall be made under the supervision of the architect or engineer designated for controlled inspection. Each sample shall be tested by the licensed concrete testing laboratory to determine its slump in accordance with reference standard RS 10-49, its entrained air content in accordance with reference standards RS 10-61 and RS 10-62, its unit weight in accordance with reference standards RS 10-63 and RS 10-64 and its temperature. If any of the tests fail to meet the specified requirements, the concrete shall be sampled again and the particular test that failed shall be repeated. If the second test fails to meet the specified requirements, then, with the approval of the architect or engineer designated for controlled inspection, adjustments shall be made to the concrete in the mixer to correct the deficiency. Test specimens shall not be molded from any sample that did not meet the specified requirements nor shall the concrete from which the sample was taken be placed in the structure, provided, however, that such concrete may be used elsewhere in the work where it meets or exceeds the specified requirements, but only with the approval of the architect or engineer designated for controlled inspection. In such case, test specimens shall be molded by the licensed concrete testing laboratory, which shall also record the precise location where the concrete was placed in the structure.

(3) CONTROLLED INSPECTION LOG BOOK. - A controlled inspection log book, limited solely to the concrete construction work, readily available to inspectors and representatives of the department, concrete suppliers and the architect and/or engineer of record, shall be maintained at the job site by the architect or engineer designated for controlled inspection, who shall make therein daily entries pertaining to the progress of the work. The entries shall describe, but not be limited to, the location, size and dimensions of the concrete members for which forms were constructed that day; the reinforcement installed in, and the specific locations and time spans of, every concrete placement; the air temperature, wind velocity and direction and other weather conditions during the twenty-four hours after concrete has been placed, specifically at 8 a.m., noon and four p.m., the protections taken against excessive temperatures and adverse weather conditions at each placement made that day; the method used, to cure the concrete and the period during which such methods were maintained; the actual hour when forms were stripped and shores were reinstalled and tensioning was applied to all prestressed members. The log shall become a part of the documentation to be filed with the commissioner as provided in section 27-606 and shall include the attestation of the architect or engineer designated for controlled inspection that the concrete construction work complies with the approved plans and the provisions of this code.

(b) Other required inspection. -Quality control or inspection shall be provided with respect to all operations of mixing and placing concrete and reinforcement that are not designated for controlled inspection. In the case of sidewalks, curbs, paving, slabs-on-grade and any work designated in table 10-1 under the caption "Elements That Are Not Subject To Controlled Inspection" or in table 10-2 under the caption "Operations on Structural Elements That Are Not Subject to Controlled Inspection," all inspections shall be subject to and in accordance with the requirements of subdivision (b) of section 27-132. If any test to determine the quality or compressive strength of the concrete is required, the fresh concrete shall be sampled and tested for slump, entrained air content, unit

weight and temperature. Compression strength test specimens shall be molded only by a licensed concrete testing laboratory or by a person certified by the American Concrete Institute as qualified to perform such function. Attestation shall be executed by the person superintending the use of the material in accordance with the requirements of subdivision (b) of section 27-132 of article seven of subchapter one of this chapter.
Local Law 65-1990.

***§[C26-1004.6] 27-608 Admixtures. -**Admixtures may be used in the concrete only where included in the preliminary test mixes made in accordance with paragraph three of subdivision (a) of section 27-605 or mixes proportioned in accordance with the provisions of reference standard RS 10-3. In the case of mixes proportioned in accordance with subdivision (c) of section 27-605, there shall be no reduction of the cement content called for in table 10-3A because admixtures are used in the mix. Where admixtures are used, the provisions of reference standards RS 10-3 and RS 10-44 shall apply. In addition, no anti-freeze agents shall be used. Admixtures shall be added in measured quantities in conformance with the accepted mix design.
Local Law 65-1990.

***§[C26-1004.7] 27-609 Licensed concrete testing laboratories.-** All strength tests of concrete and testing of concrete materials required by the provisions of this section shall be performed by concrete testing laboratories licensed in accordance with the requirements of article nine of subchapter two of chapter one of title twenty-six of the administrative code and rules promulgated by the commissioner. The licensed concrete testing laboratory shall, among other things, analyze, evaluate and test concrete materials; determine whether the materials comply with specifications and pertinent referenced national standards in reference standard RS 10-3; select mix proportions for preliminary tests; recommend the mix proportions to be used on the project for which the tests were made; analyze data from previous projects and compute the standard deviation; and recommend the mix proportions to be used based on such field experience data. At the batch plant or at the job site, the licensed concrete testing laboratory shall, among other things, sample concrete and test for slump, entrained air content, unit weight and temperature, mold compression test specimens; store and cure such specimens on the job site; remove, transport and deliver such specimens to the laboratory; demold, store, cure, cap and test such specimens at the laboratory and furnish written reports of the results of all tests of the materials and concrete to the architect or engineer designated for controlled inspection and to the concrete producer. When tests of the hardened concrete are required, they shall be made by the licensed concrete testing laboratory in accordance with reference standard RS 10-3 and the national standards for making tests for penetration resistance, rebound number, pullout strength and of drilled cores. The architect or engineer designated for controlled inspection is authorized either to dismiss or to employ a particular licensed concrete testing laboratory at any time during the progress of the work.
Local Law 65-1990.

§[C26-1004.8] 27-610 Short-span concrete floor and roof construction supported on steel beams. -In lieu of analysis, the following empirical procedures may be used for the design of short-span concrete floor and roof slabs containing draped reinforcement and supported on steel beams. The empirical equations described in subdivisions (c) and (d) of this section shall apply only where the steel beams are placed, or are encased, in a manner that will provide section for the transfer of shear from slabs to beams equivalent to, or in excess of, the slab thickness required by said equations.
(a) Concrete.- The concrete shall have a minimum compressive strength at twenty-eight days of seven hundred psi.
(b) Reinforcement. -Reinforcement shall consist of steel fabric, rods, or other suitable shapes that shall be continuous or successively lapped to function as a continuous sheet. The main reinforcement shall be at least 0.15% of the gross cross section where continuous steel fabric is used and at least 0.25% of the gross cross section where other forms of steel reinforcement are used. All reinforcing shall be draped, with the center of the reinforcement at the center of the span one inch above the bottom of the slab and the center of reinforcement over the support one inch below the top of the slab.
(c) Minimum slab thickness. -The minimum total thickness of concrete floor and roof construction shall be determined by the following formula, but shall not be less than four inches:

$$t = \frac{L}{2} + \frac{w - 75}{200}$$

Where: t = total thickness (in.)
L = clear span between steel flanges (ft.)
W = gross uniform load (dead load plus reduced live load) (psf).
(d) Allowable load.- The allowable load shall be determined by the following formula:

$$w = \frac{3CA_s}{L^2}$$

Where: w = gross uniform load (psf)
A_S = cross sectional area of main reinforcement (sq. in. per ft. of slab width)
L = clear span between steel flanges in feet. (L shall not exceed ten feet in any case, and when the gross floor load exceeds two hund-red psi shall not exceed eight feet)
C = the following coefficient for steel having an ultimate strength of at least fifty-five thousand psi;

1. For lightweight aggregate concrete:
a. twenty thousand when reinforcement is continuous.
b. fourteen thousand when reinforcement is hooked or attached to one or both supports.
2. For stone concrete:
a. twenty-three thousand when reinforcement is continuous.
b. fifteen thousand when reinforcement is hooked or attached to one or both supports.
(1) When the above formula is used the reinforcement shall be hooked or attached to one or both supports or be continuous.
(2) If steel of an ultimate strength in excess of fifty-five thousand psi is used, the above coefficient may be increased in the ratio of the ultimate strength to fifty-five thousand but at most by thirty percent.

(e) Openings in floors and roofs. -Openings more than one foot six inches on a side shall be framed. All areas encompassing multiple openings aggregating more than one foot six inches in any ten foot width or span of floor or roof slab shall be framed.

§[C26-1004.9] 27-611 Pneumatically placed concrete.- Construction methods shall conform to the applicable provisions and recommendations of reference standard RS 10-15.

***§27-611.1 Conveying concrete by pumping methods.-** All classes and strengths of concrete may be conveyed by pumping methods. All materials and methods used shall conform to the rules promulgated by the commissioner for conveying concrete by pumping methods.
Local Law 65-1990.

***§[C26-1004.10] 27-612 Formwork, slip form construction, lift method construction, precast and prestressed construction.**- The provisions of subchapter nineteen of this chapter shall apply.
Local Law 65-1990.

§[C26-1004.11] 27-613 Concrete utilizing preplaced aggregate. -The use of concrete formed by the injection of grout into a mass of preplaced coarse aggregate will be permitted where it can be demonstrated by successful prototype installation that the proposed mix, materials, and method of placement will produce a concrete of the specified strength and free of areas or inclusions of uncemented aggregate.

(a) Prototypes. -At least two prototypes, from either previous work or samples prepared for the proposed project shall be prepared. The forms shall be stripped, and a minimum of six cores recovered and tested to demonstrate the strength of the concrete produced by the proposed materials and methods of installation. In addition, the homogeneity of the prototypes shall be demonstrated by demolishing the prototypes.

(b) In-place concrete. -The concrete, as finally placed in the work, shall be prepared using the same materials, mix, equipment, and procedures utilized to prepare the successful prototype installations.

***(c) Inspection.** -All preparation and placement of structural concrete utilizing preplaced aggregates shall be subject to controlled inspection. Compression test specimens shall be prepared and tested as required for premixed concrete, except that the specimens shall be prepared under conditions that will simulate the conditions under which the concrete in the work is installed.
Local Law 65-1990.

***§27-613.1 Precast and prestressed concrete. –** The provisions of reference standard RS 10-3 shall apply.
Local Law 65-1990.

***§27-613.2 Thin-section precast concrete construction.-** The provisions of reference standard RS 10-4 shall apply.
Local Law 65-1990.

ARTICLE 6 STEEL

§[C26-1005.1] 27-614 General requirements. -Materials, design, and construction methods shall meet the requirements of the following reference standards:

(a) Structural steel. -Reference standard RS 10-5.

(b) Light gage [*sic*] cold formed steel. - Reference standard RS 10-6.

****(c) Open web steel joists.- Reference standard RS 10-7.** The commissioner shall amend RS 10-7 to establish minimum acceptable fireproofing methods for open web steel joists and to redefine the limitations or restrictions on the buildings or occupancies in which the use of open web steel joists shall be permitted.
****Local Law 26-2004.***

§[C26-1005.2] 27-615 Identification. -Structural steel that is required to have a minimum yield point greater than thirty-six thousand psi shall at all times in the fabricator's plant, be marked, segregated, or otherwise handled so that the separate alloys and tempers are positively identified, and after completion of fabrication, shall be marked to identify the alloy and temper. Such markings shall be affixed to completed members and assemblies or to boxed or bundled shipments of multiple units prior to shipment from the fabricator's plant. Open web steel joists shall have identification affixed to each bundle or lift showing size and type.

§[C26-1005.3] 27-616 Quality control. -

(a) Reference.- The provisions of tables 10-1 and 10-2 shall apply.

(b) Welding operations. -

(1) Welding work shall be performed only by persons who have obtained a license from the commissioner.

(2) Where manual welding work is not performed in the city of New York, welds shall be made by welders qualified under the provisions of appendix D, parts II and III, of the AWS code for welding in building construction. Qualification with any of the steels permitted by the AWS code shall be considered as qualification to weld any of the other steels permitted by the code.

(3) Tack welds, which are later incorporated into finished welds carrying calculated stress, shall not be considered as structural welds.
(4) The inspection of welding operations stipulated in table 10-2 shall include a check to ascertain that the welders employed on the work have the required license or who are qualified in accordance with paragraph two of this subdivision.

ARTICLE 7 WOOD

§[C26-1006.1] 27-617 General Requirements. -
Materials (other than non-stress grade lumber), design, and construction methods shall meet the requirements of the following reference standards:
(a) Lumber and timber. -Reference standard RS 10-8.
(b) Plywood. -Reference standard RS 10-9.
(c) Structural glued-laminated lumber. -Reference standard RS 10-18.

§[C26-1006.2] 27-618 Identification.-
Except as provided for in subdivisions (a) and (c) of this section, all wood used for structural elements shall be identified as to grade and shall bear an identifying mark of an approved bureau or agency performing the grading, or the official grade mark and trade mark of the bureau or association under whose rules the wood was graded, in accordance with the following:
(a) Lumber and timber. -All lumber and timber, including non-stress grade lumber, shall be identified by the grade mark of a lumber grading or inspection bureau or agency approved by the commissioner, except that pre-cut material and rough-sawn lumber may be covered by a certificate of inspection issued by a lumber grading or inspection agency approved by the commissioner in lieu of grade marking.
(b) Plywood. -Plywood used structurally shall bear identification as to grade, type, and species group, or identification index. Such identification shall be affixed by and identified by the trademarks of a testing and grading agency approved by the commissioner.
(c) Glued-laminated.- Glued-laminated structural members shall bear identification and/or shall be accompanied by certification in accordance with the provisions of reference standard RS 10-18.
(d) Resawn lumber. -Resawn (or reused) lumber shall be marked in accordance with its regraded status.

§[C26-1006.3] 27-619 Use of non-stress grade wood.-
The use of non-stress grade wood in structural elements shall be limited to the following conditions:
(a) Studs, joists, and rafters proportioned on the basis of the empirical provisions of section 27-622 of this article.
(b) The architect or engineer responsible for the design may assign an allowable stress value for the proposed material based on the provisions of reference standard RS 10-8 relating to "other species and grade." Under such condition, the required species and grade of wood, together with the assigned stress value, shall be conspicuously indicated on the plans.

§[C26-1006.4] 27-620 Quality control. -Inspection of the fabrication of glued-laminated assemblies, as stipulated in table 10-2, shall include a check of sizes of members, of fit, and of gluing operations.

§[C26-1006.5] 27-621 General construction requirements.-
The provisions of this section shall be considered as supplemental to the provisions of the applicable reference standards.
(a) Firecutting. -The ends of wood beams, joists, and rafters resting on masonry or concrete walls shall be firecut to a bevel of three inches in their depth.
(b) Protection of members. -
(1) Positive drainage shall be provided for all areas under the building not occupied by basements or cellars.
(2) All loose wood and debris and all wood forms shall be removed from spaces under the building. All stumps and roots shall be grubbed to a minimum depth of twelve inches.
(3) Wood members embedded in the ground and used for the support of buildings shall be treated.
(4) Wood joists or wood structural floors closer than eighteen inches, wood girders closer than twelve inches, or sills closer than eight inches to an exposed ground surface within or without the building shall be treated or shall be of an equivalent resistant species.
(5) Sleepers, sills, columns, and posts supported on concrete or masonry piers shall be treated or shall be of an equivalent resistant species unless isolated from the ground as specified in paragraph four of this subdivision or by a concrete slab. Where the isolation consists of a concrete slab-on-grade, the sleepers, sills, columns, or posts shall be raised at least three inches above the top of such slab.
(6) Ends of wood girders entering masonry or concrete walls shall be provided with a minimum one-half inch air space on top, sides, and at the end, unless the girder is treated or is of an equivalent resistant species.
(7) Wood or plywood used as siding or a combination of siding and sheathing shall be isolated from exposed ground by at least six inches.
(8) Crawl spaces shall be ventilated as required in subchapter twelve of this chapter.
(9) Where treated timber is required, the preservative treatment shall comply with reference standards RS 10-20 and RS 10-22. Treatment of wood poles shall comply with reference standard RS 10-28. All treated wood shall be handled in accordance with the provisions of reference standard RS 10-29.

§[C26-1006.6] 27-622 Empirical provisions in lieu of design. -The provisions of this section may be used in lieu of structural analysis only for those buildings in

occupancy group J-3 where the specific occupancies correspond to a live load requirement of forty psf, or less, and to constructions wherein the supporting framing consists of multiple, closely spaced members, such as joists, studs, platform or balloon frames. All wood structural members in other classes of construction shall be proportioned on the basis of the analysis of stresses. All requirements established in this section may be reduced when an analysis of stresses, executed in accordance with reference standard RS 10-8, indicates such reduction is feasible. Sizes of wood members stated in this section are nominal sizes.

(a) Stud walls and partitions. -

(1) Studs shall be of equivalent or better grade than the minimum grades for the various species as established in reference standard RS 10-13.

(2) Corner posts shall be 3-stud members or members of equivalent strength.

(3) Load bearing studs shall be set with the larger cross section dimension perpendicular to the wall or partition. Studs in exterior walls of one story buildings of construction class II-D and II-E shall be at least two inches by three inches spaced not more than sixteen inches on center, or where studs are two inches by four inches, spaced not more than twenty-four inches on center. Studs for other classes of construction shall be at least two inches by four inches spaced not more than sixteen inches on center.

(4) Stud walls resting on concrete or masonry shall have sills at least two inches in nominal thickness. Where such sills bear on concrete, they shall be fastened with minimum one-half inch bolts embedded at least six inches. Each sill piece shall have at least two anchor bolts, with one bolt located at least one inch from each end of the plate, and with intermediate spacing not more than eight feet. Where such sills bear on masonry, they shall be anchored in accordance with the applicable provisions of reference standard RS 10-1.

(5) Stud partitions that rest directly over each other and are not parallel to floor joists or beams may extend down between the joists and rest on the top plate of the partition, partition girder, or foundation below, or may be constructed on sill plates running on top of the beams or joists.

(6) All load bearing stud partitions shall be supported on walls, other partitions, double joists or beams, solid bridging, or on beams at least as wide as the studs. Joists supporting a partition parallel to the joists wherein the joists are spaced apart to permit the passage of piping or duct work shall be provided with solid blocking at intervals of not more than sixteen inches.

(7) Load bearing partitions perpendicular to joists shall not be offset from supporting girders, walls, or partitions by more than the depth of the joists unless the joists are proportioned on the basis of analysis of stress.

(8) In interior walls and in bearing partitions, double studs shall be provided at the sides of openings that are greater than three feet six inches up to six feet in width, and triple-studs shall be provided at the sides of openings of greater width.

(9) Headers shall be provided over each opening in exterior walls and bearing partitions. Where the opening does not exceed three feet, each end of the header shall be supported on a stud or framing anchor. Where the opening exceeds three feet in width each end of the header shall be supported on one stud and where the opening exceeds six feet each end shall be supported on two studs.

(10) All studs in exterior walls and in bearing partitions shall be capped with double top plates installed to provide overlapping at corners and at intersections with other walls and bearing partitions. End joists in double top plates shall be offset at least twenty-four inches. In lieu of double top plates, a continuous header of similar dimensions may be used. For platform frame construction, studs shall rest on a single bottom plate.

(b) Bracing of exterior walls. -Exterior stud walls shall be braced by one inch by four inch continuous diagonal strips let into the face of the studs and into the top and bottom plates at each corner of the building. Bracing may also be provided by one of the following means:

(1) Wood board sheathing of one inch nominal thickness, applied diagonally.

(2) For one and two-story dwellings, plywood sheathing at least four feet by eight feet (except where cut to fit around openings and for similar purposes) and at least five-sixteenths of an inch thick on studs spaced sixteen inches or less on centers and at least three-eighths of an inch thick on studs spaced more than sixteen inches but not exceeding twenty-four inches on centers.

(3) For one story dwellings and for the upper story of two story dwellings, fiberboard sheathing applied vertically in panels at least four feet by eight feet (except where cut to fit around openings and for similar purposes). Fiberboard sheathing shall be at least one-half inch thick and shall conform to the provisions of reference standard RS 10-27.

(4) For one story dwellings and for the upper story of two story dwellings, gypsum board sheathing applied horizontally in panels at least two feet by eight feet (except where cut to fit around openings and for similar purposes). Gypsum boards shall be at least one-half inch thick and shall conform to the provisions of reference standard RS 10-19.

(c) Floor and roof framing. -

(1) SPAN TABLES. -Joists and rafters may be used in accordance with reference standard RS 10-13.

(2) BRIDGING. -In all floor and roof and roof framing, there shall be at least one line of bridging for each eight feet of span. The bridging shall consist of at least one inch by three inch lumber or equivalent metal bracing. A line of bridging or solid blocking shall also be required at supports unless lateral support is provided by nailing to a beam, header, or to the studs. Midspan

bridging is not required for floor or roof framing in one- and two-family dwellings where joist depth does not exceed twelve inches. Bridging shall bear securely against and be anchored to the members to be braced.

(3) NOTCHES. -Notches in the ends of joists and rafters shall not exceed one-fourth the depth unless adequate reinforcement is provided or analysis of stresses indicates that larger openings are feasible without the necessity for reinforcement. Notches in joists or rafters, located in the span shall not exceed one-sixth the depth and shall not be located in the middle third of the span. Bored holes shall not be within two inches of the top or bottom of the joists or rafter and the diameter of any such hole shall not exceed one-third the depth. For stair stringers, the minimum effective depth of the wood at any notch shall be three and one-half inches unless the stringer is continuously supported on a wall or partition.

(4) SUPPORT. -

a. Floor or roof framing may be supported on stud partitions.

b. Tail beams over twelve feet long and all header and trimmer beams over six feet long shall be hung in metal stirrups having anchors, or by other methods providing adequate support. Trimmers and headers shall be doubled where the header is four feet or more in length.

c. Except where supported on a one inch by four inch ribbon strip and nailed to the adjoining stud, the ends of floor joists shall have at least one and one-half inches of bearing on wood or metal, nor less than four inches on masonry.

d. Joists framing from opposite sides of and supported on a beam, girder, or partition shall be lapped at least four inches and fastened, butted end-to-end and tied by metal straps or dogs, or otherwise tied together in a manner providing adequate support.

e. Joists framing into the side of a wood girder shall be supported by framing anchors, on ledger strips at least two inches by two inches, or by equivalent methods.

f. Wood joists and rafters bearing on masonry walls shall be anchored to such walls in accordance with the applicable provisions of reference standard RS 10-1.

(5) RAFTERS AND CEILING JOISTS. -

a. Where rafters meet to form a ridge, they shall be placed directly opposite each other and nailed to a ridge board at least one inch thick, and not less than the cut end of the rafters in depth.

b. Provisions shall be made to resist the thrust from inclined rafters by connection of collar beams at least one inch by six inches, by connection to joists, or by equivalent means.

c. Where ceiling joists are not parallel to rafters, subflooring or metal straps attached to the ends of the rafters shall be installed in a manner to provide a continuous tie across the building.

d. Ceiling joists shall be continuous, or where they meet over interior partitions, shall be securely joined to provide a continuous tie across the building.

e. Valley rafters shall be double members. Hip rafters may be single members. Valley and hip rafters shall be two inches deeper than jack rafters.

f. Trussed rafters shall be designed in accordance with the provisions of reference standard RS 10-8.

(6) Built-up members shall be securely spiked or bolted together and provision shall be made to resist the horizontal shear between laminations.

(d) Nailing schedule. -The size and number of nails for connections shall be in accordance with table 10-4.

§[C26-1006.7] 27-623 Heavy timber construction (construction class II-A). -

(a) Minimum sizes of members. -To conform to the fire resistance rating requirements for heavy timber construction (construction class II-A), members shall be solid sawn or solid glue-laminated and of the following minimum dimensions: (Sizes of wood members indicated in this section are nominal sizes).

(1) COLUMNS, FRAMES AND ARCHES. -

a. Columns shall be at least eight inches in all dimensions when supporting floor loads, and at least six inches wide and eight inches deep when supporting roof and ceiling loads only.

b. Beams and girders shall be at least six inches wide and ten inches deep.

c. Frames or arches that spring from grade or the floor line and support floor loads shall be at least eight inches in all dimensions.

d. Timber trusses supporting floor loads shall have members at least eight inches in all dimensions.

e. Frames or arches for roof construction that spring from grade or the floor line and do not support floor loads shall have members at least six inches wide and eight inches deep for the lower half of the height, and at least six inches deep for the upper half.

f. Frames or arches for roof construction that spring from the top of walls or wall abutments, framed timber trusses, and other roof framing, which do not support floor loads, shall have members at least four inches wide and six inches deep. Spaced members may be composed of two or more pieces at least three inches thick when blocked solidly through their intervening spaces or when such spaces are tightly closed by a continuous wood cover plate at least two inches thick secured to the underside of the members. Splice plates shall be at least three inches thick. When protected by approved automatic sprinklers under the roof deck, framing members shall be at least three inches wide.

TABLE 10-4 NAILING SCHEDULE

Building Element	Nail Type	Number and Distribution
Stud to sole plate	Common-toe-nail	4—8d
Stud to cap plate	Common-end-nail	2—16d
Double Studs	Common-direct	10d 12 in. o.c. or 16d 30in. in o.c.
Corner Studs	Common-direct	16d 30 in. o.c.
Sole plate to joist or blocking	Common	16d 16 in. o.c
Double cap plate	Common-direct	16d 24 in. o.c
Cap plate laps	Common-direct	3—16d
Ribbon strip, 6 in. or less	Common-direct	2—10d each bearing
Ribbon strip, over 6 in.	Common-direct	3—10d each bearing
Roof rafter to plate	Common-toe-nail	3—16d
Roof rafter to ridge	Common-toe-nail	2—16d
Jack rafter to hip	Common-toe-nail	3—10d
Floor joists to studs (no ceiling joists)	Common-direct	5—10d or 3—16d
Floor joists to studs (with ceiling joists)	Common-direct	2—10d
Floor joists to sill or girder	Common-toe-nail	2—16d
Double-joist to joist	Common-direct	10d—staggered at 16 in.
Ledger strip	Common-direct	3—16d at each joist
Ceiling joists to plate	Common-toe-nail	2—16d
Ceiling joists to every rafter	Common-direct	(see table following)
Ceiling joists (laps over partitions)	Common-direct	3—16d
Collar beam	Common-direct	4—10d
Bridging to joists and rafters	Common-direct	2—8d each end
Bridging to studs	Common-direct or toe	2—10d each end
Diagonal brace (to stud and plate)	Common-direct	2—8d each bearing
Tail beams to headers (when nailing permitted)	Common-end	1—20d each 4 sq. ft. floor area
Header beams to trimmers (when nailing permitted)	Common-end	1—20d each 8 sq. ft. floor area
1 in. Subflooring (6 in. or less in width)	Common-direct	2—8d each joist
1 in. Subflooring (over 6 in. in width)	Common-direct	3—8d each joist
2 in. Subflooring	Common-direct	2—20d each joist
1 in. Wall Sheathing (8 in. or less in width)	Common-direct	2—8d each stud
1 in. Wall sheathing (over 8 in. in width)	Common-direct	2—8d each stud
Plywood sheathing and subflooring[a]	Common-direct	
1 in. Roof sheathing (6 in. or less in width)		2—8d each rafter
1 in. Roof sheathing (over 6 in. in width)	Corrosion -direct	3—8d each rafter
Shingles, wood	Corrosion-resistive	2—No.15 B&S each bearing
Weather boarding	Common-resistive	2—8d each bearing
1/2 in. Fiberboard sheathing	1 1/2 in. galvanized roofing nail 6d common nail 16 ga. galvanized staples, 1 1/8 in. long, 7/16 in. crown	3 in c.c. on all edges and 6 in. c.c. at other bearings
25/32 in. Fiberboard sheathing	1 3/4 in. galvanized roofing nail 8d common nail 16 ga. galvanized staples, 1 1/2 in. long, 7/16 [in.]* crown	3 in c.c. on all edges and 6 in. c.c. at other bearings
1/2 in. Gypsumboard sheathing	1 1/2 in. galvanized roofing nail 11 ga. 3/8 in. to 7/16 in. head 16 ga. galvanized staples, 1 1/2 in. long, 7/16 [in.]* crown	4 in c.c. on all edges and 8 in. c.c. at other bearings

Notes for Table 10-4:

[a]For nailing of plywood, see reference standard RS 10-9.

Copy in brackets not enacted but probably intended.

CEILING JOIST NAILING TO EVERY RAFTER
(Number of 16d nails)

Slope of Roof	4/12		5/12		6/12		7/12		9/12		12/12	
Rafter Spacing, o.c. (in.)	16	24	16	24	16	24	16	24	16	24	16	24
Width of building —												
Up to 24 ft……...	5	8	4	7	3	5	3	4	3	3	3	3
24 to 30 ft……	7	11	6	9	4	7	3	6	3	4	3	3

(2) FLOORS. -
a. Planks shall be splined or tongue-and-groove, not less than three inches thick, covered with one inch tongue-and-groove flooring, laid crosswise or diagonally to the plank, or other surface having equivalent fire resistance; or shall be,
b. At least four inches wide, set on edge close together and well spiked, and covered the same as for three inch thick plank. The planks shall be laid so that there is no continuous line of end joints except at points of support. Floors shall not extend closer than one-half inch to walls to provide an expansion joint, but the joint shall be covered at top or bottom to avoid flue action.
(3) ROOF DECKS. -Roof decks shall be splined or tongue-and-groove planks at least two inches thick; or tongue-and-groove plywood panels (bonded with exterior glue) at least one and one-eighth inch thick, with face grain perpendicular to supports that shall be spaced not more than forty-eight inches on center; or of planks at least three inches wide set on edge close together and laid as required for floors.
(b) Construction details. -Self releasing type wall plate boxes or approved hangers shall be provided where beams and girders enter masonry.

§[C26-1006.8] 27-624 Construction methods. -
(a) Fabrication. -All timber shall be accurately cut and framed to a close fit in such a manner that the joints will have even bearing over the contact surfaces. Mortises shall be true to size for their full depth and tenons shall fit snugly. No shimming in joints, or open joints, shall be permitted.
(b) Erection. -
(1) ASSEMBLY. -Joints shall have a tight fit. Fasteners shall be installed in a manner that will not damage the wood. End compression joints shall be brought to full bearing. All framework shall be carried up true and plumb.
(2) TEMPORARY CONNECTIONS.- As erection progresses, the work shall be bolted, or nailed as necessary, to resist all dead load, wind, and erection stresses.
(3) ALIGNMENT. -The structure shall be properly aligned before final tightening of the connections.

ARTICLE 8 ALUMINUM

§[C26-1007.1] 27-625 General requirements. -
Materials, design, and construction methods shall meet the requirements of reference standards RS 10-10 and RS 10-11.

§[C26-1007.2] 27-626 Identification. -Aluminum for structural elements shall at all times in the fabricator's plant, be marked, segregated, or otherwise handled so that the separate alloys and tempers are positively identified, and after completion of fabrication shall be marked to identify the alloy and temper. Such markings shall be affixed to completed members and assemblies or to boxed or bundled shipments of multiple units prior to shipment from the fabricator's plant.

§[C26-1007.3] 27-627 Quality control. -
(a) Reference. -The provisions of tables 10-1 and 10-2 shall apply.
(b) Welding operations. -
(1) Welding work shall be performed only by persons who have obtained a license from the commissioner.
(2) Where manual welding work is not performed in the city of New York, welds shall be made by welders qualified under the applicable provisions of reference standard RS 10-25.
(3) Tack welds that are not later incorporated into finished welds carrying calculated stress shall not be considered as structural welds.
(4) The inspection of welding operations stipulated in table 10-2 shall include a check to ascertain that the welders employed on the work have the required license or are qualified in accordance with paragraph two of this subdivision.

§[C26-1007.4] 27-628 Erection. -
(a) Bracing. -All framework shall be carried up true and plumb. Temporary bracing shall be provided to support all loads imposed upon the framework during construction that are in excess of those for which the framework was designed.
(b) Temporary connections. -As erection progresses, the work shall be securely bolted, or welded, to resist all dead loads, wind, and erection stresses.
(**c) Alignment**. -The structure shall be properly aligned before riveting, permanent bolting, or welding is performed.

ARTICLE 9 REINFORCED GYPSUM CONCRETE

§[C26-1008.1] 27-629 General requirements. -
Materials, design, and construction methods shall meet the requirements of reference standard RS 10-12.

§[C26-1008.2] 27-630 Identification of metal reinforcement.-
Bundles or rolls of welded wire fabric shall be securely tagged so as to identify the type and grade of steel, and the size.

§[C26-1008.3] 27-631 Limitations of use. -
Reinforced gypsum concrete shall not be used where exposed directly to the weather or where subject to frequent or continuous wetting. Precast units shall be protected by coverings or coatings from the weather and

from contact with moisture during shipment and during storage at the work site.

ARTICLE 10 THIN SHELL AND FOLDED-PLATE CONSTRUCTION

§[C26-1009.1] 27-632 General requirements. -Thin shell and folded-plate construction may be used for buildings or portions of buildings, as required in this section and subject to the provisions of this subchapter. The applicable provisions of the several reference standards relating to allowable stresses and the use of structural materials shall apply except as modified in this section.

§[C26-1009.2] 27-633 Analysis. -
(1) Unless otherwise permitted by the commissioner, stresses, displacements, and stability of thin shell and folded-plate structures shall be determined on the basis of the assumption of elastic behavior. The shell or plate may be assumed to be homogeneous and isotropic.
(2) The analysis for stability shall consider large deflections, creep effects and the deviation between the actual and theoretical shell surface.

§[C26-1009.3] 27-634 Thin concrete shells. -
The provisions of section 403, 404 and 405 of reference standard RS 10-45 shall apply with the following modifications. The remaining sections of reference standard RS 10-45 shall not apply.
(1) The advisory provisions of this standard shall be considered as mandatory.
(2) The minimum ultimate strength of concrete for thin shells shall be three thousand psi.
(3) Change all references to "the building code (ACI 318-63)" to" “reference standard RS 10-4."

ARTICLE 11 SUSPENDED STRUCTURES

§[C26-1010.1] 27-635 General requirements. -
The materials, design, and construction of suspended structures shall meet the applicable requirements of the code and the requirements of this article.

§[C26-1010.2] 27-636 Suspenders. -
(a) Bridge Wire Cable. -Bridge wire cables used for suspenders shall be either bridge strand or bridge rope fabricated from galvanized bridge wire.
(1) WIRE. -Wire shall be produced from rods rolled from high carbon steel, the composition of which shall be controlled to provide internal soundness, uniformity of chemical composition and physical properties, freedom from injurious surface imperfections, and shall meet the following requirements.
a. The minimum ultimate tensile strength of zinc-coated wire shall be as follows:
Class A coating ……two hundred twenty thousand psi
Class B coating .....……two hundred ten thousand psi
Class C coating ……..……..two hundred thousand psi
b. Yield strength shall be one hundred fifty thousand psi minimum for zinc-coated wire with class A or Class B coating, one hundred forty thousand psi minimum for zinc-coated wire with class C coating, based on the cross-sectional area of the coated wire when loaded to 0.7% elongation in a ten inch gage length. In determining the yield strength, an initial stress equivalent to forty-two thousand psi, based on cross-sectional area of the coated wire, shall be applied to the wire sample. At this loading, the entensometer shall be attached and an initial dial reading set at the equivalent of 0.15% elongation.
c. Elongation shall be four percent minimum in a ten inch gage length, determined as the permanent increase in length after failure of a marked section of the wire originally ten inches [*sic*] in length except that a value of two percent will be permitted for wires 0.110 in. or less in diameter having a class A zinc coating.
d. The zinc-coated wire must withstand wrapping at a rate not exceeding fifteen turns per minute twice around a mandrel equal to three times the wire diameter without fracture of the steel.
e. The wire used in bridge strand or bridge rope shall be zinc-coated (galvanized) in accordance with the requirements of table 10-5. Weight of coating shall be determined in accordance with the provisions of reference standard RS 10-24.

TABLE 10-5-MINIMUM WEIGHTS OF COATING-BRIDGE WIRE, ZINC-COATED, FOR BRIDGE STRAND AND BRIDGE ROPE CONSTRUCTIONS

Diameter of coated Wire (in.)	Minimum Weight of Coating (Ounces per Sq. Ft. of Uncoated Wire Surface)		
	Class A	Class B	Class C
0.041 to 0.061 incl……..	0.40	0.80	1.20
Over 0.061 to 0.079 incl…….	0.50	1.00	1.50
Over 0.079 to 0.092 incl…….	0.60	1.20	1.80
Over 0.092 to 0.103 incl…….	0.70	1.40	2.10
Over 0.103 to 0.119 incl…….	0.80	1.60	2.40
Over 0.119 to 0.142 incl…….	0.85	1.70	2.55
Over 0.142 to 0.187 incl…….	0.90	1.80	2.70
Over 0.187……..	1.00	2.00	3.00

(2) BRIDGE STRAND. -Bridge strands shall be made from wires complying with subparagraphs a through e of paragraph one of this subdivision, and shall meet the following requirements:
a. The wires shall be made in such lengths that the strands can be manufactured with no splices in the outside wires. Splicing of inner wires during the stranding operation is permissible. When joints are necessary in any wires, they shall be electrically butt welded and shall be recoated in a workmanlike manner. Joints in the wires of strand shall be made and dispersed in a manner that will maintain the minimum specified breaking strength of the strand.
b. The minimum breaking strength shall be based on tests to destruction and shall be certified by the manufacturer.
c. Bridge strand shall be prestretched to produce a stable modulus of elasticity of at least the following values for strand wires having class A coating:
one-half inch to two and
nine-sixteenths inches dia……..…twenty-four million psi
two and five-eighths inches and larger..twenty-three million psi
For bridge strands that have classes B and C zinc-coating on the outside wires, the modulus of elasticity shall not be more than one million psi less than the corresponding values for bridge strand with a class A coating. The pre-stretching load shall not exceed fifty-five percent of the breaking strength of the strand.
(3) BRIDGE ROPE. -Bridge rope shall be made from wires complying with subparagraphs a through e of paragraph one of this subdivision, and shall meet the following requirements:
a. Joints are permissible in inner and outer wires and shall be electrically butt welded and shall be recoated in a workmanlike manner. Joints in the wires of strand shall be made and dispersed in a manner that will maintain the minimum specified breaking strength of the rope.
b. The minimum breaking strength shall be based on tests to destruction and shall be certified by the manufacturer.
c. Bridge rope shall be prestretched to produce a stable modulus of elasticity of at least twenty million psi for rope wires having a class A coating. For bridge rope that has class B and C zinc-coatings on the outside wires, the modulus of elasticity shall not be more than one million psi less than the corresponding value for bridge rope with a class A coating. The prestretching load shall not exceed fifty-five percent of the breaking strength of the rope.
(b) Other materials. -Any structural material permitted for use under the provisions of other sections of this subchapter may be used for support of a suspended structure including, but not limited to, types of steel permitted for use under the provisions of reference standard RS 10-5; reinforcing steel and wire, prestressing wire and strand, and high strength alloy steel bars conforming to the requirements of reference standard RS 10-3; and steel conforming to the requirements of reference standards RS 10-66 and RS 10-69. Prestressing wire and strand may be used for suspenders without the application of prestressing force. All such suspenders shall be protected as described in section 27-642 of this article.

§[C26-1010.3] 27-637 Tests of materials for bridge wire suspenders. -The following minimum quantities of bridge wire for suspenders shall be tested:
(1) Tensile strength tests of the wires shall be made of a specimen cut from each coil of zinc coated wire.
(2) Tests for elongation and for yield strength shall be made on samples from approximately ten percent of the coils of any one size finished wire. If any of these tests fail to meet the specified requirements, all the coils in that lot of finished wire shall be tested and only coils that satisfactorily pass the test shall be used.
(3) Tests of the zinc coating shall be made of approximately five percent of the coils of any one size of finished wire. If any of these tests fail to meet the specified requirements, all the coils in that lot of finished wire shall be tested and only coils that satisfactorily pass the test shall be used.

§[C26-1010.4] 27-638 Tests of materials for other types of suspenders.- The applicable provisions of reference standards RS 10-3 and RS 10-5 shall apply.

§[C26-1010.5] 27-639 Design.- The following design requirements shall supplement the applicable provisions of this subchapter.
(a) Flexibility.- Suspenders, unless encased, may be considered as perfectly flexible.
(b) Elastic stretch.- The elastic stretch of the suspenders shall be considered.
(c) Displacement.- Displacement resulting from changes in magnitude and position of load and its effects [*sic*] on stress shall be considered.
(d) Other considerations.- Consideration shall be given to the effects of temperature variations, partial and reversible wind loadings, and vibration.
(e) Allowable working load. -The allowable working load in suspenders formed from bridge wire cable shall be computed on the basis of factors equal to one and one-half times dead load plus two and one-half times live load or one and two-tenths times dead load plue two times live load plus two times wind load, applied to the specified, minimum, ultimate strength of the suspender. The allowable working load in suspenders conforming to the materials specifications or* several reference standards of this code shall be the allowable working stresses for tension members as prescribed in the applicable reference standard or, for those materials where allowable stresses for tension members are not prescribed, on factors of one and one-half times dead load plus two times live load or one and two-tenths times dead load plus one and one-half times live load, plus one and one-half times wind load, also applied to

the specified minimum, ultimate strength of the suspender. In no case, however, shall the factor, applied to the yield strength of the material or to the prestretching or prestressing force, exceed one and one-tenth times dead load plus one and one-quarter times live load.

As enacted but "of" probably intended.

§[C26-1010.6] 27-640 Fittings for wire cable suspenders.- Fittings for wire cable suspenders shall be capable of developing the specified minimum ultimate strength of the attached cable or strand without developing stresses in the fitting equal to, or in excess of, the yield strength of the material in the fitting. One end fitting, of each type and size to be used, shall be tested to insure the adequacy of the fitting to develop the ultimate strength of the cable or strand to which it is to be attached.

§[C26-1010.7] 27-641 Construction. -

(a) General. -The general provisions of reference standard RS 10-5 relating to erection of steel shall apply.

(b) Fitting for wire cable suspenders. -

(1) Only fittings designed for use with the specific wire cable shall be used.

(2) All fittings shall be galvanized in accordance with reference standard RS 10-23.

(3) Zinc used for attaching all speltered fittings shall be at least equal to the grade designated as" high grade" in reference standard RS 10-26.

§[C26-1010.8] 27-642 Protection of suspenders. -

(a) Protected locations. -All wires in bridge strands, bridge ropes, or other wire rope or strand suspenders placed on the interior of structures or concealed from exposure by interior finish shall have at least a class A coating of zinc. Rods, bars, plates, or shapes used for suspenders shall be given a protective coating as specified for the protection of like material in the applicable reference standard.

(b) Exposed locations. -The outside wires of bridge strand or bridge rope suspenders placed in locations exposed to the weather shall have at least a class B coating of zinc and the inside wires shall have at least a class A coating. Rods, bars, plates, or shapes used for suspenders shall be given a protective coating as specified for the protection of like material in the applicable reference standard.

ARTICLE 12 GLASS PANELS

§[C26-1011.1] 27-643 Scope.- The provisions of sections 27-644 through 27-648 of this article shall apply to the use of glass in the exterior wall of a building and shall be limited to exterior application wherein the glass would not be subjected to any loads normal to the face of glass other than those due to wind. For applications involving human impact, the provisions of section 27-651 of this article shall apply. For other cases, the strength and mode of installation of glass shall conform to accepted industry standards.

§[C26-1011.2] 27-644 Support for glass panels. - Glass shall be firmly held in place. The supports shall be of adequate strength to resist the applicable design wind loads as prescribed in subchapter nine of this chapter.

§[C26-1011.3] 27-645 Glass requirements.- Glass shall meet the requirements of reference standard RS 10-68 for the applicable type, size, thickness and quality.

§[C26-1011.4] 27-646 Thickness of glass. – Thicknesses of glass panels shall be chosen either on the basis of statistical probability of breakage (subdivision (a) of this section) or on the basis of table 10-7, at the designer's option.

(a) Statistical probability. -Thickness of glass panels shall be chosen so that the statistical probability of breakage when the glass is initially subjected to the design wind load specified in table RS 9-5-1 does not exceed the values indicated in table 10-6. Probability or load factors used for design shall be derived by test. The sufficiency and validity of such test data shall be subject to approval by the commissioner.

(b) Alternate requirements.- Alternative to the requirements of paragraph (a) above, the thickness of glass panels may be chosen from table 10-7. For glass with assured minimum thickness greater than required by reference standard RS 10-68, the maximum areas in table 10-7 may be increased in proportion to the assured minimum thickness.

[C26-1011.5] 27-647 Special glasses.- For types of glass other than single annealed sheet and plate glass, allowable maximum areas may be determined by multiplying values in table 10-7 by the appropriate multiplying factor listed in table 10-8.

§[C26-1011.6] 27-648 Installation of glass panels. - Glass panels shall be handled and installed so that their strength is not impaired by chipping or scratching, shall be fully and firmly embedded [*sic*] in their supports, and shall be mounted in a manner that will accommodate differential movements due to thermal and loading conditions.

§[C26-1011.7] 27-649 Protection of glass panels. - Glass panels installed in areas where they will be subject to unusual conditions of construction damage, such as spatter from welds or locations near materials hoists, shall be protected by a hardboard covering or its equivalent during the period that such work is in progress.

§[C26-1011.8] 27-650 Deflection of support.- The deflection of members supporting glass panels under the design wind load (measured perpendicular to the plane of the panel) shall not exceed L/175, where L is the span of the supporting member. In no case shall such deflection exceed three-quarters of an inch.

TABLE 10-6 PROBABILITY OF BREAKAGE FOR GLASS PANELS (BASED ON COEFFICIENT OF VARIATION OF 25%)

Elevation Above Grad of Midpoint of Glass	Area of Panel — Sq. Ft.				
—Ft……...	0-60	60-80	80-100	100-120	120+
0-50……...	1.0%	1.0%	1.0%	1.0%	1.0%
50 or more……	1.0%	0.8%	0.6%	0.4%	0.2%

TABLE 10-7 MAXIMUM AREA OF GLASS — SQ. FT.

	Elevation Above Grade of Mid-point of Glass-Ft.			
Nominal Thickness of Glass-Inches	0-50	50-300	300-600	600+
Sheet Glass				
Single strength……...	9	9	8	7
Double strength…….	13	13	11	10
3/16"..……	25	25	21	19
7/32"……..	32	32	27	24
Plate and Float Glass				
13/64"……	25	25	21	19
1/4"...……	37	37	32	28
5/16"……..	54	54	46	40
3/8"……	78	74	63	58
1/2"…..…….	114	100	86	75
5/8"……	152	120	103	90
3/4"...……	210	137	118	103
7/8"……...	241	158	135	118
1"……..	312	204	175	153

TABLE 10-8 MULTIPLYING FACTORS FOR VARIOUS TYPES OF GLASS

Glass Type	Multiplying Factor
Full tempered……..	4.0
Heat strengthened……	2.0
Factory-fabricated double glazing...	1.5*
Laminated……..……..	0.6
Wired……...	0.5
Sandblasted or etched…..…….	0.4

*For asymmetrical units base strength on thinner lite.

§[C26-1011.9] 27-651 Panels subject to human impact loads.- Glass in prime and storm doors, interior doors, fixed glass panels that may be mistaken for means of egress or ingress, shower doors and tub enclosures, or in similar installations wherein one or more of the following criteria apply, shall meet the requirements set forth in table 10-9, or by comparative tests shall be proven to produce equivalent performance:

(a) openings are located in regularly occupied spaces.

(b) lowest point of panel is less than eighteen inches above finished floor.

(c) minimum dimension of panel is larger than eighteen inches.

TABLE 10-9 REQUIREMENTS FOR GLASS PANELS SUBJECT TO IMPACT LOADS[a,b]

*3. Glass Type	Individual Opening Area	Requirements
Regular plate, sheet or rolled (annealed)	Over 6 sq. ft.	Not less than 3/16 in. thick. Must be protected by a push-bar or protective grille firmly attached on each exposed side[c], if not divided by a muntin.
Regular plate, sheet or rolled (annealed), surface sandblasted, etched, or otherwise depreciated	Over 6 sq. ft.	Not less than 7/32 in. thick. Must be protected by a push-bar or protective grille firmly attached on each exposed side[C].
Regular plate, sheet or rolled (annealed), obscure	Over 6 sq. ft.	Not less than 3/16 in. thick. Must be protected by a push-bar or grille firmly attached on each exposed side[C].
Laminated	Over 6 sq. ft.	Not less than 1/4 in. thick. Shall pass impact test requirements of reference standard RS 10-67.
Fully-tempered	Over 6 sq. ft.	Shall pass impact test requirements of reference standard RS 10-67.
Wired	Over 6 sq. ft.	Not less than 7/32 in. thick. Shall pass impact test requirements of reference standard RS 10-67.
All unframed glass doors (swinging)		Shall be fully-tempered glass and pass impact test requirements of reference standard RS 10-67.

Notes for Table 10-9:

[a]Glass less than single strength (SS) in thickness shall not be used.

[b]If short dimension is larger than 24 in., glass must be double strength (DS) or thicker.

[c]Building owners and tenants shall maintain push-bars or protective grilles in safe condition at all times.

****"3." Enacted but probably not intended.***

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FOUNDATIONS

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ARTICLE 1 GENERAL

§[C26-1100.1] 27-652 Scope.- The provisions of this subchapter shall establish minimum requirements for the design and construction of the foundations of buildings. In addition, within special flood hazard areas, and below the regulatory flood datum, as described in article ten of subchapter four of this chapter, foundations shall conform with the applicable provisions of reference standard RS 4-5.

§[C26-1100.2] 27-653 Standards.- The provisions of reference standard RS-11 shall be part of this subchapter.

§[C26-1100.3] 27-654 Definitions.- For definitions to be used in the interpretation of this subchapter, see subchapter two of this chapter.

§[C26-1100.4] 27-655 Plans. -For the requirements governing the filing of plans and the work to be shown on the plans, see subchapter one of this chapter**.**

§[C26-1100.5] 27-656 Permits. -For the requirements governing equipment work permits and for equipment use permits, see subchapter one of this chapter.

§[C26-1100.6] 27-657 General requirements. -
Except as otherwise specifically provided herein, the foundations of buildings including retaining walls and other structures shall bear on, or be carried down to, satisfactory bearing materials in such manner that the entire transmitted load will be distributed over the supporting soils at any depth beneath the foundation at unit intensities within the allowable bearing values established in this subchapter. In addition, foundations shall be proportioned to limit settlements to a magnitude that will not cause damage to the proposed construction or to existing adjacent or nearby buildings during or after construction.

§[C26-1100.7] 27-658 Depth of foundations. -
(a) Footings and Pile Caps.- The bottom surface of any footing, pier, pile cap, or other foundation construction, other than grade beams, shall be carried down at least four feet below the lowest level of the adjoining ground or pavement surface that is exposed to frost, except as follows:
(1) In refrigerator, cold storage, or similar areas, the depth shall be increased as required to find [*sic*] the construction below the potential level of freezing in the soil, or loss of heat from the soil shall be prevented by insulation, warm air ducts, circulating systems, or equivalent means.
(2) For foundation elements resting on rock, the footings may rest on the rock surface at shallower depths than those indicated above, provided that visual inspection of the rock surface directly underlying the bearing area shows it to be free of seams, cracks, or disintegrated materials that could serve as reservoirs for water and thus be subject to freezing.
(3) For foundation elements in the interior of closed and heated buildings, or in cases where the soil underlying the foundation is not subject to frost action, there shall be no mandatory minimum requirement for embedment.
(4) Mobile or portable buildings not more than one story high may be supported on foundation elements bearing at grade, subject to the following conditions:
a. The building shall be supported on jacks, wedges, or other devices that will permit readjustment of level in the event of displacement.
b. The bearing capacity of the underlying soil shall be adequate to support the building loads without rupture. Where the building is to be supported on nominally unsatisfactory bearing materials, the provisions of sections 27-677 and 27-679 of article four of this subchapter shall apply except that, where the bearing material is confined under pavement and the bearing pressure on the surface of the soil material does not exceed five hundred psf, special investigation of the foundation will not be required.
c. The bearing area shall be well drained and not subject to inundation.
d. The levels of the foundations shall be checked and adjusted to compensate for displacements at least once every year, and the owner shall maintain a record of such work, available for inspection by the commissioner.
(5) Where piles project above grade and displacement of the pile cap is prevented by interposing a space

between the underside of the cap and the ground, the requirement for embedment of the cap below the level of frost penetration, shall not apply.

(b) Grade beams. -The bottom surface of any grade beam shall be carried down at least eighteen inches below the lowest level of the adjoining ground or pavement surface that is exposed to frost.

§[C26-1100.8] 27-659 Foundations at different levels. -Where footings are supported at different levels, or at different levels from the footings of adjacent structures, the influence of the pressures under the higher footings on the stability of the lower footings shall be considered. Consideration shall be given to the requirements for lateral support of the material supporting the higher footings, the additional load imposed on the lower footings, and assessment of the effects of dragdown on adjacent pile-supported buildings.

§[C26-1100.9] 27-660 Slabs on grade. -Slabs on grade within or adjacent to a building shall be so designed to limit settlement of such slabs to a magnitude that will not impair their usability or cause damage to the building or its foundations.

§[C26-1100.10] 27-661 Construction. –

The provisions of subchapter nineteen of this chapter relating to safety and of subchapter ten of this chapter relating to concrete, timber, masonry, and steel construction shall apply. For inspection requirements, see article thirteen of this subchapter.

(a) Cold weather. -No foundation shall be placed on frozen soil. No foundation shall be placed in freezing weather unless provision is made to maintain the underlying soil free of frost.

(b) Seepage. -In an excavation where soil and ground water conditions are such that an inward or upward seepage might be produced in soil material intended to provide vertical or lateral support for foundation elements or for adjacent foundations, excavating methods that will control or prevent the inflow of ground water shall be employed to prevent disturbance of the soil material in the excavation or beneath existing buildings. No foundation shall be laid on soil that has been disturbed by seepage unless remedial measures, as directed by an architect or engineer, are taken.

ARTICLE 2 SOIL INVESTIGATIONS

§[C26-1101.1] 27-662 General. -Borings in earth or rock, recovery of samples, tests of soil samples, load tests, or other investigations or exploratory procedures shall be performed as necessary for the design and construction of a safe foundation subject to inspection in accordance with the requirements of article thirteen of this subchapter.

§[C26-1101.2] 27-663 Borings. -(a) Number. -At least one boring shall be made for every twenty-five hundred square feet of building area or fraction thereof and, for buildings supported on piling of such type or capacity that load tests are required, one boring shall be made for every sixteen hundred square feet of building area or fraction thereof except as indicated in paragraphs one through three of this subdivision.

(1) For one- and two-family dwellings (appurtenant structures such as garages, sheds, and porches shall be considered as part of the dwelling):

a. Buildings supported on footings founded on soil of class 8-65 or better. -For contiguous groups of four or more dwellings at least one boring shall be made for every four buildings. For isolated dwellings and for contiguous groups of two or three dwellings, the overall site shall be explored by at least one boring or auger probing or, alternately, the site of each building shall be explored by one test pit carried to a depth of at least eight feet below the level of the bottom of the proposed footings.

b. Buildings supported on piles or on footings founded in soil strata of class 9-65, or poorer. -The site shall be explored by at least one boring for every four buildings in contiguous groups or one boring for each building in the case of isolated dwellings.

(2) For buildings having a plan area in excess of ten thousand square feet and where subsurface conditions as determined from preliminary borings or from borings on neighboring sites consist of uniform deposits of materials of class 1-65, 2-65, 3-65, 6-65, 7-65, or 8-65, subject to the approval of the commissioner, the required borings may be reduced to one for every five thousand square feet of building area or fraction thereof except where the foundation is to be supported on piles.

(3) Where foundations are to rest on rock of class 1-65, 2-65, or 3-65 and such rock is exposed prior to construction over a part or all of the area of the buildings, borings will not be required in those areas where rock is exposed, and the area (within the limits of the building) of the exposed rock surface shall not be included in the area used to compute the required number of borings, provided the following requirements are met:

a. The presence of defects or the inclination of bedding planes in the rock are of such size and location as to not affect the stability of the foundation.

b. The foundation is designed for bearing pressures not exceeding those permitted in table 11-2 without increase for embedment.

(b) Location. -At least two-thirds of the required number of borings shall be located within the area under the building. Those outside the area shall not be more than twenty-five feet from the limits of the building. Borings shall be uniformly distributed or distributed in accordance with the loading pattern imposed by the building.

(c) Depth. -
(1) Unless soil material of class 1-65 through 3-65 is encountered at shallower depth, borings shall extend below the deepest part of the excavation as necessary to satisfy the more restrictive of the following requirements:
a. Borings shall extend deep enough into nominally satisfactory bearing material to establish its character and thickness, but not less than the following:
1. Where the soil material is class 5-65-ten feet.
2. For one- and two-family residences, two stories or less in height-fifteen feet.
3. For other cases-twenty-five feet.
b. Borings shall extend to the depth at which the vertical stress caused by the proposed construction is reduced to ten percent or less of the original vertical stress at this depth due to the weight of the overburden, except that where strata of soil materials of class 9-65 or poorer are encountered within this depth, the borings shall penetrate such strata and be carried to a depth that shows penetration continuous of material of class 8-65 or better as required in paragraph a of this subdivision.
c. In addition to the requirements of paragraphs a and b of this subdivision, at least one boring in every ten thousand square feet of building area, but not less than one boring per building, shall be carried to a depth of one hundred feet below the curb for buildings having an average area load exceeding one thousand psf. The average load shall be computed as the sum of all dead loads and live loads of the building, divided by the area of the building at ground level.
(2) Where rock is encountered in borings within the depths noted in paragraph one the borings shall be cored a minimum of five feet into rock, or farther where necessary or required, to obtain at least a recovery of thirty-five percent core from five feet of penetration but not to exceed the depth in paragraph one of this subdivision. However, for foundations supported on piles or drilled-in caissons bearing on the rock and having a capacity in excess of eighty tons per unit, the capacity of the rock to support the applied load shall be demonstrated by increasing the length of coring to ten feet.
(d) Types. -
(1) SOIL BORINGS. -Soil samples shall be recovered at intervals not to exceed five feet and at every change of soil strata. Such samples shall be recovered using a two inch O.D. split spoon sampler having an inside diameter of one and three-eighths inches and a constant internal cross section. The sampler shall be at least twenty-four inches long and shall be tipped with a heat treated, sharp cutting shoe. It shall be straight and sound, with an undistorted cross section. The rods to which the sampler is attached shall be one inch extra heavy pipe or one and five-eighths O.D. drill rods. The sampling tools shall be driven with a one hundred forty pound hammer having a fall of thirty inches. The blows per foot so recorded shall be designated hereinafter, by the symbol, N. The fall of the hammer shall be a free fall and the energy of impact shall not be mitigated by friction of the hoisting line on the drum, friction of the hammer against its guide, or other similar effects. All samples, except those of rock, shall be preserved in air tight bottles having a capacity of at least eight ounces.
(2) ROCK BORINGS. -Where borings are required to penetrate rock they shall be advanced by core drilling, and core samples shall be recovered using a double tube core barrel and diamond bits that provide cores at least one and three-eighths inches in diameter.
(e) Data to be reported. -Records of all borings required by the provisions of subdivision (a) of this section shall accompany the application for approval of the foundation plans. Such records shall show, as a minimum, the size of casing and the number of blows per foot required to advance the casing (to the depth that casing is used); the weight of hammer and the distance of fall; a description of the sampler; a description of the drill tools and equipment including, where used, the size of diamond bits and type of core barrels; the number of blows required to drive the sampling spoon for each six inches increment of penetration; the elevation of the ground surface referenced to an established datum; the location and depth of the boring and its relation to the proposed construction; the elevations at which samples were taken; the elevations at which core drilling was started and stopped for each "run;" the elevations of the boundaries of soil strata; percent recovery for each "run" of core drilling; description of the soil strata encountered and geological classification of rock drilled (based on visual examination of cores); any particular, unusual, or special conditions such as loss of water in the earth and rock strata, boulders, cavities, and obstructions, use of special type of samplers, traps, etc.; and the level of ground water together with a description of how and when the ground water level was observed. All abandoned or unsuccessful attempts at borings or rock drilling shall be reported.
(f) Disposition of Samples and Cores. -Soil samples and rock cores shall be retained in an accessible location by the owner, or by the party making application for approval of the foundation plans for a period of one year after the date of issuance of a certificate of occupancy, and shall be available upon reasonable notice for inspection by the commissioner.

§[C26-1101.3] 27-664 Test pits. -
(a) Tests pits may be substituted for boring on a one-for-one basis. All applicable requirements as to depth, numbers of samples, data to be reported, and disposition of samples shall be observed, except that the use of sample spoon, recording of driving resistance, and recovery of rock cores is not required in test pit investigations, and except as provided in subdivision (b) of this section.
(b) Test pits for buildings not more than one story in height or for one or two-family residences not more than two stories in height need only extend four feet

below the deepest part of the excavation for the construction of footings, or a minimum of four feet when foundation elements rest on grade pursuant to paragraph four of subdivision (a) of section 27-658 of article one of this subchapter, provided that such structures are supported by footings bearing on nominally satisfactory bearing materials of class 9-65 (except soft clay) soil or better.

§[C26-1101.4] 27-665 Boring methods. -
Borings shall be made by continuous driving and cleaning out of a pipe casing (including telescoping of smaller sizes inside of larger casing) except as permitted in subdivisions (a), (b) and (c) of this section. Where casing is used, it shall be cleaned out to undisturbed soil prior to sampling and the sample spoon driven into soil that has not been affected by chopping, washing, or hydrostatic imbalance.
(a) Uncased borings. -Uncased borings, including borings where the casing is omitted for part of the depth, may be used if the mud slurry method is followed. The requirements for soil sampling and rock coring shall be the same for uncased borings as for borings made using casing, except that prior to each soil sampling operation the boring shall be substantially cleaned of disturbed material and the sample spoon shall be advanced through any settled solids before counting the blows required to drive the spoon. Longer sample spoons, having a sludge chamber, shall be used where settled solids exceed six inches. In determining ground water levels, methods shall be used to reduce and replace the mud slurry so that the hydrostatic head may be measured. The procedures shall be described in detail in the records.
(b) Augur borings. -Borings may be made with augers except that short flight augers shall not be used in granular soils below the water level. Sampling procedures in auger borings for both soil and rock shall be the same as for cased borings. Full hydrostatic head shall be maintained in granular soils below the ground water level during the boring operation.
(c) Maximum diameter. -Where the bore hole, as drilled by any method, is in excess of four inches in diameter, sampling operations shall be performed through a temporary casing having a four inch inside diameter or less.

§[C26-1101.5] 27-666 Probings and geophysical explorations. -
(a) Footings, pier or wall designs.- Where the foundations for a proposed building consist of footings or foundation piers or walls bearing on rock of class 1-65, 2-65 or 3-65, the use of probings, auger borings or geophysical methods, made without the recovery of soil samples or rock cores, may (except as hereafter specified) be substituted for up to one-half of the number of borings required by the provisions of subdivision (a) of section 27-663 of this article, provided that such probings, borings, etc. are carried to adequate depth and are of a nature that will reasonably define the surface contours of the rock. The accuracy of such surface contour definition shall be confirmed by recovering rock cores at the locations of at least one-fifth of the probings or auger borings or, in the case where geophysical methods are used, those borings which are made shall be so distributed as to permit confirmation of the accuracy of the geophysical investigations. The provisions of paragraph two of subdivision (a) of section 27-663 of this article, shall not apply where the provisions of this section are invoked.
(b) Pile support.- Where the foundation for the proposed building consists of piling bearing on rock of class 1-65, 2-65 or 3-65, the provisions of subdivision (a) of this section shall apply, provided that the borings consistently show that the soil overlying the rock consists solely of deposits of class 6-65 through 11-65 and is free of boulders or other obstructions.
(c) Geophysical methods.- Geophysical investigations shall be conducted by experienced and qualified personnel acceptable to the commissioner who may reject the results and require additional exploration by borings if the results of the geophysical explorations cannot be satisfactorily correlated to the logs of the borings.

§[C26-1101.6] 27-667 Existing borings.- Existing boring data may be utilized subject to the following:
(1) Borings, test pits, probings, etc., that have been made in accordance with all requirements of this section, but not necessarily for the investigation of the specific project for which application is being made, may be utilized in fulfillment of these provisions.
(2) The logs of borings, test pits, probings, etc., that have been made in accordance with all requirements of this section, but wherein the soil samples and/or rock cores are not available for examination, may be utilized in fulfillment of these provisions to an extent not to exceed one-half of the required number of borings.
(3) Borings, test pits, probings, etc., or the logs thereof, that do not meet the specific requirements of this subchapter, but which are of suitable type and adequate penetration to provide the data required for the safe design and construction of the proposed foundation, may be utilized in fulfillment of the provisions of this section, subject to the approval of the commissioner.

ARTICLE 3 FOUNDATION LOADS

§[C26-1102.1] 27-668 Soil bearing pressures. -The loads to be used in computing the bearing pressures on materials directly underlying footings shall be the total column, pier, or wall reactions determined in accordance with the provisions of subchapter nine of this chapter, on the basis of reduced live load; plus the weight of the foundations; plus the weight of any soil, fill, and slabs on grade that is included within vertical planes projected upward from the extreme limits of the footing to the final ground surface. Live load on grade, or on slabs on

grade, within these limits shall also be included. Impact loads shall be considered in accordance with the provisions of section 27-673 of this article.

§[C26-1102.2] 27-669 Pile reactions. -The loads to be used in computing pile reactions shall be determined as provided in section 27-668 of this article except that where piles penetrate fill, clay, silt, peat, or similar compressible strata, the pile loads shall be increased by the amount of drag exerted by such material, and by any overlaying strata, during consolidation. Computation of the amount of drag shall consider the amount of added fill, the amount of shear strain between pile (or group) and the soil, the ratio of vertical to horizontal pressure in the soil, and the arrangement of the piles. The soil surrounding or underlying the pile cap shall not be considered as providing any vertical support for the cap.

§[C26-1102.3] 27-670 Lateral loads. -

(a) Earth and ground water pressure. -Every foundation wall or other wall serving as a retaining structure shall be designed to resist, in addition to the vertical loads acting thereon, the incident lateral earth pressures and surcharges, plus hydrostatic pressures corresponding to the maximum probable ground water level. Retaining walls shall be designed to resist at least the superimposed effects of the total static lateral soil pressure, excluding the pressure caused by any temporary surcharge, plus an earthquake force of $0.045\ w_s h^2$ (horizontal backfill surface), where w_S equals unit weight of soil and h equals wall height. Surcharges which are applied over extended periods of time shall be included in the total static lateral soil pressure and their earthquake lateral force shall be computed and added to the force of $0.045\ w_s h^2$. The earthquake force from backfill shall be distributed as an inverse triangle over the height of the wall. The point of application of the earthquake force from an extended duration surcharge shall be determined on an individual case basis. If the backfill consists of loose saturated granular soil, consideration shall be given to the potential liquefication of the backfill during the seismic loading using reference standard RS 9-6.

(b) Wind and other superstructure loads. -Provision shall be made to resist lateral loads imposed on the superstructure due to wind or other causes.

(c) Soil movements.- Buildings shall not be constructed in areas where the soil is subject to lateral movements unless positive provision is made to prevent such movements.

***Local Law 17-1995.*

§[C26-1102.4] 27-671 Eccentricities. -Eccentricity of loading in foundations, including eccentricity of loading on the bases of retaining walls, shall be investigated and the maximum soil pressure or pile load (considering eccentricity) shall be kept within the safe capacity thereof as established in articles four and eight of this subchapter. Soil pressure and pile load due to eccentricity shall be computed on the basis of straight line distribution of foundation reaction. However, other modes of distribution of the foundation reaction may be assumed, subject to the approval of the commissioner, if it can be demonstrated that the pile and/or soil is capable of sufficient plastic deformation to develop such mode of distribution without failure.

§[C26-1102.5] 27-672 Uplift forces.- Uplift and overturning forces due to wind and hydrostatic pressure shall be considered.

§[C26-1102.6] 27-673 Impact. -Impact forces may be neglected in the design of foundations, except for foundations bearing on loose granular soils, or, regardless of the type of soil material, for foundations supporting cranes, heavy machinery, and* moving equipment, or where the ratio of the live load causing impact to the total of the reactions from live load applied without impact plus dead load exceeds one-third.

***As enacted but "or" probably intended.*

§[C26-1102.7] 27-674 Stability. -The provisions of article twelve of this subchapter shall apply.

ARTICLE 4 ALLOWABLE SOIL BEARING PRESSURES

§[C26-1103.1] 27-675 Classification of soil materials. - For purposes of this subchapter, soil materials shall be classified and identified in accordance with table 11-1. In addition, the following supplementary definitions shall apply.

(a) Rock. -

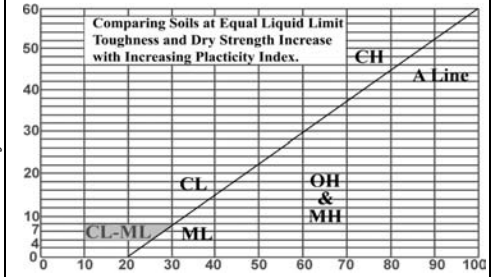
(1) HARD SOUND ROCK. -Includes crystalline rocks such as Fordham geniss**, Ravenswood geniss**, Palisades diabase, Manhattan schist. Characteristics [*sic*] are: the rock rings when struck with pick or bar; does not disintegrate after exposure to air or water; breaks with sharp fresh fracture; cracks are unweathered and less than one-eighth inch wide, generally no closer than three feet apart; core recovery with a double tube, diamond core barrel is generally eighty-five percent or greater for each five foot run.

***As enacted but "gneiss" probably intended.*

TABLE 11-1 UNIFIED SOIL CLASSIFICATION
(Including Identification and Description)

Major Divisions		Group Symbols	Typical Names	Field Identification Procedures (Excluding particles larger than 3 in. and basing fractions on estimated weights)			Information Required for Describing Soils	Laboratory Classification Criteria
1	2	3	4	5			6	7
Coarse-grained Soils More than half of material is *larger* than No. 200 sieve size. The No. 200 sieve size is about the smallest visible to the naked eye.	Gravels More than half of coarse fraction is larger than No. 4 sieve size. (For visual classification, the ¼-in. size may be used as equivalent to the No. 4 sieve size.) — Clean Gravels (Little or no fines)	GW	Well-graded gravels, gravel-sand mixture, little or no fines.	Wide range in grain size and substantial amounts of all intermediate particle sizes.			For undisturbed soils add information on stratification, degree of compactness, cementation, moisture condition, and drainage characteristics. Give typical name; indicate approximate percentages of sand and gravel, maximum size; angularity, surface condition, and hardness of the coarse grains; local or geologic name and other pertinent descriptive information; and symbol in parentheses. Example: Silty sand, gravelly; about 20% hard, angular gravel particles ½-in. maximum size; rounded and subangular sand grains, coarse to fine; about 15% nonplastic fines with low dry strength; well compacted and moist in place; alluvial sand; (SM).	Use grain-size curve in identifying the fractions as given under field identification. Determine percentage of gravel and sand from grain-size curve. Depending on percentage of fine (fraction smaller than No. 200 sieve size) coarse-grained soils are classified as follows: Less than 5% GW, GP, SW, SP, More than 12% GM, GC, SM, SC. 5% to 12% Borderline cases requiring use of dual symbols.
		GP	Poorly graded gravels or gravel-sand mixture, little or no fines.	Predominantly one size or a range of sizes with some intermediate sizes missing.				
	— Gravels with Fines (Appreciable amount of fines)	GM	Silty gravels, gravel-and-silt mixtures.	Nonplastic fines or fines with low plasticity (for identification procedures see ML below).				
		GC	Clayey gravels, gravel-and-clay mixtures.	Plastic fines (for identification procedures see CL below).				
	Sands More than half of coarse fraction is smaller than No.4 sieve size. — Clean Sands (Little or no fines)	SW	Well-graded sands, gravelly sands, little or no fines.	Wide range in grain size and substantial amounts of all intermediate particle sizes.				
		SP	Poorly graded sands or gravelly sands, little or no fines.	Predominantly one size or a range of sizes with some intermediate sizes missing.				
	— Sands with Fines (Appreciable amount of fines)	SM	Silty sands, sand-silt mixtures.	Nonplastic fines or fines with low plasticity (for identification procedures see ML below).				
		SC	Clayey sands, sand-clay mixtures.	Plastic fines (for identification procedures see CL below).				
Fine-grained Soils More than half of material is *smaller* than No. 200 sieve size.				Identification Procedure on Fraction Smaller than No. 40 Sieve Size.				
				Dry Strength (Crushing Characteristics)	Dilatancy (Reaction to shaking)	Toughness (Consistency near PL)		
	Silts and Clays Liquid limit is less than 50	ML	Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity	None to slight	Quick to slow	None	For undisturbed soils add information on structure, stratification, consistency in undisturbed and remolded states, moisture and drainage conditions Give typical name; indicate degree and character of plasticity; amount and maximum size of coarse grains; color in wet condition; odor, if any; local or geologic name and other pertinent descriptive information; and symbol in parentheses. Example: Clayey silt, brown; slightly plastic; small percentage of fine sand; numerous vertical root holes; firm and dry in place; loess; (ML)	
		CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays.	Medium to high	None to very slow	Medium		
	Silts and Clays Liquid limit is greater than 50	OL	Organic silts and organic silty clays of low plasticity.	Slight to medium	Slow	Slight		
		MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts.	Slight to medium	Slow to none	Slight to medium		
		CH	Inorganic clays of high plasticity, fat clays.	High to very high	None	High		
		OH	Organic clays of medium to high plasticity, organic silts.	Medium to high	None to very slow	Slight to medium		
Highly Organic Soils		Pt	Peat and other highly organic soils.	Readily identified by color, odor, spongy feel and frequently by fibrous texture				

Plasticity Index



LIQUID LIMIT
PLACTICITY CHART
For Laboratory classification of fine-grained soils

$C_u = \frac{D_{60}}{D_{10}}$ Greater than 4

$C_e = \frac{(D_{30})^2}{D_{10} \times D_{60}}$ Between 1 and 3

Not meeting all gradation requirements for GW

Atterberg limits below "A" line or P1 less than 4

Atterberg limits above "A" line with P1 greater than 7

Above "A" line with P1 between 4 and 7 are borderline cases requiring use of dual symbols.

$C_u = \frac{D_{60}}{D_{10}}$ Greater than 6

$C_e = \frac{(D_{30})^2}{D_{10} \times D_{60}}$ Between 1 and 3

Not meeting all gradation requirements for SW

Atterberg limits above "A" line or P1 less than 4

Atterberg limits above "A" line with Pl greater than 7

Limits plotting in hatched zone with P1 between 4 and 7 are borderline cases requiring use of dual symbols.

(1) Boundary classifications: Soils possessing characteristics of two groups are designed by combinations of group symbols. For example GM-GC, well-graded gravel-sand mixture with clay binder.
(2) All sieve sizes on this chart are U.S. standard.
(3) Adopted by Corps of Engineers and Bureau of Reclamation, January 1952

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FIELD IDENTIFICATION PROCEDURES FOR FINE-GRAINED SOILS OR FRACTIONS (Notes for Table 11-1)

These procedures are to be performed on the minus No. 40 sieve size particles, approximately 1/64 in. For field classification purposes, screening is not intended, simply remove by hand the coarse particles that interfere with the tests.

Dilatancy (reaction to shaking)

After removing particles larger than No. 40 sieve size, prepare a pat of moist soil with a volume of about one-half cubic inch. Add enough water if necessary to make the soil soft but not sticky.

Place the pat in the open palm of one hand and shake horizontally, striking vigorously against the other hand several times. A positive reaction consists of the appearance of water on the surface of the pat which changes to a livery consistency and becomes glossy. When the sample is squeezed between the fingers, the water and gloss disappear from the surface, the pat stiffens, and finally it cracks or crumbles. The rapidity of appearance of water during shaking and of its disappearance during squeezing assist in identifying the character of the fines in a soil.

Very fine clean sands give the quickest and most distinct reaction whereas a plastic clay has no reaction. Inorganic silts, such as a typical rock flour, show a moderately quick reaction.

Dry Strength (crushing characteristics)

After removing particles larger than No. 40 sieve size, mold a pat of soil to the consistency of putty, adding water if necessary. Allow the pat to dry completely by oven, sun or air-drying, and then test its strength by breaking and crumbling between the fingers. This strength is a measure of the character and quantity of the colloidal fraction contained in the soil. The dry strength increases with increasing plasticity.

High dry strength is characteristic for clays of the CH group. A typical inorganic silt possesses only very slight dry strength. Silty fine sands and silts have about the same slight dry strength, but can be distinguished by the feel when powdering the dried specimen. Fine sand feels gritty whereas a typical silt has the smooth feel of flour.

Toughness (consistency near plastic limit)

After particles larger than the No. 40 sieve size are removed, a specimen of soil about one-half inch cube in size, is molded to the consistency of putty. If too dry, water must be added and if sticky, the specimen should be spread out in a thin layer and allowed to lose some moisture by evaporation. Then the specimen is rolled out by hand on a smooth surface or between the palms into a thread about one-eighth inch in diameter. The thread is then folded and rerolled repeatedly. During this manipulation, the moisture content is gradually reduced and the specimen stiffens, finally loses its plasticity, and crumbles when the plastic limit is reached.

After the thread crumbles, the pieces should be lumped together and a slight kneading action continued until the lump crumbles.

The tougher the thread near the plastic limit and the stiffer the lump when it finally crumbles, the more potent is the colloidal clay fraction in the soil. Weakness of the thread at the plastic limit and quick loss of coherence of the lump below the plastic limit indicate either inorganic clay of low plasticity, or materials such as kaolin-type clays and organic clays which occur below the A-line.

Highly organic clays have a very weak and spongy feel at the plastic limit.

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(2) MEDIUM HARD ROCK. -Includes crystalline rocks of paragraph one of this subdivision, plus Inwood marble and serpentine. Characteristics are: all those listed in paragraph one of this subdivision, except that cracks may be one-quarter inch wide and slightly weathered, generally spaced no closer than two feet apart; core recovery with a double tube, diamond core barrel is generally fifty percent or greater for each five foot run.

(3) INTERMEDIATE ROCK. -Includes rocks of paragraphs one and two of this subdivision, plus cemented shales and sandstone of the Newark formation. Characteristics are: the rock gives dull sound when struck with pick or bar; does not disintegrate after exposure to air or water; broken pieces may show weathered surfaces; may contain fracture and weathered zones up to one inch wide spaced as close as one foot; core recovery with a double tube, diamond core barrel is generally thirty-five percent or greater for each five foot run.

(4) SOFT ROCK.- Includes rocks of paragraphs one, two and three of this subdivision in partially weathered condition, plus uncemented shales and sandstones. Characteristics are: rock may soften on exposure to air or water; may contain thoroughly weathered zones up to three inches wide but filled with stiff soil; core recovery with a double tube, diamond core barrel is less than thirty-five percent for each five foot run, but standard penetration resistance in soil sampling is more than fifty blows per foot. Where core recoveries are less than twenty percent and the material is to be used for bearing, a minimum three inches diameter core shall be recovered and the material recovered shall be classified in accordance with table 11-1.

(b) Special soil types. -

(1) FINE SAND.- Soils of group SM, containing more than fifty percent (by weight) of particles passing a number sixty mesh sieve.

(2) HARDPAN.- Soils of groups GM, GC, and SW, generally directly overlying rock, and which are sufficiently cemented to be difficult to remove by picking.

(3) CLAY SOILS.- Soils of each group SC, CL and CH shall be classified according to consistency as hard, medium, or soft in accordance with the following:

a. Hard clay.- A clay requiring picking for removal, a fresh sample of which cannot be molded by pressure of the fingers.

b. Medium clay.- A clay that can be removed by spading, a fresh sample of which can be molded by a substantial pressure of the fingers.

c. Soft clay. -A clay, a fresh sample of which can be molded with slight pressure of the fingers.

(4) SILT SOILS.- Soils of each group ML and MH shall be classified as dense, medium, or loose depending on relative difficulties of removal as described for hard, medium, and soft clays in paragraph three of this subdivision.

(5) VARVED SILT. -A natural soil deposit consisting of alternating thin layers of silt, clay, and sand in which the silt or silt plus sand layers predominate.

§[C26-1103.2] 27-676 Satisfactory bearing material.- The following materials, or any combination of them shall be considered as generally satisfactory bearing materials; hard sound, medium hard, intermediate, and soft rock; hardpan; granular soils of G and S groups;

dense or medium silt soils of groups ML and MH; and hard or medium clay soils of groups CL and CH.

§[C26-1103.3] 27-677 Nominally unsatisfactory bearing material. -Fill material, peat (group Pt), organic silts and clays (grouping OL and OH), soft or loose soils of groups ML, CL, HM and CH, varved silt, or satisfactory bearing materials that contain lenses of, or are underlain by, these materials shall be considered as nominally unsatisfactory bearing materials.

§[C26-1103.4] 27-678 Allowable soil bearing pressures.- The allowable bearing pressures on satisfactory bearing materials shall be those established in table 11-2. The allowable bearing pressures on nominally unsatisfactory bearing materials shall be those established in accordance with section 27-679 of this article. Allowable bearing pressure shall be considered to be the allowable pressure at a point in the soil mass in excess of the stabilized overburden pressure existing at the same point prior to construction operations. The stabilized overburden pressure existing at a point shall be defined as that portion of the weight of the overlying soil material that is supported by granular interaction rather than pore pressure. In general, the magnitude of the stabilized overburden pressure may be approximated as follows:

(a) The overlying soil material shall have been in place for an adequate length of time to produce a stable condition of pore pressure in, or below, the foundation level. Where the bearing stratum consists of soils of classes 5-65 through 8-65, the bearing stratum shall be considered to be fully consolidated except with regard to the weight of that portion of the overlying soil material that consists of added fill material.
(b) Where all or a portion of the overlying soil consists of fill material, the weight of the fill material shall not be included in the stabilized overburden pressure unless the magnitude of stabilized pressure is verified by an architect or engineer on the basis of laboratory or field tests on undisturbed material.
(c) Where the bearing stratum consists of soils of classes 9-65 through 11-65, the stabilized overburden pressure shall be considered as zero unless the magnitude of the stabilized pressure is established by an architect or engineer on the basis of laboratory or field tests on undisturbed material.

TABLE 11-2 ALLOWABLE SOIL BEARING PRESSURES

Class of Material	Description See Notes* (1)	Basic Allowable Bearing Values (Tons per sq. ft.) See Notes (10), (11), and (12)	
1-65	Hard Sound Rock…….	60	See Notes (2) and (8).
2-65	Medium Hard Rock……..	40	See Notes (2) and (8).
3-65	Intermediate Rock……	20	See Notes (2) and (8).
4-65	Soft Rock…….	8	
5-65	Hardpan……	—	See Notes (3) and (8).
6-65	Gravel and Gravel Soils (Soil Groups GW, GP, GM, & GC and soils of Soil Groups SW, SP, and SM containing more than 10% of material retained on a No. 4 sieve)……..	—	See Notes (4) and (8) and (9).
7-65	Sands (other than Fine Sands) (Soil Groups SW, SP, & SM but containing not more than 10% of material retained on a No. 4 sieve)……	—	See Notes (5) and (8) and (9).
8-65	Fine Sand…….	—	See Notes (6) and (8) and (9).
9-65	Clays and Clay Soils (Soil Groups SC, CL, & CH)		
	Hard…..……...	5	See Note (7).
	Medium.……..	2	See Note (7).
	Soft.…….	See Sec. 27-679.	
10-65	Silts and Silt Soils (Soil Groups ML & MH)		
	Dense……..	3	
	Medium……...	1.5	
	Loose……...	See Sec. 27-679.	
11-65	Nominally Unsatisfactory Bearing Materials	See Sec. 27-679.	

As enacted but "Note" probably intended.

Notes:

(1) Classification. The soil classifications indicated in this table are those described in section 27-675 of this article. Where there is doubt as to the applicable classification of a soil stratum, the allowable bearing pressure applicable to the lower class of material to which the given stratum might conform shall apply unless the conformance to the higher class of material can be proven by laboratory or field test procedures.

(2) Allowable bearing pressure on rock. The tabulated values of basic allowable bearing pressures apply only for massive rocks or, for sedimentary or foliated rocks, where the strata are level or nearly so, and, then only if the area has ample lateral support. Tilted strata and their relation to nearby slopes or excavations shall receive special consideration.

(3) Allowable bearing pressure on hardpan. For hardpan consisting of well cemented material composed of a predominantly granular matrix and free of lenses of fine grained material and inclusions of soft rock, the basic allowable bearing pressure shall be twelve tons per square foot. For hardpan consisting of poorly cemented material or containing lenses of fine grained material, inclusions of soft rock, or a fine grained matrix, the basic allowable bearing pressure shall be eight tons per square foot.

(4) Allowable bearing pressure on gravel and gravel soils. Values of basic allowable bearing pressure shall be as follows:

(a) For soils of Soils Groups GW,GP, GM, and GC:
Compact, well graded material—ten tons per square foot.
Loose, poorly graded material—six tons per square foot.
Intermediate conditions—Estimate by interpolation between indicated extremes.

(b) For soils of Soil Groups SW, SP, and SM, containing more than ten percent of material retained on a No. 4 sieve :
Compact, well graded material—eight tons per square foot.
Loose, poorly graded material—four tons per square foot.
Intermediate conditions—Estimate by interpolation between indicated extremes.

(5) Allowable bearing pressure on sands. The basic allowable bearing pressure shall be determined from the resistance to penetration of the standard sampling spoon. The basic allowable bearing pressure in tons per square foot shall equal 0.10 times N but not greater than six tons per square foot, nor less than three tons per square foot. The appropriate value for the penetration resistance at various areas of the site shall be made by averaging the measured resistance within a depth of soil below the proposed footing level equal to the width of the footing. Where the average values so obtained do not vary by more than twenty-five percent of the minimum of the average values over the site of the proposed building, the lowest average value shall be used for the design of the entire building. Where the variation exceeds twenty-five percent, the allowable bearing pressure shall be predicated on the lowest average value unless appropriate measures are taken to avoid detrimental amounts of differential settlements of the footings. Where the design bearing pressure on soils of class 7-65 exceeds three tons per square foot, the embedment of the loaded area below the adjacent grade shall not be less than four feet and the width of the loaded area not less than three feet, unless analysis shall demonstrate the proposed construction to have a minimum factor of safety of 2.0 against shear failure of the soil.

(6) Allowable bearing pressure on fine sand. The basic allowable bearing pressure shall be determined from the resistance to penetration of the standard sampling spoon. The basic allowable bearing pressure in tons per square foot shall equal 0.10 times N but not greater than four tons per square foot nor less than two tons per square foot, except that, for loose materials (resistance to penetration of the standard sampling spoon ten blows per foot or less), where the foundation is subjected to vibratory loads from machinery or similar cause, the indicated basic values shall not apply. The allowable bearing pressure shall be established by analysis applying accepted principles of soil mechanics and a report of such analysis satisfactory to the commissioner shall be submitted as a part of the application for the acceptance of the plans.

(7) Allowable bearing pressure on clays and clay soils. The bearing capacity of medium and hard clays and clay soils shall be established on the basis of the strength of such soils as determined by field or laboratory tests and shall provide a factor of safety against failure of the soul of not less than 2.0 computed on the basis of a recognized procedure of soils analysis, shall consider probable settlements of the building, and shall not exceed the tabulated maximum values.

(8) Increases in allowable bearing pressure due to embedment of the foundation. (a) The basic allowable bearing values for rock of classes 1-65, 2-65, and 3-65 shall apply where the loaded area is on the surface of sound rock. Where the loaded area is below the adjacent rock surface and is fully confined by the adjacent rock mass and provided that the rock mass has not been shattered by blasting or otherwise is or has been rendered unsound, these values may be increased ten percent of the base value for each foot of embedment below the surface of the adjacent rock surface in excess of one foot, but shall not exceed twice the basic values. (b) The basic allowable bearing values for soils of classes 5-65 through 8-65 determined in accordance with notes three, four, and five above, shall apply where the loaded area is embedded four feet or less in the bearing stratum. Where the loaded area is embedded more than four feet below the adjacent soil, these values may be increased five percent of the base value of each foot of additional embedment, but shall not exceed twice the basic values. Increases in allowable bearing pressure due to embedment shall not apply to soils of classes 4-65, 9-65, 10-65, or 11-65.

(9) Increase in allowable bearing pressure for limited depth of bearing stratum: The allowable bearing values for soils of classes 6-65, 7-65, and 8-65 determined in accordance with this table and the notes thereto (including note eight), may be increased up to one third where the density of the bearing stratum below the bottom of the footings or the tips of the piles increases with depth provided that: (a) The bearing stratum is not underlain by materials of a lower class. (b) The allowable bearing value of the soil material underlying the bottom of the footings or the tips of the piles increases at least fifty percent within a depth below the footing or the tips of the piles which is not greater than the width of the footing or the width of the polygon circumscribing the pile group. (c) It shall be demonstrated by a recognized means of analysis that the probable settlement of the foundation due to compression, and/or consolidation do not exceed acceptable limits for the proposed building.

(10) Combination of loads. The provisions of section 27-594 of article two of subchapter ten of this chapter shall apply.

(11) Correction for foundations bearing on materials of varying bearing capacities. Where it is shown by borings or otherwise that materials of varying bearing value will be used for support of a building: (1) Where the weakest material does not rank below class 5-65, no modifications shall be required. (2) Where the weakest materials rank as classes 6-65 through 8-65, if the difference in basic allowable bearing values for the several materials does not exceed thirty percent of the allowable value for the poorest material which is to support the foundation, the foundations may be proportioned in direct conformance with the allowable bearing pressures. Where the difference in basic allowable bearing values exceed thirty percent, appropriate measures shall be taken to limit the differential settlements of the different portions of the structure to tolerable values. (3) For materials of classes 9-65 and 10-65, in all cases, appropriate measures shall be taken to equalize the settlements of the different portions of the structure.

(12) Inundated footings. The provisions of this section relating to materials of classes 1-65 through 7-65, shall be deemed equally applicable both to the dry and to the inundated condition of the soil provided: (a) That the subgrade is undisturbed by the construction operations, (b) The bearing area is in a confined condition. For such cases, no reduction in allowable bearing value will be required where the soil supporting the foundation is subject to a rising level of inundation. However, the effects on settlement of a failing level of inundation occurring after construction of the foundation shall be considered in the design.

(d) The stabilized overburden pressure shall not include the weight of any soil removed by excavation and not replaced. For footings, the total stabilized overburden pressure shall not exceed the weight of a one square foot column of soil (considering submerged weight where the soil column is partly submerged) measured from the bottom of the footing to the lowest level of the final grade above the footing. For a box foundation, where the strength of the slab is adequate to stabilize the underlying soil, the stabilized overburden pressure shall not exceed the weight of a one square foot column of soil measured from the bottom of the box to the lowest level of the adjacent grade.

(e) Where the bearing stratum consists of soils of classes 9-65 through 11-65, the allowable bearing pressure shall be adjusted for the effects of rebound due to excavation as determined from consolidation test data.

(f) Where the bearing stratum consists of rock of classes 1-65 through 3-65, the stabilized overburden pressure shall be neglected.

§[C26-1103.5] 27-679 Bearing capacity of nominally unsatisfactory bearing materials.- Whenever soils exploration shows that the proposed foundation would rest on, or be underlain by, nominally unsatisfactory bearing materials, a report based on soil tests and foundation analysis (including analysis of undisturbed samples) shall be submitted by an architect or engineer, demonstrating, subject to the approval of the commissioner, that the proposed construction, under a condition of one hundred percent overload, is safe against failure of the soil materials. The report shall also show that the probable total magnitude and distribution of settlement to be expected under design conditions will not result in instability of the building or stresses in the structure in excess of the allowable values established in subchapter ten of this chapter. In addition, the following provisions shall apply:

(a) Fill materials. -

(1) CONTROLLED FILLS. -Fills shall be considered as satisfactory bearing materials of class 6-65 or 7-65 when placed in accordance with the following procedures, under the provisions for controlled inspection.

(a) Before placement of fill, the existing ground surface shall be stripped of all organic growth, timber, rubbish, and debris. After stripping, the ground surface shall be compacted to the density [described]* in subparagraph d of this paragraph.

Copy in brackets not enacted but probably intended.

(b) Materials for fill shall consist of sand, gravel, crushed stone, crushed gravel, or a mixture of these, and shall contain no organic matter. The fill materials shall contain no particles exceeding four inches in the largest dimension. No more than thirty per cent of the material shall be retained on a three-quarter inch sieve. The material passing the three-quarter inch sieve shall contain, by weight, no more than forty percent passing the one hundred sieve, or twelve percent passing the two hundred sieve.

(c) The grading of the fill shall be determined in accordance with the applicable procedures of reference standards RS 11-1 and RS 11-2.

(d) Fill shall be placed and compacted at its optimum moisture content, in uniform layers not more than twelve inches thick (after compaction) and each layer shall be thoroughly compacted to a density not less than ninety-five percent of the density prescribed in reference standard RS 11-3. The field density shall be verified by in-place density tests made on each lift of the embankment. Fill shall not be placed when frozen or placed on a frozen or wet sub-grade.

(2) UNCONTROLLED FILLS. -Fill material, other than controlled fill, may be used for the support of buildings, other than one-and two-family dwellings, and may be considered as satisfactory bearing material of applicable class, subject to the following:

a. The soil within the building area shall be explored using test pits. At least one test pit, penetrating at least eight feet below the level of the bottom of the proposed footings, shall be provided for every twenty-five hundred square feet of building area. Where such test pits consistently indicate that the fill is composed of material that is free of voids and free of extensive inclusions of mud, organic materials such as paper, garbage, cans, or metallic objects, and debris, the provisions of subparagraphs b and c of this paragraph shall apply. Where the test pits show such voids or inclusions, the additional provisions of subparagraph d of this paragraph shall apply. Borings may be used in lieu of test pits, provided that continuous samples at least four inches in diameter are recovered.

b. The building area shall be additionally explored using one standard boring under each column. These borings shall be carried to a depth sufficient to penetrate into natural ground, but not less than twenty feet below grade, and a sufficient number shall penetrate deeper than twenty feet as required to meet the provisions of section 27-663 of article two of this subchapter. Where such borings show voids or inclusions, the provisions of subparagraph d of this paragraph shall apply.

c. The allowable soil bearing pressure on the fill material shall not exceed two tons per square foot.

d. Wherever the fill shows voids or inclusions as described in subparagraphs a and b of this paragraph, either the fill shall be treated as having no presumptive bearing capacity, or the building shall incorporate adequate strength and stiffness to bridge such voids or inclusions or shall be articulated to prevent damage due to differential or localized settlement of the fill.

(b) Organic silts, organic clays, soft inorganic clay, loose inorganic silt, and varved silt. -

(1) The allowable bearing pressure shall be determined independently of table 11-2 subject to the following:

a. For varved silts, the soil bearing pressure produced by the proposed building shall not exceed two tons per square foot, except that for desiccated or preconsolidated soils, higher bearing pressures will be allowed.
b. For organic silts or clays (groups OL and OH) or for soft or loose soils of groups ML, CL, MH, and CH, the soil bearing pressure produced by the proposed building shall not exceed one ton per square foot except that a value of two tons per square foot will be permitted on soils that are adequately preconsolidated or artificially treated.
(2) The report required in this section shall contain, as a minimum, the following information:
a. Geological profiles through the area defining the stratigraphy.
b. Sufficient laboratory test data on the compressible material to indicate the coefficient of consolidation, coefficient of compressibility, permeability, secondary compression characteristics, and Atterberg limits.
c. Where the design contemplates improvement of the natural bearing capacity and/or reduction in settlements by virtue of preloading, cross sections showing the amount of fill and surcharge to be placed on* design details showing the required time for surcharging shall be indicated, and computations showing the amount of settlement to be expected during surcharging. Records of settlement plate elevations and pore pressure readings, before, during, and after surcharging, shall be filed with the commissioner.
As enacted but "and" probably intended.
d. The estimated amount and rate of settlement expected to occur after the structure has been completed, including the influence of dead and live loads of the structure.
e. A detailed analysis showing that the anticipated future settlement will not adversely affect the performance of the structure.
f. Where sand drains are to be used, computations showing the diameter, spacing, and method of installation of such drains, shall be provided.

(c) Artificially treated soils. -
Nominally unsatisfactory soil materials that are artificially compacted, cemented, or preconsolidated (including soils compacted by vibration, cemented by chemical injection, or preconsolidated by use of electric current, but not including cases where preconsolidation consists solely of the use of surcharge with or without sand drains) may be used for the support of buildings, and nominally satisfactory soil materials that are similarly treated may be used to resist soil bearing pressures in excess of those indicated in table 11-2 for the soil in its natural state, subject to the following:
(1) The vertical and lateral extent of the soil that is compacted, cemented, or preconsolidated shall conform to the full extent of the distribution of loading that is assumed for purposes of computing the intensities of the soil bearing pressure. The actual soil bearing pressure shall not exceed the limitations of subdivisions (a) and (b) of this section for nominally unsatisfactory bearing materials or, for satisfactory bearing materials, shall not exceed the limitations of table 11-2.
(2) After the treatment procedure, a minimum of one boring shall be made for every sixteen hundred square feet of that portion of the building area that is supported on treated soil, and a sufficient number of samples shall be recovered from the treated soil to demonstrate the efficacy of the treatment.

§[C26-1103.6] 27-680 Utility services. -Where utility service lines are to be laid in soil materials of class 11-65, provision shall be made to prevent damage to such services lines, as follows:
(a) Where the lines enter a structure, including a building, a manhole, or a junction chamber, that is rigidly supported on piles or in firm bearing material, the services shall be supported on piles or bearing materials of adequate firmness to prevent differential settlement of the service lines with respect to the structure; otherwise, provisions, such as oversized sleeves, flexible connections, utility tunnels, or other approved device, shall be made to permit the anticipated differential movement to occur without damage to the service lines.
(b) Where the lines enter a structure that is supported on soil materials of class 11-65 or on soft clay or loose silt deposits, an engineering analysis shall be made of the probable differential settlement of the utility service line with respect to the structure, and provision shall be made to accommodate such displacement, as described in subdivision (a) of this section.

ARTICLE 5 SOIL LOAD BEARING TESTS

§[C26-1104.1] 27-681 Applicability. -Soil load bearing tests made at the option and expense of the owner of the proposed structure and inspected in accordance with the provisions of section 27-132 of article seven of subchapter one of this chapter, controlled inspection, may be accepted by the commissioner as evidence of allowable bearing capacity of a given soil stratum, subject to the following limitations:
(a) The applicability of soil load bearing tests shall be limited to soil materials of classes 5-65 through 10-65.
(b) Soil load bearing tests shall not be used to justify allowable bearing pressures in excess of the maximum allowable bearing values established in table 11-2 for the applicable class of material.
(c) Soil load bearing tests shall not be applicable where the proposed bearing stratum is underlain by a stratum of lower class, unless analysis indicates that the presence of such lower stratum will not create excessive settlements of the building.

§[C26-1104.2] 27-682 Procedure. -

(a) Preparations. -

(1) A sketch showing the layout, levels, number of tests, details of test apparatus, and test procedures shall be filed with the commissioner before conducting such tests. The sketch shall also include the locations and levels of the proposed tests in relation to the contemplated foundation levels as well as the logs of borings that have been made for the building or buildings involved.

(2) The tests shall be made at the levels contemplated for the proposed building footings, and in at least two locations within the limits of the building area. The surfaces at the locations of the proposed tests shall be leveled at the elevations of the proposed test for a clear distance of at least five feet all around the test plate.

(3) The loaded area shall be square and at least twenty-four inches by twenty-four inches.

(4) When load tests are performed on materials affected by drying, suitable methods shall be used to prevent evaporation from the material.

(5) In the event ground water is present immediately [*sic*] below, at, or above the level required to be tested, dewatering facilities shall be installed to maintain ground water a minimum of four feet below the level of the test plate during the preparation and duration of the test or tests.

(6) Trenches and other provisions at the ground surface shall be made to prevent inflow of surface water and to remove water that may drain into the test area. The entire test area shall be protected against weather and rainfall for the entire duration of the test.

(7) The load platform providing the support for the test load shall be supported on adequate timber cribbing, which shall not be closer than five feet from the edge of the test plate.

(8) The plate on which the loads are applied shall be of steel having a minimum thickness of two inches and shall be set and centered in a depression in the bottom of the pit or loading area about thirty inches square for a twenty-four inch by twenty-four inch plate and eight inches deep. The area on which the plate is placed shall be scraped to remove any disturbed soil. The area to be tested shall be covered with a thin layer of fine clean sand that shall be smoothed and leveled until a completely level surface for placing the test plate is obtained.

(9) Settlement observations shall be made at four corners of test plate by means of dial extensometers. The extensometers shall provide readings to the nearest 0.001 in. In addition, settlement observations shall be taken using an engineer's level reading to 0.001 ft., properly referenced to a well-established benchmark.

(10) All tests shall be made under the surveillance of the commissioner, who shall be duly notified in order that he or she may be represented.

(b) Loading of the soil. -

(1) Loads shall be applied to the test plate by direct weight or by means of a hydraulic jack. The loading platform or box shall be constructed to provide a concentric load on the plate. If direct weight is employed, the loading increments shall be applied without impact or jar.

The weight of the blocking placed on the plate and the loading platform or box shall be obtained prior to the test and this weight shall be considered as the first increment of load. If a hydraulic jack is employed, facilities for maintaining each increment of desired load constant under increasing settlement shall be provided.

The gauge [*sic*] for the jack and the jack shall be calibrated as a unit not more than two weeks prior to the test.

(2) The unit intensity of the test load shall be one and one-half times the unit intensity of the loading proposed to be imposed on the soil by the design loads. The test load shall be applied in a minimum of six increments at twenty-five percent, fifty percent, seventy-five percent, one hundred percent, one hundred twenty-five percent, and one hundred fifty percent of the proposed working load. Each load increment shall be maintained for a length of time as follows:

a. At the proposed loading and at one hundred fifty percent of load until the settlement is less than 0.005 in. over a period of twenty-four hours.

b. At other loadings until the settlement is 0.001 in. or less, over a period of five minutes.

(3) Under each load increment, settlement observations shall be made and recorded at intervals of one-half minute, one minute, four minutes, and each four minutes thereafter after application of load increment except in the instance of the working load and one hundred fifty percent of working load where, after the four minute reading, the time interval shall be doubled successively until the final settlement limitation is reached and the load is increased or removed.

(4) After the test load and limiting rate of settlement under the test load is reached, loads shall be removed in not less than three equal increments and rebound observations made in the same manner as for the loading increments. The final rebound shall be recorded twenty-four hours after the entire test load has been removed.

(c) Determination of results. -

(1) Subject to the limitations designated in section 27-681 of this article, the soil load test for soils of classes 5-65 through 8-65 shall be considered as tentatively substantiating the ability of the soil to support the proposed unit intensity of loading if the gross settlement of the test plate under the proposed unit intensity of loading does not exceed one-half inch and the total gross settlement after the fifty percent overload is applied does not exceed one inch. This tentative substantiation shall be supported by a report by the architect or engineer on the correlation of

the behavior of the load test to the probable behavior of the full size building. The proposed design load shall be considered as acceptable only upon written acceptance by the commissioner.
(2) For soils of classes 9-65 and 10-65, the soil load test alone shall not be considered as evidence of allowable bearing capacity of the soil, but the data so obtained may be utilized to establish an allowable bearing capacity subject to the provisions of section 27-677 and 27-678 of article four of this subchapter.
(3) In the event that it is desired to conduct load tests on square areas larger than the minimum stipulated above, permission may be granted provided notice of such increase in area is properly filed with the test information required to be submitted to the commissioner. The limiting gross settlements stipulated in paragraph one of this subdivision shall be increased in relation to the increase in width of test plate in accordance with the following formula:

$$S = (9S_1 / 16)(2B/ B + 1)^2$$

where:
S = settlement of the larger loaded area (in.)
S_1 = permissible settlement of twenty-four inch by twenty-four inch loaded area, as specified in paragraph one of this subdivision (in.)
B = side dimension of square plate used for test (ft.)

ARTICLE 6 FOOTINGS, FOUNDATION PIERS, AND FOUNDATION WALLS

§[C26-1105.1] 27-683 Materials.- All structural elements of foundations as defined in section 27-585 of article one of subchapter ten shall meet the requirements as to type and minimum quality of materials prescribed in such subchapter. Inspection of materials and construction shall comply with the provisions of section 27-586 of such subchapter.

§[C26-1105.2] 27-684 Footings. - Inspections of subgrade of footings, piers and walls shall comply with the requirements of section 27-723 of article thirteen of this subchapter.
(a) Wood footings. -Wood footings may be used only for wood frame structures. Wood footings shall be given a preservative treatment in accordance with reference standard RS 11-4.
(**b) Pole buildings**. -Buildings not more than one story high may be supported on poles embedded in the ground. Wood poles shall conform to the requirements of reference standard RS 11-5 and shall be given a preservative treatment in accordance with reference standard RS 11-4. Steel poles embedded in the soil shall be protected as required by the provisions of paragraph one of subdivision (c) of section 27-685 of this article.
(c) Grillages. -Grillage beams shall be provided with proper spacers, stiffeners, [*sic*] and diaphragms, or the space between the beams shall be filled with concrete or grout. In addition, all steel grillages shall be fully protected against corrosion by encasement, coating with metal protection of a type satisfactory to the commissioner or by other approved device.
(d) Design. -
(1) CONCRETE FOOTINGS. -Concrete footings shall be proportioned in accordance with the provisions of reference standard RS 10-3. Reinforcement shall extend to within four inches of the edges of the footing.
(2) MASONRY FOOTINGS.- Masonry used for the construction of footings shall be of solid units.
a. Reinforced masonry footings shall meet the requirements of reference standard RS 10-2 and shall be proportioned similarly to the proportioning of reinforced concrete footings.
b. Unreinforced masonry footings shall be of such dimension that a sloping plane extending downward from the top of the footing where it intersects the pier of * wall, to the bottom of the footing, and measured at the angle with the horizontal that is indicated below, will be contained entirely within the footing:
As enacted but "or" probably intended.
Soil bearing capacity of three tons per square foot or less-sixty degrees.
Soil bearing capacity between three tons per square foot and six tons per square foot-seventy degrees.
Soil bearing capacity greater than six tons per square foot shall be investigated.
The compressive stress in the footing, based on the assumption that the vertical load is uniformly distributed over horizontal sections bounded by said planes, shall not exceed the values given in reference standard RS 10-1.

§[C26-1105.3] 27-685 Foundation piers.-
Foundation piers shall be designed as columns. Reinforced concrete piers shall be designed in accordance with the provisions of reference standard RS 10-3. Reinforced and unreinforced masonry piers shall be designed in accordance with the provisions of reference standards RS 10-2 and RS 10-1. Unreinforced concrete piers shall be designed in accordance with subdivision (b) of this section.
(a) Lateral support. -The equivalent unbraced length of a pier supported by lateral soil pressure may be determined by a recognized method of elastic analysis. Alternatively, such a pier may be assumed to be hinged, but laterally braced at intervals equal to the full height of the pier or eight times the least lateral dimension of the pier, whichever is the lesser value. The provisions of subdivision (e) of this section shall apply.
(b) Unreinforced concrete piers. -Where unreinforced concrete piers are used, the allowable compressive stress shall not exceed 0.25f 'c and the

center of cross section of the pier at any level shall not deviate from the line of action of the resultant of all forces (which line of action shall consider the eccentricities due to all loads and moments acting on the pier) by an amount more than one-sixtieth of its height or one-tenth of its least lateral dimension and the ratio of the height to the least lateral dimension shall not exceed eight. For larger values of the ratio of the height to the least lateral dimensions, or for greater eccentricities, piers shall be reinforced.

(c) Metal shells. -Where piers are encased by a metal shell, the shell may be considered as contributing to the structural strength of the pier provided that the thickness is one-eighth inch or greater, and subject to the following requirements:

(1) Where boring records or site conditions indicate possible deleterious action on the shell, where any portion of the shell is embedded in ash, cinder fill or garbage fill, where the encased piers are used for support of chemical plants, piles of coal, or under other conditions conducive to chemical seepage or corrosive action, or where the encased piers are used for support of electrical generating plants, the metal shells shall be protected against deterioration by encasement, coating, or other device acceptable to the commissioner.

(2) The area of the metal section of the shell multiplied by the efficiency of the horizontal joints shall be considered as equivalent vertical reinforcement of the pier. The area of the metal section of the shell, multiplied by the efficiency of the vertical joints, shall be considered as equivalent spiral reinforcement of the pier.

(d) Minimum dimensions.- The provisions of subdivision (e) of this section shall apply. In addition, the plan dimensions of the pier shall not be less than those of the column above. If the column above is a steel section resting on a base plate, the base plate and pier shall be proportioned for allowable bearing pressures as prescribed in reference standards RS 10-1, RS 10-2, and RS 10-3.

(e) Filling. -The provisions of subdivisions (a) and (d) of this section shall apply only where the fill (or backfill) is placed around the pier as controlled fill, and wherein the level of the fill is raised uniformly around the entire perimeter of the pier. Where the fill operation is not controlled the least lateral dimension of a foundation pier shall be twenty-four inches and the pier shall be proportioned for lateral pressure equal to the pressure of a differential height of fill equal to five feet, applied simultaneously with the other loads on the pier specified in article three of this subchapter.

§[C26-1105.4] 27-686 Foundation walls. -

(a) Concrete.- Concrete foundation walls shall be designed in accordance with the provisions of reference standard RS 10-3 relating to bearing or retaining walls. The equivalent unbraced height of a wall supported by lateral soil pressure may be determined by a recognized method of elastic analysis. Alternatively, such a wall may be assumed to be laterally braced at intervals as follows:

(1) Where fill is placed against both faces of the walls: the full height of the wall or eight times the thickness, whichever is the lesser value.

(2) Where both faces of the wall are not in contact with soil: the height of the unbraced section of the wall or eight times the thickness of the wall, whichever is greater, but not more than the full height of the wall.

(b) Masonry. -Masonry foundation walls shall conform to the provisions of reference standards RS 10-1 and RS 10-2, and the following:

(1) TYPES. -Masonry foundation walls may be of plain or reinforced masonry and shall be of solid units, except that load bearing hollow units will be permitted for support of one- and two-story buildings.

(2) WALL THICKNESS. -Foundation walls of masonry shall be designed and constructed in accordance with the provisions of reference standards RS 10-1 and RS 10-2, supplemented by the provisions of subdivision (a) of this section, relating to unbraced height. The thickness shall be at least six inches.

§[C26-1105.5] 27-687 Construction of footings, foundation piers, and foundation walls. -The provisions of sections 27-661 and 27-723 of this subchapter shall apply. In addition, methods of installation and construction shall satisfy the following conditions:

(a) Footings, piers, or walls shall be founded on undisturbed soil or on satisfactorily compacted or prepared materials.

(b) Accurate preparation and inspection of the bearing materials directly underlying the foundation shall be possible; and the bearing area shall be substantially level or suitably benched.

(c) Excavation shall be kept substantially free of water during construction of the foundation except that the use of tremie or similar underwater construction will be permitted in the case of foundations bearing directly on rock, provided that the construction procedure will permit thorough cleaning and preparation of the rock surface, and that the surface of the rock is maintained in a clean condition, unfouled by the inflow of soil or settlement of the fluid suspension, until the concrete is in place.

ARTICLE 7 PILE FOUNDATIONS-GENERAL REQUIREMENTS

§[C26-1106.1] 27-688 Administrative requirements. -

(a) Identification of piles. -A plan showing clearly the designation of all piles by an identifying system shall be filed with the commissioner prior to installation of such piles. All detailed records for individual piles shall bear an identification corresponding to that shown on the plan. A copy of such plan shall be available at the site for inspection at all times.

(b) Record of pile driving. -A record of the penetration and behavior of each pile during installation shall be kept by the architect or engineer designated in section 27-721 of article thirteen of this subchapter. Such records shall be prepared on forms furnished by, or satisfactory to, the commissioner and, upon the completion of pile installation, shall be filed with the commissioner together with the records of any additional borings or subsurface information obtained during installation of the piles, and plans showing any deviations of the pile or related constructions (including any corrective measures) from the details and locations shown on the approved plans. Inspection of piling and pile load tests shall conform to the requirements of section 27-721 of article thirteen of this subchapter.

§[C26-1106.2] 27-689 Minimum pile penetrations. -
(a) Required by soil bearing capacity. -The provisions of paragraph one of subdivision (b) of section 27-700 of article eight of this subchapter shall apply.
(b) Required for lateral restraint. -The provisions of section 27-694 of this article shall apply.
(c) Piles located near a lot line. -Piles located near a lot line shall be designed on the assumption that the adjacent lot will be excavated to a depth of ten feet below the nearest legally established curb level. Where such excavation would reduce the embedded length of the pile, the portion of the pile exposed shall be considered as providing no lateral or vertical support, and the load-carrying determination in accordance with the provisions of article eight of this subchapter shall be made after the resistance offered by the soil that is subject to potential excavation has been discounted.

§[C26-1106.3] 27-690 Use of existing piles at demolished structures.- Piles left in place where a structure has been demolished shall not be used for the support of new construction unless satisfactory evidence, including load or hammer testing of representative piles, can be produced indicating the capacity, length, and driving conditions of the piles. The load bearing value for such existing piles shall be the least of the values indicated by: (1) the load or hammer test, (2) the capacity of the pile as a structural member, and (3) the allowable bearing pressure on the soil underlying the pile tips, all in accordance with the provisions of article eight of this subchapter.

§[C26-1106.4] 27-691 Tolerance and modification of design due to field conditions. -
(a) Tolerance in alignment of the pile axis. -If the axis of any pile is installed out of plumb or deviates from the specified batter by more than four percent of the pile length, the design of the foundation shall be modified as may be necessary to resist the resulting vertical and lateral forces. In types of piles for which subsurface inspection is not possible, this determination shall be made on the exposed section of the pile, which section, at the time of checking axial alignment, shall not be less than two feet. In piles which can be checked for axial alignment below the ground surface, the sweep of the pile axis shall not exceed four percent of the embedded length.
(b) Tolerance in location of the head of the pile. -A tolerance of three inches from the designed location shall be permitted in the installation of each pile, without reduction in load capacity of the pile group. Where piles are installed out of position in excess of this amount, the true loading on such piles shall be analytically determined from a survey which defines the actual location of the piles as driven, and using the actual eccentricity in the pile group with respect to the line of action of the applied load. If the total load on any pile, so determined, is in excess of one hundred ten percent of the allowable load bearing capacity, correction shall be made by installing additional piles or by other methods of load distribution as required to reduce the maximum pile load to one hundred ten percent of the capacity.
(c) Bent piles. -Where piles have been bent during installation, and the amount of the bend exceeds the allowable tolerance for alignment of the pile axis in subdivision (a) of this section, the condition shall be investigated and, where required, correction made by the installation of additional piles, by strengthening the bent piles, by reduction in capacity or other means acceptable to the commissioner.

§[C26-1106.5] 27-692 Minimum spacing of piles.-
Piles shall be spaced to meet the following requirements:
(1) Spacing of piles shall provide for adequate distribution of the load on the pile group to the supporting soil, in accordance with the provisions of subdivision (b) of section 27-700 of article eight of this subchapter.
(2) In no case shall the minimum center-to-center spacing of piles be less than twenty-four inches, nor less than the values for specific types of piling as indicated in article ten of this subchapter. Unless special measures are taken to assure that piles will penetrate sufficiently to meet the requirements of section 27-689 of this article without interfering with or intersecting each other, the minimum center-to-center spacing of piles shall be twice the average diameter of the butt for round piles; one and three-quarters times the diagonal for rectangular piles; or, for taper piles, twice the diameter at a level two-thirds of the pile length measured up from the tip. In cases of practical difficulty, the spacing of new piles from existing piles under an adjacent building may be less than the above values provided that the requirements relating to minimum embedment and pile interference are satisfied and that the soil under the proposed and existing buildings is not overloaded by the closer pile grouping.

§[C26-1106.6] 27-693 Minimum section. -Except as provided in article ten of this subchapter for timber piles, no tapered pile shall be less than six inches in diameter at any section, nor have less than an eight inch diameter at cutoff. The taper of any tapered section may be uniform or may occur in steps. No pile of uniform section shall have a diameter of less than eight inches, or, if not circular, a dimension of less than seven and one-half inches. Tapered shoes or points of lesser dimensions may be attached to the tips of piles.

§[C26-1106.7] 27-694 Capping and bracing of piles.

(a) Capping of piles. -

(1) EMBEDMENT. -Tops of all piles shall be embedded at least three inches in concrete caps. Such concrete shall conform to the provisions of article five of subchapter ten of this chapter and shall extend at least four inches beyond the edge of all piles. Alternatively, and only where the piles project above the future grade and will be readily accessible for visual inspection at all times, the tops of the piles may be capped with timber or steel caps, which shall be connected to the piles. Cap plates will not be required for steel H piles embedded in a reinforced concrete cap. Inspection of pile caps shall be as required in section 27-722 of article thirteen of this subchapter.

(2) UPLIFT. -Where piles are subject to uplift, they shall be anchored into the cap to resist at least one and one-half times the amount of such uplift without exceeding the basic allowable stresses as established in subchapter ten.

(3) REINFORCEMENT. -Reinforcement shall be placed to provide at least three inches of clear cover, measured to the surface of the pile cap that is in contact with the ground. All reinforcement adjacent to timber or concrete piling shall have a minimum of one inch of concrete protection. Reinforcement shall extend to within four inches of the edges of the pile cap.

(4) DESIGN. -Except as modified above, concrete pile caps shall be designed in accordance with the provisions of reference standard RS 10-3.

(b) Bracing of piles. -Except for short piles as described in subdivision (c) of this section, every pile shall be laterally braced to conform with one or more of the following provisions:

(1) RIGID CAP. -Three or more piles connected by a rigid cap shall be considered as being braced provided that the piles are located in radial directions from the centroid of the group not less than sixty degrees apart (within a tolerance of three inches in location of the pile). A two-pile group, in a rigid cap, shall be considered to be braced along the axis connecting the two piles.

(2) BRACE BEAMS. -Piles may be braced by the use of brace beams or ties rigidly connecting to at least two other piles in radial directions not less than sixty degrees nor more than one hundred twenty degrees apart. Concrete brace beams shall have minimum dimensions of one-twentieth of the clear distance between pile caps, but not less than eight inches. All brace beams shall be proportioned to resist a minimum axial load equal to three percent of the total axial load capacity of the piles that are to be braced by that beam, plus the moment due to any eccentricity between the centroid of the pile group and the line of action of the applied load. Where underlain by soil of class 9-65, 10-65 or 11-65, brace beams shall be proportioned to support the weight of soil, slab-on-ground, and live load on the slab-on-ground that is contained within vertical planes projected upward from the lateral limits of the brace beam. The design of brace beams to resist these loads shall conform to the provision of subchapter ten of this chapter.

(3) CONCRETE SLAB-ON-GRADE. -A continuous concrete slab or mat on grade, that is five inches or more in thickness and reinforced, and that extends at least forty feet in each direction and is anchored to the pile caps (or in which the piles are embedded at least three inches), may be used in lieu of brace beams for bracing of pile caps, providing that the slab is supported on material having an allowable bearing pressure of one and one-half tons per square foot or better and such material is not underlain by nominally unsatisfactory bearing materials.

(4) OTHER MEANS.- Piles may be braced by anchors, anchor wall, or other means acceptable to the commissioner.

(5) FLOOR SYSTEM.- Single-pile or two-pile groups or a single line of piles may be considered to be adequately braced if connected to, and braced by, a self supporting floor system provided: (1) that the details and dimensions of the floor and the wall or pier are of adequate strength to resist lateral displacement of the pile cap under conditions of maximum eccentricity of the applied load; and (2) that the wall or pier is braced until connection of the floor framing is made and the flooring (or slab) is in place.

(6) SPECIAL REQUIREMENTS FOR BRACING BATTER PILES.- The provisions of paragraphs one through five of this subdivision above shall apply. In addition, provisions shall be made to oppose the lateral thrust resulting from the pile inclination.

(c) Bracing of short piles. -

(1) All pile caps supported by piles that penetrate less than ten feet below cutoff level or less than ten feet below ground level shall be braced against lateral movement. Such bracing may consist of connection to other pile caps that encompass piles embedded more than ten feet below those levels; the use of suitable anchors, connection to a slab-on-grade or the floor system as described in paragraphs three and five of subdivision (b) of this section, or by other equivalent means. The heads of the piles shall be fixed in the cap. In no event shall more than fifty percent of the piles in the foundation of any building penetrate less

than ten feet below cut-off-level or less than ten feet below ground level.
(2) Where the embedded length of piles located near a lot line would be reduced to less than ten feet by excavation of the adjacent site to a depth of ten feet below the nearest established curb level, the provisions of paragraph one of this subdivision shall apply.

§[C26-1106.8] 27-695 Splicing of piles.- Splices shall be constructed so as to provide and maintain true alignment and position of the component parts of the pile during installation and subsequent thereto, and shall be of adequate strength to transmit the vertical and lateral loads (including tensions) and the moments occurring in the pile section at the location of the splice without exceeding the allowable stresses for such materials as established in subdivision (a) of section 27-700 of article eight of this subchapter. Except for piles which can be visually inspected after driving, splices shall develop at least fifty percent of the capacity of the pile in bending. In addition, all pile splices in the upper ten feet of the pile section shall be capable of resisting (at allowable working stresses) the moment and shear that would result from an assumed eccentricity of the pile load of three inches, or the pile shall be braced in accordance with the provisions of section 27-694 of article seven of this subchapter to other piles that do not have splices in the upper ten feet of embedment. For piles located near a lot line, the embedded length of such piles shall be determined on the basis that the adjacent site will be excavated to a depth of ten feet below the nearest established curb level.

§[C26-1106.9] 27-696 General requirements for installation of piles. -
(a) Protection of adjacent property. -Piles shall be installed with adequate provision for the protection of adjacent buildings and property.
(b) Protection of the pile during installation. -Piling shall be handled and installed to the required penetration and resistance by methods that leave their strength unimpaired and that develop and retain the required load-bearing resistance. Any damaged pile shall be satisfactorily repaired or the pile shall be rejected. Subject to the approval of the commissioner, damaged piles may be used at a fraction of the design load as determined by the architect or engineer in lieu of repair or rejection.
(c) Protection of pile materials after installation. -Where boring records or site conditions indicate possible deleterious action on pile materials due to soil constituents, changing water levels, or other causes, such materials shall be adequately protected by preservatives or encasements that will not be rendered ineffective by driving and that will prevent such deleterious action. The following specific provisions shall apply:
(1) Untreated timber piles shall not be used unless the top level of the pile is below the permanent water table. The permanent water table level shall not be assumed higher than the invert level of any sewer, drain, or subsurface structure in the adjacent streets, nor higher than the water level at the site resulting from the lowest drawdown of wells or sumps, but in no case shall untreated timber piles be used where the cut-off level is less than ten feet below the adjacent legal grade. Where treated piles are required, preservative treatment shall consist of impregnation with creosote or a creosote solution or, for piles entirely embedded below grade, a pentachlorophenal solution may be used. Treatment shall be in accordance with all requirements of reference standard RS 11-6.
(2) Piles installed in ash or garbage fills, cinder fills, or which are free-standing in or near a seawater environment, or which are used for the support of chemical plants, coal piles or under similar conditions of chemical seepage or aggressive action, or which are used for support of electrical generating plants, shall be investigated regarding the need for special protective treatment and, where protective treatment is indicated, shall be protected against deterioration by encasement, coating, or other device acceptable to the commissioner.
(d) Equipment. -Equipment and methods for installing piles shall be such that piles are installed in their proper position and alignment, without damage. Equipment shall be maintained in good repair.

§[C26-1106.10] 27-697 Use of uncased concrete pile shafts.- The use of uncased shafts (i.e., where the concrete of the pile shaft is in direct contact with the surrounding soil) will be permitted under the following conditions:
(a) For bored piles. -Where the bored hole is maintained free of water before and during placement of the concrete and the sides and bottom can be inspected prior to such placement, and provided that no displacement pile shall be installed within fifteen feet of any bored pile.
(b) For driven piles (including all piles wherein installation utilizes a temporary casing).- The maximum length of the uncased shaft shall be limited to ten feet unless otherwise permitted by the commissioner. Uncased shafts will be permitted to be formed in soil below the water table but shall not be formed in any soil of class 9-65 that is of medium or soft consistency; in any soil of class 10-65 that is of medium or loose density; or in any soil of class 11-65.

§[C26-1106.11] 27-698 Where more than one pile type, pile capacity, or method of pile installation is used.- Wherever it is proposed to: (1) construct a foundation for a building utilizing piles of more than one type or capacity; (2) modify an existing foundation by the addition of piles of a type or capacity other than those of the existing piling; (3) construct or modify a foundation utilizing different methods or more than one method of installation, or using different types or capacities of equipment

(such as different types of hammers having markedly different striking energies or speeds); or (4) support part of a building on piles and part on footings, the several parts of the building supported on the different types, capacities, or modes of piling shall be separated by suitable joints providing for differential movement, or a report shall be submitted by the architect or engineer establishing to the satisfaction of the commissioner that the proposed construction is adequate and safe, and showing that the probable settlements and differential settlements to be expected will not result in instability of the building or stresses in the structure in excess of the allowable values established in subchapter ten of this chapter. The provisions of subdivision (d) of section 27-700 of article eight of this subchapter relating to required load tests shall apply separately and distinctly to each different type or capacity of piling, method of installation, or type or capacity of equipment used, except where analysis of the probable, comparative behavior of the different types or capacities of the piles or the methods of installation indicates that data on one type or capacity of pile permits a reliable extrapolation of the probable behavior of the piles of other types and capacities.

§[C26-1106.12] 27-699 Pile materials. -
The provisions of sections 27-580 and 27-588 of article one of subchapter ten of this chapter relating to "classification of materials, assemblies and methods of construction" and to the use of "used and unidentified materials" shall apply.

ARTICLE 8 PILE FOUNDATIONS-LOADS

§[C26-1107.1] 27-700 Allowable axial load. -The allowable axial load on a pile shall be the least value permitted by consideration of the following factors (for battered piles, the axial load shall be computed from the resultant of all vertical loads and lateral forces occurring simultaneously):

1. The capacity of the pile as a structural member.
2. The allowable bearing pressure on soil strata underlying the pile tips.
3. The resistance to penetration of the piles, including resistance to driving, resistance to jacking, the rate of penetration, or other, equivalent criteria as established in this section.
4. The capacity as indicated by load test, where load tests are required.
5. The maximum loads prescribed in subdivision (e) of this section.

(a) The capacity of the pile as a structural member.-
(1) EMBEDDED PORTION OF THE PILE. -
The compressive stress on any cross section of a pile produced by that portion of the design load that is considered to be transmitted to that section shall not exceed the allowable values for the construction materials as established in table 11-3. The tensile stress shall not exceed the values established in subchapter ten of this chapter for like material.
(2) PORTION OF THE PILE THAT IS NOT EMBEDDED.- That portion of any pile that is free standing in air or water shall be designed as a column in accordance with the provisions of subchapter ten of this chapter, fixed at a point five feet below the soil contact level in class 8-65 material or better and ten feet below in any other material. The conditions of lateral and rotational restraint offered by the pile cap shall be considered in determining the equivalent unbraced length.
(3) LOAD DISTRIBUTION ALONG EMBEDDED PORTION OF THE PILE. -The portion of the design load acting on any cross-section of a pile may be determined by analysis, considering time dependent changes in distribution of the load. As an alternative method for the purposes of this section, it may be assumed that:
a. For piles embedded forty feet or more in materials of class 10-65 or better, or in controlled fills, and bearing on or in materials of classes 1-65 to 5-65: seventy-five percent of the load shall be assumed to be carried by the tip. For shorter piles, with similar conditions of embedment and bearing, one hundred percent of the load shall be assumed carried by the tip.
b. For piles embedded in materials of class 10-65 or better, or in controlled fills, and bearing on or in materials of classes 6-65 to 10-65 (or controlled fills): the full load shall be assumed to act at a cross section located at two-thirds of the embedded length of the pile measured up from the tip. Where tapered piles are used, the stress at all sections of the pile shall be determined on the basis that the full load acts at a location as described above and that one-third of the full load acts at the tip. The stresses so computed shall not exceed the allowable values in table 11-3.
c. For conditions not covered in subparagraphs a and b of this paragraph three the provisions relating to analysis shall apply.

(b) Allowable bearing pressure on soil strata underlying the pile tips. -
(1) BEARING CAPACITY. -The allowable pile load shall be limited by the provision that the pressures in materials at and below the pile tips, produced by the loads on individual piles and by the aggregate of all piles in a group or foundation, shall not exceed the allowable bearing values established in article four of this subchapter. The provisions of section[s]* 27-678 and 27-679 of article four of this subchapter shall apply. The transfer of load from piles to soil shall be determined by a recognized method of analysis. As an alternative, for purposes of this section, piles or pile groups may be assumed to transfer their loads to the underlying materials by spreading the load uniformly at an angle of sixty degrees with the horizontal, starting at a polygon circumscribing the piles, located as follows:

Copy in brackets not enacted but probably intended.

TABLE 11-3 ALLOWABLE COMPRESSIVE STRESS FOR PILE MATERIALS

Pile Material	Allowable Compressive Stress
Concrete	Concrete—The provisions of Reference Standard RS 10-3 relating to short compression members shall apply. For working stress design use $0.25f'_c$. For ultimate strength design use minimum eccentricity of 5 per cent, phi = 0.70 (phi = 0.75 where a permanent metal shell having a minimum wall thickness of 1/8 inch is used), and load factors as specified in Reference Standard RS 10-3. The above provisions shall be deemed applicable to reinforced and unreinforced sections. For unreinforced sections use Ds = D and d = t (symbols refer to those used in Reference Standard RS 10-3).
	Reinforcing steel—$0.40f_y$ but not greater than 30,000 psi. (The provisions of article five of subchapter ten of this chapter relating to ties, spirals, and percentages of reinforcing steel for reinforced concrete compression members shall apply.)
Timber	See timber piles (section 27-707 of article eight of this subchapter).
Steel	H piles-$0.35f_y$, with f_y not to be taken as greater than 36,000 psi. Minimum thickness of metal shall be 0.40. Pipe piles, shells for cast–in place concrete piles and shells of pipe sections used in caisson piles: 0.35 f_y, (f_y not to be taken as greater than 36,000 psi.) for thickness of 1/8 in. or more. Metal thinner less* than 1/8 in. shall not be considered as contributing to the structural strength of the pile section.
	Core sections for caisson piles: $0.50f_y$ with f_y not to be taken as greater than 36,000 psi.

Notes for Table 11-3:
f'_c = 28 day compressive strength of concrete.
f_y = Minimum specified yield strength of steel.
* "less" not enacted but probably intended.

a. For piles embedded entirely in materials of classes 4-65 to 8-65, or in controlled fill materials, the polygon shall be circumscribed at a level located two-thirds of the embedded length of the pile, measured up from the tip.
b. For piles penetrating through soils of classes 9-65, 10-65, or 11-65 into bearing in soils of class 8-65 or better, the polygon shall be circumscribed at the bottom of the strata of class 9-65, 10-65 or 11-65 materials.
c. In the case of piles having enlarged bases, the lateral distribution of the load to the soil may be assumed to begin at the junction of the shaft and the enlarged base and to extend as follows:
1. In the case where the enlarged base is formed in loose or medium compact (N value less than thirty) soils of class 6-65 or 7-65 that extend twenty feet or more below the junction of the base and shaft, or that are of lesser extent but are directly underlain by soil of class 5-65 or better, the bearing area may be taken at a plane six feet below said junction but not lower than the bottom of the soil strata of class 6-65 or 7-65.
2. Where the enlarged base is formed in compact (N value thirty to sixty) soils of class 6-65 or 7-65, or in any soil of these classes that extends less than twenty feet below the junction of the base and the shaft and that is underlain by soil of class 8-65 or poorer, the bearing area shall be taken at planes less than six feet below said junction, with a lower limit of three feet where the material is very compact (N value sixty, or greater) and the extent of the class 6-65 or 7-65 material is ten feet below the junction of shaft and base. (The provisions of subdivision (e) of section 27-710 of article ten of this subchapter relating to minimum depth of bearing stratum below the junction of base and shaft shall apply.) For conditions intermediate between that described in clause one of this subparagraph and the lower limit conditions described here, the location of the bearing area may be determined by linear interpolation between the indicated limits of N value and extent of bearing material below the junction of shaft and base, giving equal weight to both variables.
3. Where the enlarged base is formed in or on soils of class 4-65 or 5-65, the bearing area shall be taken at a depth below the junction of the shaft and base consonant with the size and depth of the base formed, and as evaluated from the required test piles.
d. For all piles bearing on soils of classes 1-65 to 3-65, analysis of load distribution will not be required if the requirements relating to capacity of the pile as a structural member, to resistance to penetration, to load test where required, and to maximum tabulated loads are satisfied.
e. For piles bearing in soils of classes 9-65 and 10-65, for cases not described above, or for any case where the method of installing the pile utilizes a temporary casing, the provision relating to analysis shall apply.
f. In no case shall the area considered as supporting the load extend beyond the intersection of the sixty degree planes of adjacent piles or pile groups.
(2) BEARING STRATUM.- The plans for the proposed work shall establish, in accordance with the requirements relating to allowable bearing pressure, the bearing strata to which the piles in the various sections of the building are to be penetrated and the approximate elevations of the top of such bearing strata. Where penetration of a given distance into the bearing strata is required for adequate distribution of the loads, such penetration shall be shown on the plans. The indicated elevations of the top of the bearing strata shall be modified by such additional data as may be obtained during construction.

All piles shall penetrate to or into the designated bearing strata.

(c) Capacity as indicated by resistance to penetration.- Where subsurface investigation, as described in article two of this subchapter, or general experience in the area, indicates that the soil that must be penetrated by the pile consists of glacial deposits containing boulders, or fills containing riprap, excavated detritus, masonry, concrete, or other obstructions in sufficient numbers to present a hazard to the installation of the piles, the selection of type of pile and penetration criteria shall be subject to the approval of the commissioner but in no case shall the minimum penetration resistance be less than that stipulated in tables 11-4 and 11-5.

(1) PILES INSTALLED BY USE OF STEAM-POWERED, AIR-POWERED, DIESEL-POWERED OR HYDRAULIC IMPACT HAMMERS. -

a. The minimum required driving resistance and the requirements for hammer energies for various types and capacities of piles are given in tables 11-4 and 11-5. To obtain the required total driving resistance, the indicated driving resistances shall be added to any driving resistance experienced by the pile during installation, but which will be dissipated with time (resistance exerted by non-bearing materials or by materials which are to be excavated). For purposes of this section, the resistance exerted by non-bearing materials may be approximated as the resistance to penetration of the pile recorded when the pile has penetrated to the bottom of the lowest stratum of nominally unsatisfactory bearing material (class 11-65, but not controlled fill) or to the bottom of the lowest stratum of soft or loose deposits of class 9-65 or 10-65 but only where such strata are completely penetrated by the pile. The provisions of articles nine and ten of this subchapter shall also apply.

b. Alternate for similitude method. -The requirement for installation of piling to the penetration resistances given in tables 11-4 and 11-5 will be waived where the following five conditions prevail:

1. The piles bear on, or in, soil of class 5-65 through class 10-65.
2. The stratigraphy, as defined by not less than one boring for every sixteen hundred square feet of building area, shall be reasonably uniform or divisible into areas of uniform conditions.
3. Regardless of pile type or capacity, one load test, as described in subdivision (d) of this section, shall be conducted in each area of uniform conditions, but not less than two typical piles for the entire foundation installation of the building or group of buildings on the site, nor less than one pile for every fifteen thousand square feet of pile foundation area shall be load tested.
4. Except as permitted by the provisions of clause six of this subparagraph, all building piles within the area of influence of a given load-tested pile of satisfactory performance shall be installed to the same or greater driving resistance as the successful load-tested pile. The same or heavier equipment of the same type that was used to install the load-tested pile shall be used to install all other building piles, and the equipment shall be operated identically. Also, all other piles shall be of the same type, shape, external dimension, and equal or greater cross-section as the load-tested pile. All building piles within the area of influence represented by a given satisfactory load-tested pile shall bear in, or on the same bearing stratum as the load test pile.
5. A report by an architect or engineer shall be submitted establishing to the satisfaction of the commissioner, that the soil bearing pressures do not exceed the values permitted by the provisions of article four of this subchapter and that the probable differential settlements will not cause stress conditions in the building in excess of those permitted by the provisions of subchapter ten of this chapter.
6. Where the structure of the building or the spacing and length of the piling is such as to cause the building and its foundation to act as an essentially rigid body, the building piles may be driven to length and/or penetration into the bearing stratum without regard to penetration resistance, subject to the requirement of clause five of this subparagraph, relating to submission of report.

(2) PILES INSTALLED BY JACKING OR OTHER STATIC FORCES.- The carrying capacity of a pile installed by jacking or other static forces shall be not more than fifty percent of the load or force used to install the pile to the required penetration, except for piles jacked into position for underpinning. The working load of a temporary underpinning pile shall not exceed the total jacking force at final penetration. The working load of each permanent underpinning pile shall not exceed the larger of the following values: two-thirds of the total jacking force used to obtain the required penetration if the load is held constant for seven hours without measurable settlement; or one-half of the total jacking force at final penetration if the load is held for a period of one hour without measurable settlement. The jacking resistance used to determine the working load shall not include the resistance offered by non-bearing materials which will be dissipated with time.

(3) PILES INSTALLED BY USE OF VIBRATORY HAMMER. -The capacity of piles installed by vibratory hammer shall not exceed the value established on the principle of similitude, as follows:

a. Comparison piles, as required by the provisions of subdivision (d), of this section, shall be installed using an impact hammer and driving resistances corresponding to the proposed pile capacities as determined in paragraph one of subdivision (c) of this section or to tip elevations and driving resistances as determined by the architect or engineer.

TABLE 11-4 MINIMUM DRIVING RESISTANCE AND MINIMUM HAMMER ENERGY FOR STEEL H-PILES, PIPE PILES, PRECAST AND CAST-IN-PLACE CONCRETE PILES AND COMPOSITE PILES (other that timber)

		Minimum Driving Resistance [a,c,[d]*,e]				
Pile Capacity (tons)	Hammer[b] Energy (ft. lbs.)	Friction Piles (blows/ft.)	Piles Bearing on Hardpan (Soil Class 5-65) (blows/ft.)	Non- Displacement Piles Bearing on Decomposed Rock (Soil Class 4-65) (blows/ft.)	Displacement Piles Bearing on Decomposed Rock (Soil Class 4-65) (blows/ft.)	Piles Bearing on Rock (Soil Classes 1-65, 2-65, & 3-65)
Up to 20	15,000	19	19	48	48	
	19,000	15	15	27	27	
	24,000	11	11	16	16	
30	15,000	30	30	72	72	
	19,000	23	23	40	40	
	24,000	18	18	26	26	
40	15,000	44	50	96	96	
	19,000	32	36	53	53	
	24,000	24	30	34	34	
50	15,000	72	96	120	120	5 Blows per ¼ inch (Minimum hammer energy of 15,000 ft. lbs.)
	19,000	49	54	80	80	
	24,000	35	37	60	60	
	32,000	24	25	40	40	
60	15,000	96		240	240	
	19,000	63		150	150	
	24,000	44		100	100	
	32,000	30		50	50	
70 & 80	19,000 24,000 32,000		5 Blows per ¼ inch (Minimum hammer energy of 15,000 ft. lbs.)	5 Blows per ¼ inch (Minimum hammer energy of 19,000 ft. lbs.)		
100 Over 100**						

Copy in brackets not enacted but probably intended.
****Appears with no corresponding hammer energy on original text.***

Notes for Table 11-4:

a. Final driving resistance shall be the sum of tabulated values plus resistance exerted by non-bearing materials. The driving resistance of non-bearing materials shall be taken as the resistance experienced by the pile during driving, but which will be dissipated with time and may be approximated as described in subparagraph a of paragraph one of subdivision (c) of this section.

b. The hammer energy indicated is the rated energy.

c. Sustained driving resistance—where piles are to bear in soil classes 4-65 and 5-65, the minimum driving resistance shall be maintained for the last six inches, unless a higher sustained driving resistance requirement is established by load test. Where piles are to bear in soil classes 6-65 through 10-65, the minimum driving resistance shall be maintained for the last twelve inches unless load testing demonstrates a requirement for higher sustained driving resistance. No pile need be driven to a resistance to penetration (in blows per inch) more than twice the resistance indicated in this table, nor beyond the point at which there is not measurable net penetration under the hammer blow.

d. The tabulated values assume that the ratio of total weight of pile to weight of striking part of the hammer does not exceed 3.5. If a larger ratio is to be used, or for other conditions for which no values are tabulated, the driving resistance shall be as approved by the commissioner.

e. For intermediate values of pile capacity, minimum requirements for driving resistance may be determined by straight line interpolation.

TABLE 11-5 MINIMUM DRIVING RESISTANCE AND HAMMER ENERGY FOR TIMBER PILES

Pile Capacity (tons)	Minimum Driving Resistance (blows-in.) to be added to driving resistance exerted by non-bearing materials [1,3,4]	Hammer Energy (ft.-lbs.) [2]
Up to 20	Formula in Note[4] shall apply	7,500-12,000
Over 20 to 25		9,000-12,000 14,000-16,000
Over 25 to 30		12,000-16,000 (single-acting hammers)
Greater than 30		15,000-20,000 (double-acting hammers)

Notes for Table 11-5:

[1]The driving resistance exerted by non-bearing materials is the resistance experienced by the pile during driving, but which will be dissipated with time and may be approximated as described in subparagraph a of paragraph one of subdivision (c) of this section.

[2]The hammer energy indicated is the rated energy.

[3]Sustained driving resistance. Where piles are to bear in soil classes 4-65 and 5-65, the minimum driving resistance shall be maintained for the last six inches, unless a higher sustained driving resistance requirement is established by load test. Where piles are to bear in soil classes 6-65 thru 10-65, the minimum driving resistance measured in blows per inch shall be maintained for the last twelve inches, unless load testing demonstrates a requirement for higher sustained driving resistance. No pile need to be driven to a resistance to penetration (in blows per inch) more than twice the resistance indicated in this table nor beyond the point at which there is no measurable net penetration under the hammer blow.

[4]The minimum driving resistance shall be determined by the following formula:

$$P = \frac{2W_hH}{s+0.1} \quad \text{or} \quad P = \frac{2E}{s+0.1}$$

Where: P = Allowable pile load in pounds.
W_p = Weight driven in pounds.
W_h = Weight of striking part of hammer in pounds
H = Actual height of fall of striking part of hammer in feet.
E = Rated energy delivered by the hammer per blow in foot lbs.
s = Penetration of pile per blow, in inches, after the pile has been driven to a depth where successive blows produce approximately equal net penetration.

The value $\frac{W_p}{W_h}$ shall not exceed three.

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b. For each comparison pile, install an identical index pile by use of the vibratory hammer at a location at least four feet, but not more than six feet, from each comparison pile. The index piles shall be installed to the same tip elevation as the comparison pile, except that where the comparison piles bear on soils of classes 1-65 to 5-65, the index piles shall bear in, or on, similar material. All driving data for the index pile shall be recorded.

c. The index piles shall be load tested in accordance with the provisions of subdivision (d) of this section. Should the specified load test criteria indicate inadequate capacity of the index piles, steps a, b, and c shall be repeated using longer, larger, or other types of piles.

d. All building piles within the area of influence of a given, satisfactorily tested index pile shall be installed to the same or lesser rate of penetration (in. per min.) as of the successful index pile. The same equipment that was used to install the index pile, identically operated as to rpm, manifold pressure, etc., shall be used to install the building piles. Also, all building piles shall be of the same type, size, and shape as the index pile. All building piles within the area of influence as represented by a given satisfactorily tested index pile shall bear in, or on, the same bearing stratum as the index pile.

(d) Capacity as indicated by load test. -Load test of piling shall be required as follows:

(1) PILES INSTALLED BY STATIC FORCES. -The load bearing capacity of all types and capacities of piles installed by static forces, other than caisson piles and underpinning piles, shall be demonstrated by load test.

(2) PILES DRIVEN BY IMPACT HAMMERS. -The load bearing capacity of piles installed by impact hammers shall be demonstrated by load test when the proposed pile capacity exceeds the following values:

a. Caisson piles-no load test required.

b. Piles installed open end to rock of class 1-65, 2-65 or 3-65-one hundred tons, except as provided in subparagraph d of this paragraph, and except that no load tests will be required for piles up to two hundred tons capacity wherein the pile load does not exceed eighty percent of the load determined on the basis of limiting stresses in the pile materials and provided that the pipe or shell be driven to the resistance indicated in table 11-4.

c. Piles bearing on rock or hardpan (soil classes 1-65 to 5-65) other than as described in subparagraph b of this paragraph, and except as provided in subparagraph d of this paragraph-forty tons.

d. Piles bearing on materials of class eight or better, wherein, on the assumption that one hundred percent of the load reaches the pile tip, (or, in case of piles having an enlarged base or other enlargement of the bearing area, the top of the enlargement), the bearing pressure on the soil underlying the tips or bases can be demonstrated to be equal to or less than the values of basic allowable pressure indicated in table 11-2-provided that the class and density of the bearing material supporting the piles be confirmed by not less than one boring at each column location, then the commissioner may reduce the required number of load tests.

e. All other types of piles-thirty tons.

(3) PILES INSTALLED BY USE OF VIBRATORY HAMMERS. -The load bearing capacity of all types and capacities of piles (other than caisson piles) shall be demonstrated by load test.

(4) LOAD TEST PROCEDURES. -Before any load test is made, the proposed apparatus and structure to be used in making the load test shall be satisfactory to the commissioner and when required by him or her, all load

tests shall be made under the commissioner's surveillance or that of his or her representative. A complete record of such tests shall be filed with the commissioner.

a. Areas of the foundation site within which the subsurface soil conditions are substantially similar in character shall be established. In addition, for friction piles bearing on*, or on, soil materials of class 6-65, or poorer, the uniformity of each such area shall be verified by installing at least three penetration-test piles, distributed over the area. Continuous records of penetration resistance shall be made for such piles. If the records of penetration resistance are not similar or are not in reasonable agreement with the information obtained from the borings, the assumed areas of similar subsurface conditions shall be modified in accordance with the information derived from the penetration-test piles and additional penetration-test piles shall be installed as required to verify the uniformity of such areas.

As enacted but "in" probably intended.

b. For piles installed by jacking or other static forces or by impact hammer, one load test shall be conducted in each area of uniform conditions, but not less than two typical piles for the entire foundation installation of the building or group of buildings on the site, and not less than one pile for each fifteen thousand square feet of the area of the building wherein said piles are to be used shall be load tested. For piles installed by use of vibratory hammers, one comparison pile shall be installed and one index pile shall be load tested in each area of uniform conditions, but not less than two index piles shall be tested for the entire foundation installation of the building or group of buildings on the site, nor less than one index pile be tested for every seventy-five hundred square feet of pile foundation area. For piles whose capacity is determined on the basis of similitude, the provisions of subparagraph b of paragraph one of subdivision (c) of this section shall apply.

c. The load test shall be conducted by a method that will maintain constant load under increasing settlement. Settlement observations shall be made by means of dial extensometers. The extensometers shall provide readings to the nearest one one-thousandth of an inch. In addition, settlement observations shall be taken using an engineer's level reading to one one-thousandth of a foot, properly referenced to a well-established benchmark.

1. Test loads shall be applied by direct weight or by means of a hydraulic jack. The loading platform or box shall be carefully constructed to provide a concentric load on the pile. If direct weight is employed, the loading increments shall be applied without impact or jar. The weight of the loading platform or box shall be obtained prior to the test and this weight shall be considered as the first increment of load. If a hydraulic jack is employed, facilities for maintaining each increment of desired load constant under increasing settlement shall be provided. The gauge and the jack shall be calibrated as a unit for each project.

2. The test load shall be twice the proposed working load of the pile. The test load shall be applied in seven increments at a load of fifty percent, seventy-five percent, one hundred percent, one hundred twenty-five percent, one hundred fifty percent, one hundred seventy-five percent, and two hundred percent of the proposed working load. After the proposed working load has been applied and for each increment thereafter, the test load shall remain in place until there is no measurable settlement in a two hour period. The total test load shall remain in place until settlement does not exceed one one-thousandth of a foot in forty-eight hours. The total load shall be removed in decrements not exceeding twenty-five percent of the total load at one hour intervals or longer. The rebound shall be recorded after each decrement is removed, and the final rebound shall be recorded twenty-four hours after the entire test load has been removed.

3. Under each load increment, settlement observations shall be made and recorded at one-half minute, one minute, two minutes, four minutes, and each four minutes thereafter after application of load increment, except in the instance of the total load where, after the four minute reading, the time interval shall be successively doubled until the final settlement limitation is reached and the load is removed.

4. The allowable pile load shall be the lesser of the two values computed as follows:

(a) Fifty (50) percent of the applied load causing a net settlement of the pile of not more than one one-hundredth of an inch per ton of applied load. Net settlement in this paragraph means gross settlement due to the total test load minus the rebound after removing one hundred percent of the test load.

(b) Fifty (50) percent of the applied load causing a net settlement of the pile of three-quarters of an inch. Net settlement in this paragraph means the gross settlement as defined in subclause (a) of clause 4 of this subparagraph, less the amount of elastic shortening in the pile section due to total test load.

(5) FOUNDATION PILES. -Except as provided in clause six of subparagraph b of paragraph one of subdivision (c) of this section, all building piles within the area of influence of a given load-tested pile of satisfactory performance, shall be installed to the same or greater penetration resistance (or static load) as the successful load-tested pile. The same equipment (or heavier equipment of the same type) that was used to install the load-tested pile shall be used to install all other building piles, and the equipment shall be operated identically. Also all other piles shall be of the same type, shape, external dimension, and equal or greater cross section as the load-tested pile. All building piles within the area of influence represented by a given satisfactory load-tested pile shall bear in, or on the same bearing stratum as the load-tested pile. For friction piles where the actual pile lengths vary more than fifty percent from that of the test pile, the commissioner may require investigation to determine the adequacy of the piles.

(6) PILE GROUPS.- When the commissioner has reasons to doubt the safe load sustaining capacity of pile groups, he or she may require at the expense of the owner, group load tests up to one hundred fifty percent of the proposed group load.

(7) "CASING-OFF".- Any temporary supporting capacity that the soil might provide to the pile during a load test, but which would be dissipated with time, shall be obviated by "casing-off" or by other suitable means. For

purposes of this section, temporary supporting capacity shall include the resistances offered by any strata of nominally unsatisfactory bearing materials (class 11-65, other than controlled fill) or of soft or loose deposits of class 9-65 or 10-65 that are completely penetrated by the pile, or any resistance offered by granular soils that will be dissipated by reason of vibration.

(e) Maximum loads. -

(1) BASIC MAXIMUM LOADS. -Except as permitted by the provisions of paragraph two of this subdivision, the maximum allowable pile load, determined in accordance with the provisions of subdivisions (a) through (d) of this section, shall not exceed the values specified in table 11-6.

(2) SUBSTANTIATION OF HIGHER ALLOWABLE LOADS. -The pile capacities tabulated in table 11-6 may be exceeded where a higher value can be substantiated on the basis of test and analysis, as follows:

a. Load tests. -The provisions of subdivision (d) of this section shall be supplemented, as follows:

1. Not less than one single-pile load test shall be conducted for each ten thousand square feet of pile foundation area.

2. Final load increment shall remain in place for a total of not less than ninety-six hours.

3. Single test piles shall be subjected to cyclical loading or suitably instrumented so that the movements of the pile tip and butt may be independently determined. Other alternate methods or devices, acceptable to the commissioner which will permit evaluation of the transfer of load from piles to soil may be used.

4. Where the commissioner deems necessary, the provisions of paragraph six of subdivision (d) of this section relating to group load tests shall apply. If required, group load tests shall be performed in groups of numerically average size. Except where the proposed foundation is limited to single and/or two pile groups, each test group shall contain not less than three piles.

5. Individual pile loadings shall not exceed those determined from the single pile load tests.

6. The provisions of paragraph two of subdivision (d) of this section shall apply.

b. Analysis and report.- A report shall be submitted by the architect or engineer establishing to the satisfaction of the commissioner (on the basis of soil and load tests and foundation analysis, including analysis of the group action of the piles) that the proposed construction under a one hundred percent overload of the foundation is safe against failure of the pile and soil materials, and showing that the probable total magnitude and distribution of settlement to be expected under design conditions will not result in instability of the building or stresses in the structure in excess of the allowable values established in subchapter ten of this chapter.

c. Penetration resistance.- The penetration resistance shall not be less than that required by the provisions of subdivision (c) of this section or, where applicable values are not indicated therein, shall be determined from the required load tests. The pile material shall be capable of withstanding the driving stresses without being damaged.

(f) Combination of loads.- The provisions of section 27-594 of subchapter ten of this chapter shall apply.

§[C26-1107.2] 27-701 Allowable lateral load.- For plumb piles fully embedded in the ground, the lateral load applied at the top of the pile shall not exceed one ton per pile unless it has been demonstrated by tests that the pile will resist a lateral load of two hundred percent of the proposed working lateral load without lateral movement of more than one inch at the ground level and will resist the proposed working lateral load without a movement of more than three-eighths of an inch at the ground level. For piles projecting above the ground level the shear and bending stresses computed on the basis of cantilever action to a level of five feet below grade in soils of class 8-65 or better and to ten feet below grade in poorer soils shall not exceed the allowable values for like materials established in subchapter ten of this chapter. The provisions of subdivision (f) of section 27-700 of this article relating to combination of loads shall apply.

TABLE 11-6 BASIC MAXIMUM PILE LOADS

Type of pile	Basic maximum pile load (tons)
Caisson piles……..	No upper limit
Open-end pipe (or tube) piles bearing on rock of classes 1-65, 2-65, and 3-65…….	18 in. O.D. and greater — 250; less than 18 in. O.D. — 200
Closed-end pipe (or tube) piles, H piles, cast-in-place concrete and compacted concrete piles bearing on rock of classes 1-65, 2-65, and 3-65……..	150
Piles (other than timber piles) bearing on soft rock (classes 4-65)	
1) Displacement piles such as pipe, cast-in-place concrete, and compacted concrete piles……...	60
2) Non-displacement piles such as open-end pipe and H piles……...	80
Piles (other than timber piles) bearing on hardpan (class 5-65) overlying rock…….	100
Piles (other than timber piles) that receive their principal support other than by direct bearing on soils of classes 1-65 to 5-65……	60
Timber piles	
Bearing in soils of classes 1-65 to 5-65……...	25
Bearing in soils of classes 6-65 to 10-65…….	30

§[C26-1107.3] 27-702 Uplift capacity. -A minimum factor of safety against withdrawal of two shall be provided, except that the factor of safety against withdrawal shall be greater than two when the piles are subjected to dynamic uplift loads. The uplift capacity shall be demonstrated by pull-out tests, except where a factor of safety of three or more based on analysis is used, pull-out tests need not be conducted.

ARTICLE 9 PILE DRIVING OPERATIONS

§[C26-1108.0] 27-703 Exceptions.- The provisions of sections 27-704 and 27-705 of this article shall not apply to piles driven with a vibratory hammer or other equipment wherein the energy of impact cannot be evaluated.

§[C26-1108.1] 27-704 Equipment. -

(a) General.- The hammer shall travel freely in the leads. The cushion or cap block shall be replaced, if crushed. The hammer shall deliver its rated energy, and measurements shall be made of the fall of the ram or other suitable data shall be observed at intervals as required to verify the actual energy delivered at the termination of driving.

(b) Cushion or cap block.- The cushion or cap block shall be a solid block of hardwood with its grains parallel to the axis of the pile and enclosed in a tight-fitting steel housing, or shall be an equivalent assemblage. If laminated materials are used, the type and construction of these materials shall be such that their strength is equal to, or greater than, hardwood. Wood chips, pieces of rope, hose, shavings, or automobile tires and similar materials shall not be used. Cap blocks shall be replaced if burned, crushed, or otherwise damaged.

(c) Followers.- Followers shall not be used unless permitted in writing by the architect or engineer, and only when necessary to accomplish such installation. They shall be of steel or hardwood of such size, shape, length, and weight as to permit driving the pile in the desired location and to the required depth and resistance. The required driving resistance tabulated in tables 11-4 and 11-5 shall be increased to compensate for the loss of energy in the hammer blow. The follower shall be a single length section, shall be provided with a socket or hood carefully fitted to the top of the pile to minimize loss of energy and to prevent damage to the pile, and shall have sufficient rigidity to prevent "whip" during driving.

§[C26-1108.2] 27-705 Procedures. -

(a) Continuous driving.- Driving of piles preliminary to final seating shall be continuous for an interval adequate to break or prevent the development of freeze. The hammer shall be operated at its rated speed during this interval.

(b) Jetting.- Jetting, augering and other methods of pre-excavation shall not be used unless permitted in writing by the architect or engineer. When permitted, such procedures shall be carried out in a manner which will not impair the carrying capacity of the piles already in place or the safety of existing adjacent structures. Jetting or augering shall be stopped at least three feet above the final expected pile-tip elevation and at least three feet above the tip elevation of any pile previously driven within six feet of the jet or auger, except that where piles are to be end bearing on rock or hardpan, jetting or augering may be carried to the surface of the rock or hardpan. Piles shall be carried down beyond the depth of jetting, augering or other pre-excavation until the required resistance is obtained. If there is evidence that jetting or other procedures have disturbed the load-bearing capacities of previously installed piles, those piles that have been disturbed shall be restored to conditions meeting the requirements of this article by redriving or by other methods acceptable to the architect or engineer. Redriving or other remedial measures shall be instituted after the jetting or other operations in the area have been completed.

(c) Sequence of installation. -Individual piles and pile groups shall be installed in such sequence that: (1) the carrying capacity of previously installed piles is not reduced; (2) the soil surrounding the piles is not compacted to the extent that other piles in the group cannot be installed properly; and (3) ground movement that would damage adjacent buildings or utilities is prevented. In general, in any group, driving shall start from one side and proceed progressively toward the other side of the group or shall start from the middle and proceed toward the edges of the group.

(d) Heaved piles. -In soils in which the installation of piles causes previously installed piles to heave, accurate level marks shall be put on all piles immediately after installation, and all piles that have been heaved by an amount in excess of one-quarter of an inch shall be redriven to the required resistance.

(e) Penetration measurements.- Penetration measurements made for the purpose of determining resistance to driving shall not be made when pile heads are damaged to an extent that may affect measured penetration, nor shall they be made immediately after fresh cushion blocks have been inserted under the striking part of the hammer.

ARTICLE 10 PILE TYPES-SPECIFIC REQUIREMENTS

§[C26-1109.1] 27-706 Scope. - Types of pile construction and installation that are not described in this section will be permitted for use only where acceptable to the commissioner.

§[C26-1109.2] 27-707 Timber piles. -

(a) Materials. -Timber piles shall conform in quality to class A or B of reference standard RS 11-7.

(1) SIZE OF PILES. -Piles shall be of adequate size to resist the applied loads without creating stresses in the

pile materials in excess of twelve hundred psi for piles of southern pine, Douglas fir, oak, or other wood of comparable strength; or eight hundred fifty psi for piles of cedar, Norway pine, spruce or other wood of comparable strength. Except as provided in paragraph two of this subdivision, for piles forty feet or more in length and of thirty tons capacity or less, the following sizes or classes of piles shall be deemed to be adequate for considerations of stress in the pile material:

a. Piles of twenty-five to thirty tons capacity-Class A or minimum eight inch tip with uniform taper.

b. Piles of less than twenty-five tons capacity-Class A or B or minimum six inch tip with uniform taper.

(2) PILES DRIVEN TO END BEARING. -All timber piles, regardless of capacity, driven to end bearing on soils of classes 1-65 through 5-65 shall be class A or shall have a minimum eight inch tip and a uniform taper.

(3) SPECIES OF WOOD. -Any species of wood may be used that conforms to the provisions of reference standard RS 11-7 and that will stand the driving stresses.

(4) PEELING. -Unless treated, piles need not be peeled.

(b) Limitations on use. -Where timber piles are to be driven to end bearing on soils of classes 1-65 through 5-65 by use of an impact hammer, the installation of each such pile shall be under the personal supervision of an architect or engineer, and the operations of driving such piles, the observations of penetration resistance, and the operation of the equipment shall be so conducted as to terminate driving directly when the pile reaches bearing on the hard material. A report, prepared by the architect or engineer, describing the procedures, equipment, and precautions followed to prevent injury to the piling shall be submitted to the commissioner.

(c) Lagged and inverted piles. -The use of lagged or inverted piles will be permitted. Double lagging shall be adequately connected to the basic pile material to transfer the full pile load from the basic pile material to the lagging without exceeding values of allowable stress as established in subchapter ten of this chapter. The connection for single lagging shall be proportioned for half the pile load. The diameter of any inverted timber pile at any section shall be adequate to resist the applied load without exceeding the stresses indicated in paragraph one of subdivision (a) of this section, but in no case shall it be less than eight inches.

(d) Installation. -

(1) All broomed, crushed, or otherwise damaged materials at the head of the pile shall be removed before capping.

(2) Any sudden decrease in driving resistance shall be investigated with regard to the possibility of breakage of the pile, and if such sudden decrease in driving resistance cannot be correlated to boring data or some incident in the driving, and if the pile cannot be removed for inspection, it shall be considered as adequate cause for rejection of the pile.

§[C26-1109.3] 27-708 Precast concrete piles (including prestressed sections). -

(a) Materials. -Materials for precast concrete piles shall conform to the requirements of article five of subchapter ten of this chapter.

(b) Construction. -

(1) HANDLING. -Precast concrete piles shall be proportioned, cast, cured, handled, and driven so as to resist the stresses induced by handling and driving as well as by loads. Handling stresses shall be computed on the basis of fifty percent of the weight of the pile as an allowance for impact. Handling equipment shall be constructed so as to equalize the reactions on the several lines of the pile pickups. Loading conditions induced by handling and driving shall be considered as of infrequent occurrence.

(2) DIMENSIONS. -The minimum lateral dimension of the pile shall be ten inches, except for the taper at the tip.

(3) STRUCTURAL DESIGN. -Piles shall be proportioned in accordance with the provisions of article eight of this subchapter, subject to the following additional requirements:

a. For a length equal to at least three times the minimum lateral dimension at each end of the pile, lateral tie reinforcement consisting of 0.225 in. diameter rods or larger shall be spaced not more than three inches center-to center, or an equivalent spiral shall be provided. Elsewhere, the spacing of the ties or the pitch of the spiral may be increased to twelve inches. The minimum amount of longitudinal reinforcement shall be two percent of the concrete section placed in a symmetrical pattern of at least four bars. If prestressed piles are used, the minimum residual compression in the pile section shall be seven hundred psi. For piles designed with voids, the three inch spacing of the ties or spiral at each end of the pile shall be extended for a distance of twelve feet or one-third the length of the pile, whichever is smaller.

b. For piles designed with voids, the minimum wall thickness of the concrete in any section of the piles shall be four inches. Voids may extend through either or both ends of the pile. If the void extends through the lower end of the pile, the pile head shall be vented to prevent buildup of internal hydraulic pressure during driving.

c. Reinforcing steel shall be covered with at least one and one-half inches of concrete on the surface against the ground.

(c) Tolerances. -Voids, when used, shall be located within three-eighths of an inch of the position shown in the plans. The maximum departure of the pile axis from a straight line, measured while the pile is not subject to bending forces, shall not exceed one-eighth of an inch in ten feet or three-eighths of an inch in forty feet or, 0.1 percent of the pile length.

(d) Installation. -Precast concrete piles shall not be handled or driven until they have cured sufficiently to develop the necessary strength.

§[C26-1109.4] 27-709 Cast-in-place concrete piles. -
(a) Description. -Cast-in-place concrete piles shall be cast in shells previously installed in the ground or, with the limitations indicated in section 27-697 of article seven of this subchapter, may be cast in an uncased hole. Cast-in-place piles may be tapered or cylindrical, or a combination of tapered and cylindrical shapes.
(b) Materials. -Concrete for cast-in-place concrete piles shall conform to the requirements of article five of subchapter ten of this chapter. Slump shall be five inches plus or minus one inch. Where the pile shell is assumed to contribute to the capacity of the pile as a structural member, the shell shall be of metal and shall conform to the provisions of article six of subchapter ten of this chapter or section 27-712 of this article. Where the pile shell is not assumed to contribute to the capacity of the pile as a structural member, the shell may be of any material that will adequately resist the driving stresses and maintain an open well to receive the concrete. End closures for shells shall not project more than one-half inch beyond the outer limits of the pile when bearing in soils of class 6-65 or lower.
(c) Installation. -
(1) After installation to final depth and immediately before filling with concrete, the inside of the tube, shell, or bore shall be thoroughly cleaned to the bottom and inspected by lowering a drop light or by means of a light beam. To be accepted: (a) the pile shall be free of collapsed sections of shell and the pile shell shall not show any tears; (b) the pile shall be free of water except that a minor amount of water may be allowed to occur in the pile if it be absorbed by placing a suitable amount of dry cement-sand mixture in the tip end of the pile; and (c) the alignment of the pile shall conform to the provisions of section 27-691 of article seven of this subchapter. If the bottom of the casing is out of sight, the shape and alignment of the casing shall be surveyed with a suitable instrument, or the pile rejected.
(2) Concrete shall be placed by such methods that the entire volume of the tube, shell, or bore is filled and in a manner that will preclude separation of the ingredients.
(3) No concrete shall be placed in a cast-in-place pile until all piles within a radius of fifteen feet, or within the heave range, have been driven.
(4) Rejected pile shells shall be filled with concrete or sand.
(5) The concrete cap shall not be placed until at least one hour after all piles within the cap group are completely filled.

§[C26-1109.5] 27-710 Compacted concrete piles. -
(a) Description.- A "compacted concrete pile" shall denote a concrete pile formed with an enlarged base in which the concrete in the base is placed in small batches that are compacted prior to attaining an initial set. The concrete in the shaft of the pile shall be placed as specified in section 27-709 of this article for cast-in-place concrete piles if a permanent casting is provided, or in small batches that are compacted.
(b) Materials. -Concrete for compacted concrete piles shall conform to the requirements of article five of subchapter ten of this chapter. Concrete to be compacted shall have a minimum compressive strength at the age of twenty-eight days of four thousand psi and shall be mixed with sufficient water to permit hydration of the cement, but the slump shall be zero. The concrete shall be placed and compacted before initial set can occur. Non-compacted concrete, if used for the pile shafts, shall conform to the requirements for cast-in-place concrete piles.
(c) Spacing.- Minimum spacing between compacted concrete piles shall be four feet six inches, center to center, except that where the shafts of such piles are cased for their full length, this spacing may be reduced to three feet six inches. Where a question exists as to possible damage to adjacent previously driven piles, these minimums shall be increased.
(d) Installation. -
(1) The base shall be formed by ramming concrete, in batches of approximately five cubic feet or less, from a drive casing and into the soil. Unless specifically otherwise permitted by the commissioner, a minimum of twenty blows of at least one hundred forty thousand foot-pounds per blow shall be required for extrusion of the last five cubic feet of concrete. The total quantity of concrete extruded from the drive casing to form the base shall be equal to or greater than the quantity so extruded in the case of the nearest successful applicable test pile, except that a compactive effort in excess of thirty blows, each of one hundred forty thousand foot-pounds, will not be required for extrusion of the last five cubic feet.
(2) After the expanded base has been formed, the shaft shall be constructed. Where a cased shaft is to be used, a steel shell shall be inserted into the drive casing and anchored to the expanded base by placing a fresh charge of concrete in the shell and driving it into the base. The shell may then be filled with concrete to cut-off elevation after the removal of the drive casing, in accordance with the provisions relating to cast-in-place concrete piles. Any annular space remaining between the shell and surrounding soil shall be suitably filled to assure proper lateral support of the shaft, unless there is sufficient recovery of the ground to provide the necessary support. Where an uncased shaft is to be used, the provisions of section 27-697 of article seven of this subchapter shall apply, and the concrete for the shaft shall be placed by ramming or by the use of approved pressure devices as the drive casing is withdrawn. Where ramming is used, the concrete batches being rammed shall not exceed five cubic feet in volume, not less than two blows of thirty thousand foot-pounds each shall be applied to compact each batch of concrete, and the bottom of the drive casing shall be kept below the level of the concrete at all times.

(3) The outside diameter of the permanent shaft shall not be more than four inches less than the inside diameter of the drive casing.
(4) Except where uncased shafts are used, as described in section 27-697 of article seven of this subchapter, no concrete shall be placed in the pile shafts until all piles within a radius of fifteen feet, or within the heave range, have been driven.
(e) Bearing material. -The enlarged base of the pile shall be formed in, or on the same type of bearing material as is used to support the nearest applicable load test pile and at a similar depth therein. In addition, the enlarged base shall be underlain by a minimum depth of ten feet (measured from the junction of the shaft and base) of soil materials of classes 1-65 to 7-65, except that, where installation of the base is permitted to be performed with blows of less energy than the one hundred forty thousand foot-pounds indicated in paragraph one of subdivision (d) of this section, the requirement for a ten foot depth of class 1-65 to 7-65 material may be reduced, subject to the approval of the architect or engineer and the approval [*sic*] of the commissioner.

§[C26-1109.6] 27-711 Steel H sections. -
(a) Materials.- Steel H sections may be of any type of steel permitted by the provisions of reference standard RS 10-5. The use of built-up sections or sections of other than "H" form will be permitted if the several components of the section are adequately connected to develop the strength of the adjacent components and if the ratio of width to thickness of the component parts does not exceed the values for conventional "H" sections.
(b) Limitations on use. -The tips of all steel H piles having a thickness of metal less than one-half inch, which are driven to end bearing on rock of class 1-65 through 3-65 by an impact hammer, shall be reinforced. The installation of all steel H piles by impact hammer to end bearing on rock of classes 1-65 through 3-65 shall be under the personal inspection of an architect or engineer, and the operations of driving such piles, the observations of penetration resistance, and the operation of the equipment shall be conducted so as to terminate driving directly when the pile reaches refusal on the rock surface.

§[C26-1109.7] 27-712 Concrete-filled pipe piles. -
(a) Materials.- The pipe shall conform to the provisions of reference standard RS 11-8. Concrete shall conform to the requirements of article five of subchapter ten of this chapter.
(b) Minimum dimensions. -
(1) Pipe installed open-end and having a nominal outside diameter of less than fourteen inches shall be at least one-quarter inch thick. For diameters from fourteen inches to eighteen inches, the minimum thickness shall be 0.310 in. For diameters over eighteen inches, the minimum thickness shall be 0.375 in.
(2) Steel pipe piles installed with ends closed shall have a minimum nominal wall thickness of at least 0.125 in.
(3) For piles which receive their principal support by friction, closure or splice plates shall not project more than three-eighths of an inch beyond the outer limit of the pipe section.
(c) Installation. -
(1) Pipe shells driven open-end shall be cleaned to the bottom of the shell after driving.
(2) After driving and cleaning the pipe, open-end piles driven to end bearing on rock or hardpan shall be reseated to full bearing by redriving, to the resistance indicated in Table 11-4. If the pipe shell shows two inches or more of penetration on redriving, the pipe shall be recleaned and redriven in successive cycles until the penetration on redriving is less than two inches.
(3) Pipe shells shall be inspected before filling with concrete, shall be clean, and shall meet the requirements for alignment and condition of the shell as specified with regard to the shells of cast-in-place piles. If leakage of water into the pipe occurs, the provisions of paragraph five of subdivision (e) of section 27-713 of this article shall apply.
(4) Placing of concrete fill in pipe shells shall conform to the requirements for placing concrete fill in cast-in-place piles.

§[C26-1109.8] 27-713 Caisson piles. -
(a) Description.- Caisson piles shall denote concrete filled pipe piles that are socketed into bedrocks of class 1-65, 2-65 or 3-65 and constructed with steel cores.
(b) Materials.- Pipe or shell and concrete shall conform to the requirements for concrete filled pipe piles, except that the minimum compressive strength of the concrete at the age of twenty-eight days shall be thirty-five hundred psi. Steel cores shall conform to the requirements for steel H piles. Reinforcing steel cages shall be covered with at least one and one-half inches of concrete.
(c) Design of rock socket. -The design of the rock socket shall be predicated on the sum of the allowable bearing pressure on the bottom of the socket plus bond along the sides of the socket. The allowable bearing pressure on the surface of the rock at the bottom of the socket shall be as established in section 27-678 of article four of this subchapter increased for embedment in accordance with note eight of table 11-2, provided that the strength of the concrete fill in the socket, computed as 0.45 f 'c is of comparable magnitude. The allowable bond stress between the concrete and the sides of the socket shall be taken as two hundred psi. The provisions of subdivision (c) of section 27-700 of article eight of this subchapter relative to penetration resistance shall not apply.
(d) Spacing and minimum dimensions. -
(1) Minimum diameter of a caisson shall be eighteen inches with a minimum shell thickness of three-eighths of an inch. Minimum depth of the rock socket shall be equal to the diameter of the pipe.
(2) The center-to-center spacing of caissons shall be at least two and one-half times the outside diameter of the shell.

(e) Installation. -
(1) The steel shell shall be installed through overburden, the material within the shell shall be removed, and the shell seated in the rock sufficiently to stop the inflow of soil. Where required to extend the shells, splices are to be welded. A suitable steel driving shoe shall be welded to the bottom of each caisson.
(2) A socket shall then be drilled in the rock to the required depth and shall be approximately of the same diameter as the inside diameter of the shell. Before placement of concrete, the socket and shell shall be thoroughly cleaned and the rock inspected to verify that the rock is of the class on which the design has been predicated, or of a better class. In case visual inspection cannot be made because of inability to unwater the caissons by standard pumping methods, drilling logs and screenings from the rock drilling operation may be utilized to determine the class of rock in the socket.
(3) Where more than one section of steel core is required, the mating ends of the sections shall be spliced so as to safely withstand the handling stresses to which they may be subjected. The ends shall be milled or field ground to insure contact. The steel core shall be centrally installed in the caisson before grouting and concreting, shall not be more than one inch above the rock at the bottom of the socket, and shall be full length of the caisson or extend a sufficient distance up into the shaft to transmit the load in the steel core into the concrete of the caisson. A minimum-weight thirty-six pounds stub core beam shall be installed in the socket for caissons not requiring steel cores in order to lock the caissons into the rock. In these cases, the length of the steel cores shall be twice the socket depth.
(4) Concrete and grout shall be placed so that it completely fills the shell, the socket, and the space between the steel core and shell, and in a manner that will preclude separation of the ingredients.
(5) If the leakage of water into the caisson is minor, the caisson shall be pumped out and one cubic yard of grout shall be placed in the caissons and then the balance of the concrete installed. If the leakage of water makes it inadvisable to attempt to place concrete in the dry, the shell shall be filled to its top with clean water, and the concrete placed by the tremie method to the top of the caisson in one continuous operation or by using a seal of grout of the same strength as the specified concrete. The grout seal, if used, shall be deposited by means of a grout pipe to an elevation of at least three feet above the cutting edge, and after a sufficient time has elapsed to allow the grout to set, the caisson shall be pumped dry and the remaining space filled with concrete.

§[C26-1109.9] 27-714 Composite piles. -Composite piles include those consisting of two types of pile joined together. The maximum allowable load shall be that allowed for the component of lesser strength used to make up the full pile length. The connection or joint between the two components shall be constructed so as to prevent the separation of the upper and lower components during construction and thereafter. The details and methods of making joints shall be designed.

ARTICLE 11 UNDERPINNING

§[C26-1110.1] 27-715 General requirements. -
Where support of adjacent structures or properties is required, such support may be provided by underpinning, sheeting, and bracing, or by other means acceptable to the commissioner. Except as specifically permitted otherwise, underpinning piers, walls, piles, and footings shall be designed and installed in accordance with the applicable provisions of this subchapter relating to piers, walls, piles, and footings used in new construction and shall be inspected as provided in section 27-724 of article thirteen of this subchapter**.**

§[C26-1110.2] 27-716 Use of rock support in lieu of underpinning.- Existing structures founded at a level above the level of adjacent new construction may be supported on hard rock in lieu of underpinning, the use of sheeting and bracing, or the construction of retaining walls, provided that a report by the architect or engineer is submitted substantiating the safety of the proposed construction and verifying that an "in-place" inspection has been made of the rock exposed and of the jointing therein in the excavation.

ARTICLE 12 STABILITY

§[C26-1111.1] 27-717 General.- The possibility of overturning and sliding of the building shall be considered.

§[C26-1111.2] 27-718 Factor of safety. -
(a) Overturning.- The minimum factor of safety against overturning of the structure as a whole shall be one and one-half. Stability against overturning shall be provided by the dead load of the building, by the allowable uplift capacity of piling, by anchors, by the weight of soil directly overlying footings provided that such soil cannot be excavated without recourse to major modification of the building, or by any combination of these factors.
(b) Sliding. -The minimum factor of safety against sliding of the structure under lateral load shall be one and one-half. Resistance to lateral loads shall be provided by friction between the foundation and the underlying soil, by passive earth pressure, by batter piles, or by plum piles, subject to the following:
(1) The resistance to lateral loads due to passive earth pressure shall be discounted where the abutting soil could be removed, inadvertently, by excavation.
(2) In the case of pile supported structures, frictional resistance between the foundation and the underlying soil shall be discounted.

(3) The available resistance to friction between the foundation and the underlying soil shall be predicated on an assumed friction factor of one-half for soils of classes 1-65 through 8-65. A greater value of coefficient of friction may be used subject to verification by analysis and test. For soils of poorer classes, the stability shall be analyzed by accepted procedures of soil mechanics.

ARTICLE 13 INSPECTION

§[C26-1112.1] 27-719 General. -The applicable provisions of article seven of subchapter one of this chapter shall apply.

§[C26-1112.2] 27-720 Boring and test pit operations.- Boring and test pit operations shall be subject to controlled inspection, except that fifty percent or less of the required number of borings and/or test pits may be inspected by an architect or engineer other than the architect or engineer designated for controlled inspection. The records of borings and/or test pits shall be attested to as follows:

(a) The architect or engineer shall file a report stating which borings and/or test pits were performed under his or her inspection and whether such inspection was performed personally or otherwise. If the inspection was not made personally by the architect or engineer, the name and address of the inspector shall be noted. It shall be stated: that the borings and/or test pits so inspected were made and were carried to the depths indicated; that, to the best of the architect's or engineer's knowledge and belief, the description and classification of the soils are a true description of the samples recovered from the respective borings and/or test pits; that such samples were recovered at the levels indicated; and that the boring and/or test pit work progressed in such manner that the samples recovered are reasonably representative of the subsurface conditions.

(b) The accuracy of the other data indicated on the boring records shall be attested to by the drilling contractor or by the driller making the borings.

§[C26-1112.3] 27-721 Piling.- The installation of all piling shall be subject to controlled inspection. Such inspection shall be performed only by an architect or engineer resident at the site, except that where more than one pile rig is working at a site, inspection of the work may be performed by nonlicensed or nonregistered personnel working under the resident architect or engineer, who need act only in a supervisory capacity. This exception shall not apply, however, in the cases of timber or steel piles driven to end bearing as described in article ten of this subchapter. Materials for piling shall be subject to inspection requirements as prescribed in subchapter ten of this chapter for those or like materials. In all cases, an inspector shall be assigned to observe the operations of each rig.

§[C26-1112.4] 27-722 Footings, foundation piers, foundation walls and pile caps. -The provisions of section 27-683 of article six of this subchapter shall apply.

§[C26-1112.5] 27-723 Subgrade for footings, foundation piers, and foundation walls. -The soil material directly underlying footings, foundation piers, and foundation walls shall be inspected by an architect or engineer after excavation and immediately prior to construction of the footings. If such inspection indicates that the soil conditions do not conform to those assumed for purposes of design and described on the plans, or are unsatisfactory due to disturbance, then additional excavation, reduction in allowable bearing pressure, or other remedial measures shall be adopted, as required. A copy of a report or reports on such inspection or inspections describing the conditions found and any necessary modification of the design, and bearing the signature of the architect or engineer making the inspections, shall be filed with the commissioner. In addition, notification shall be received by the department at least two working days prior to construction of the footing, pier, or foundation walls, that the subgrade is ready for inspection unless the requirements of section 27-209 of article twenty-one of subchapter one of this chapter have been met.

§[C26-1112.6] 27-724 Construction required for or affecting the support of adjacent properties or buildings.- Except in cases where a proposed excavation will extend less than ten feet below the legally established grade, all underpinning operations and the construction and excavation of temporary or permanent cofferdams, caissons, braced excavated surfaces, or other constructions or excavations required for or affecting the support of adjacent properties or buildings shall be subject to controlled inspection. The details of underpinning, cofferdams, caissons, bracing, or other constructions required for the support of adjacent properties or buildings shall be shown on the plans or prepared in the form of shop or detail drawings and shall be approved by the architect or engineer who prepared the plans.

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SUBCHAPTER 12
LIGHT, HEAT, VENTILATION, AND NOISE CONTROL

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ARTICLE 1 GENERAL

§[C26-1200.1] 27-725 Scope. -The provisions of this subchapter shall establish and control the minimum requirements for light, heat, ventilation, and noise control except as otherwise provided in subchapters six, seven, and eight.

§[C26-1200.2] 27-726 Standards. -The provisions of reference standard RS-12 shall be a part of this subchapter.

§[C26-1200.3] 27-727 Definitions. -For definitions to be used in the interpretation of this subchapter, see subchapter two of this chapter.

§[C26-1200.4] 27-728 Plans. -For the requirements governing the filing of plans and the work to be shown on plans, see subchapter one of this chapter.

§[C26-1200.5] 27-729 Permits. -For the requirements governing equipment work permits and equipment use permits, see subchapter one of this chapter.

§[C26-1200.6] 27-730 Tests and inspections. -Where required in this subchapter, all equipment and systems shall be subject to tests and/or inspections that would disclose defects or operating conditions dangerous to life or health. Such equipment or systems shall not be operated until these defects or conditions are corrected.

ARTICLE 2 EXISTING BUILDINGS

§[C26-1201.1] 27-731 Alterations. -No building, or part thereof, shall hereafter be altered or rearranged so as to reduce any of the following to less than the required standards prescribed in this subchapter for buildings hereafter erected:

(a) The amount of available natural or artificial light.
(b) The output of devices providing heat to a room.
(c) The outdoor air supply.

No additional room shall be created unless made to conform to the requirements of this subchapter except that in basements of one-family dwellings existing on January first, nineteen hundred eighty-two, and in basements of all other dwellings existing on January first, nineteen hundred forty-eight, the minimum clear ceiling height may be seven feet for the minimum area. In multi-family dwellings, the installation of all new mechanical equipment shall conform to the requirements of article nine of this subchapter except that existing mechanical equipment may be replaced with new equipment of the same kind as previously installed.

ARTICLE 3 STANDARDS OF NATURAL LIGHT

§[C26-1202.1] 27-732 Natural light requirements. - Every habitable room shall be provided with natural light complying with the provisions of this subchapter.

§[C26-1202.2] 27-733 Natural light sources and location[s]*. -

(a) Natural light, when required, shall be provided by windows, skylights, monitors, glazed doors, transoms, fixed lights, jalousies or other natural light transmitting media. Such sources shall not be located in recesses having a width of less than six feet and such sources shall not be located so as to create a habitable room whose depth exceeds thirty feet except in dwelling units of group one construction containing more than three habitable rooms. Such sources, except as provided in subdivision (b) of this section, shall face or open upon the sky or upon a public street, space, alley, park, highway, or right of way, or upon a yard, court, plaza, or space above a setback, when such yard, court, plaza, or space above a setback is located upon the same lot and is of the dimensions required by the applicable provisions of the zoning resolution. Where dwelling units in buildings or spaces classified in occupancy group J-1 or J-2 are located in a cellar or a basement such dwelling unit or units shall have at least one-half of their height and all of their window surfaces above every part of an "adequate adjacent space". Such "adequate adjacent space" shall be open to the sky and shall be a continuous surface area outside the dwelling unit or units not less than thirty feet in its least dimension and abutting at same level or directly below every part of the exterior walls of such dwelling unit or units. Such "adequate adjacent space" shall include only spaces which are located on the same lot or plot as the building or on a public street, space, alley, park, highway or right of way and the level of such areas which abut or adjoin the habitable room at least shall be six inches below the window sills of any windows.

(b) Natural light sources may face or open upon an enclosed or partially enclosed balcony or space above a setback when such balcony or space faces upon a public street, space, alley, park, highway or right of way or upon a yard, court, plaza, or space above a setback, when such yard, court, plaza, or space above a setback is located upon the same lot and is of the same dimensions required by the applicable provisions of the zoning resolution, the maximum depth of any habitable room is at most thirty feet measured from the outer face of the wall forming the partial or full enclosure of the balcony or space, the enclosure of the balcony or space is not more than one story in height, and the balcony or space complies with either of the following:

(1) The front of the balcony or space above a setback has an opening to the outer air whose area is equal to at least seventy-five percent of the floor surface area of such balcony or space.

(2) The front of the balcony or space above a setback may be completely enclosed when the building is of group one construction provided the outer enclosing walls are glazed with clear plate glass or with plastic equivalent complying with subdivision (e) of section 27-331 of article four of subchapter five of this chapter and such

glazed wall area is equal to at least fifty percent of the interior walls enclosing such balcony or space and at least fifty percent of the required glazed area is openable and no window from any bathroom, water closet [*sic*] compartment, or kitchen whose area is fifty-nine square feet or less opens on such balcony or space.

***Copy in brackets not enacted but probably intended.**

§[C26-1202.3] 27-734 Area of natural light sources. -Required sources of natural light shall have an aggregate transmitting area of at least ten percent of the floor area of the room or space served and where an enclosed or partially enclosed balcony or space above a setback complying with section 27-733 of this article intervenes, the required sources of natural light shall have an aggregate transmitting area of at least ten percent of the combined floor area of such room and the portion of the balcony or space directly adjoining and in front of such room. Each required source shall have a minimum transmitting area of twelve square feet and only that area of the light source above thirty inches from the finished floor may be considered as providing the natural light required in any space.

ARTICLE 4 STANDARDS OF ARTIFICIAL LIGHT

§[C26-1203.1] 27-735 Artificial light requirements.- Adequate means for producing artificial light by electricity shall be provided in every room or floor space in every building hereafter erected and in the portions of existing buildings where alterations are performed except as follows:

(a) Artificial light need not be provided in rooms or spaces occupied exclusively during the daylight hours between one hour after sunrise and one hour before sunset, and which are provided with natural light meeting the requirements of sections 27-733 and 27-734 of article three of this subchapter.

(b) Artificial light need not be provided in rooms or spaces with less than forty square feet of floor area if they are used exclusively for storage purposes or for mechanical facilities containing no rotating or moving parts, no combustion equipment, or no other hazardous equipment.

§[C26-1203.2] 27-736 Means of egress. -All means of egress shall be provided with the levels of artificial illumination as required in article six of subchapter six of this chapter.

§[C26-1203.3] 27-737 Places of assembly.- All places of assembly shall be provided with the levels of artificial illumination as required in subchapter eight of this chapter.

§[C26-1203.4] 27-738 Bathrooms and toilet rooms.- In all bathrooms and toilet rooms, the required means for producing artificial illumination shall be capable of producing an average intensity of not less than ten foot candles, when measured at thirty inches above the floor.

§[C26-1203.5] 27-739 Yards and courts. -Where a building is classified in occupancy group J-1 or J-2, or where a building contains a space or spaces classified in occupancy group J-1 or J-2, all yards and courts shall be provided with adequate means of providing artificial light by electricity having a minimum intensity of not less than one foot candle measured at the lower level or levels of all yards or courts.

ARTICLE 5 STANDARDS OF HEATING

§[C26-1204.1] 27-740 Heating requirements.- All habitable or occupiable rooms or spaces, and all other rooms or spaces listed in table 12-1, shall be provided with means of heating in accordance with the requirements of this subchapter and reference standard RS 12-1. Heating systems shall be capable of producing the required temperatures listed in table 12-1 when the outdoor temperature is five degrees Fahrenheit and the wind velocity is fifteen mph. In highly exposed locations, provision shall be made for higher wind velocities. Heating equipment shall not be required when either of the following conditions exist:

(a) Where the occupancy is seasonal and the rooms or buildings will not be occupied between November first and May first of the following year.

(b) Where the processes or activities normally conducted within the space will generate sufficient heat to produce the prescribed indoor temperature during the time of occupancy.

§[C26-1204.2] 27-741 Minimum temperature requirements.- Heating systems shall be capable of producing the required minimum space temperatures as set forth in table 12-1. Where the occupancy of a space does not conform exactly with any of the spaces listed, the temperature shall be determined by the requirements of the listed space to which it most nearly conforms.

§[C26-1204.3] 27-742 Devices producing incidental heat.- Where a room or space contains equipment that produces heat, such as motors, generators, resistors, lights, compressors, steam heated vessels, etc., and where such equipment is in constant use during the period of occupancy, the equipment may be considered as a supplementary heating device. Its heating capacity may be deducted from the required capacity of the heating devices in the room.

§[C26-1204.4] 27-743 Capacity of central heat sources.- Where central heat sources are used, they shall have a gross output capacity sufficient to provide for the required heating load, including appropriate allowance for distribution losses, pick-up, and the heating of domestic hot water if the central heat source is used for that purpose.

TABLE 12-1 MINIMUM SPACE TEMPERATURE REQUIREMENTS[a]

Rooms or Spaces	Minimum Temperature (degree F)
Habitable rooms in all buildings……..	70
Building equipment and machinery rooms…….	50
Patients' rooms, bathrooms and toilet rooms, stairs and corridors in hospitals and nursing homes……..	75
Bathrooms and toilet rooms, except patients' bathrooms and toilet rooms in hospitals and nursing homes.	70
Offices, waiting rooms, art galleries, museums, libraries, meeting rooms, churches, classrooms, auditoriums, lecture halls, night clubs, restaurants, theatres, locker rooms, dressing rooms, and spaces where persons are engaged in sedentary activities……..	70
Laboratories, light machine work, product inspections, loft buildings, shops, stores, display rooms, show rooms, sales rooms, and spaces where persons are engaged in moderate physical activities…..……	70
*Laboratories, light machine work, product inspections, loft buildings, shops, stores, display rooms, show rooms, sales rooms, and spaces where persons are engaged in moderate physical activities…..…...	65
Gymnasia, dance halls, skating rinks, bowling alleys, heavy assembly workrooms or shops, and spaces where persons are engaged in vigorous physical activities…….	60
Automotive repair shops…….	50
Storage areas, garages, space where work or process requires a low temperature……	None
Hospital operating rooms, and recovery, labor, delivery, and nursery rooms……..…..	80
Swimming pools, bath houses, and shower rooms…….	75

Note for Table 12-1:

[a]Where the listed temperatures differ from those that are required to be maintained under the provisions of section 131.03 of the New York City health code, the higher temperature shall apply.

Duplicate designation enacted on line above, this designation is probably intended.

§[C26-1204.5] 27-744 System design. -Where central heat sources are used, the heating system including all wiring, piping and/or ductwork, the heat sources and the various space heating devices shall be designed and installed so as to be capable of producing the minimum temperatures set forth in table 12-1. Also, the installation of the entire system shall be in accordance with the applicable requirements of this subchapter and subchapters thirteen through sixteen of this chapter, and the electrical code of the city of New York.

ARTICLE 6 STANDARDS OF NATURAL VENTILATION

§[C26-1205.1] 27-745 Occupiable rooms.- All occupiable rooms shall be ventilated by natural or mechanical means, or by a combination of both. Natural ventilation may be provided except where mechanical ventilation is required by article seven or eight of this subchapter.

§[C26-1205.2] 27-746 Habitable rooms.- All habitable rooms shall be provided with natural ventilation complying with the provisions of this subchapter except as provided in section 27-750 of this article.

§[C26-1205.3] 27-747 Alcoves.- An alcove or room opening off another room or space shall be considered as a separate room in determining its requirements for ventilation. However, for dwellings classified in occupancy group J-3, where the opening between the alcove and the room or space is at least eighty percent of the area of the common wall and the floor area of the alcove does not exceed twice the area of the opening, the alcove and the room opening into the alcove may be considered as a single space.

§[C26-1205.4] 27-748 Balconies.- Where an interior balcony or mezzanine opens to form part of another room or space, its area shall be added to the area of the room or space in which it is located to compute the ventilation required for both spaces.

§[C26-1205.5] 27-749 Natural ventilation sources.- Natural ventilation, when required, shall be provided by windows, skylights, monitors, doors, louvers, jalousies, or other similar ventilating openings. Such ventilating openings shall open to the sky or a public street, space, alley, park, highway, or right of way, or upon a yard, court, plaza, or space above a setback, where such yard, court, plaza, or space above a setback is located on the same lot and is of the dimensions required by the applicable provisions of the zoning resolution.

§[C26-1205.6] 27-750 Area of ventilating openings.- Ventilating openings in all habitable rooms or spaces shall have a free openable area of at least five percent of the floor area of the room or space ventilated and where

there is an enclosed or partially enclosed balcony or space above a setback complying with section 27-733 of article three of this subchapter the ventilating openings shall have a free openable area of at least five percent of the combined floor area of such room and portion of the balcony or space directly adjoining and in front of such room. Each required ventilating opening shall have a minimum openable area of six square feet. Where fresh air is furnished in any habitable room or space by mechanical means supplying a minimum of forty cfm the free openable area of the openings may be reduced to one-half of the above requirements but not less than five and one-half square feet in aggregate. In all occupiable rooms or spaces, the free openable area shall be used to calculate the index for ventilation (section 27-753 of article seven of this subchapter), which shall determine the minimum requirements for supplementary mechanical ventilation.

****§[C26-1205.7] 27-751 Minimum dimensions of habitable rooms.**- Habitable rooms shall have a minimum clear width of eight feet in any part; a minimum clear area of eighty square feet and a minimum clear ceiling height of eight feet for the minimum area, except:

(a) A room which complies with the requirements for natural light and ventilation and in addition has an opening of not less than sixty square feet into an immediately adjoining room may have a minimum floor area of seventy square feet and a least horizontal dimension of seven feet;

(b) A dining space which has legally required ventilation, and in which the window has an area of at least one-eighth the floor area of such dining space;

(c) One-half the number of bedrooms in a dwelling unit containing three or more bedrooms may have at* least minimum dimension of seven feet;

(d) A room in a class B multiple dwelling as defined in section four of the multiple dwelling law which may have a minimum floor area of sixty square feet and a least horizontal dimension of six feet.

***Chapter 559 Laws of 1995.*

**As enacted but "a" probably intended.*

ARTICLE 7 STANDARDS OF MECHANICAL VENTILATION

§[C26-1206.1] 27-752 Areas requiring mechanical ventilation.- Mechanical ventilation shall be provided in all occupiable rooms or spaces where the requirements for natural ventilation are not met; in all rooms or spaces, which because of the nature of their use or occupancy, involve the presence of dust, fumes, gases, vapors, or other noxious or injurious impurities, or substances which create a fire hazard; or where required by the provisions of article eight of this subchapter or subchapters six through eight of this chapter.

§[C26-1206.2] 27-753 Index for ventilation.- The index for ventilation for any room or space shall be computed by adding the following:

(a) The contents per occupant, in cubic feet.

(b) The floor area per occupant, times ten, in square feet.

(c) The clear, unobstructed openable area of windows, skylights, and other sources of natural ventilation per occupant, times two hundred, in square feet. In all cases, the number of occupants used in computing the index for ventilation shall be the maximum number who will occupy the room or space simultaneously during any two-hour period.

§[C26-1206.3] 27-754 Minimum quantity of outside air for mechanical ventilation. - The minimum quantity of outside air required for mechanical ventilation in any occupiable room, where not otherwise prescribed, shall be determined according to table 12-2.

(a) Window requirements.- To be credited as ventilating openings under the provisions of this subchapter, windows or other openings shall meet the requirements of section 27-749 of article six of this subchapter, and where mechanical supply ventilation is not provided, shall have a free openable area of at least one square foot per one hundred square foot of floor area.

TABLE 12-2 REQUIRED MINIMUM OUTDOOR AIR SUPPLY AND EXHAUST (cfm per sq. ft.)

Index for Ventilation	Ventilated Rooms with Natural Ventilation Openings		Ventilated Rooms without Natural Ventilation Openings		Air Conditioned Rooms	
	Supply	Exhaust	Supply	Exhaust	Supply	Exhaust
0-300	2.5	2.0	2.5	2.0	1.5	1.5
301-520	2.0	1.5	2.0	1.5	1.2	1.2
521-850	1.5	1.25	1.5	1.25	0.9	0.9
851-1250	…	1.0	1.0	1.0	0.6	0.6
1251-1650	…	0.67	0.67	0.67	0.5	0.5
Over 1650	…	…	0.33	0.33	0.4	0.4

(b) Air conditioning. -
(1) In air conditioned rooms, the windows and other openings shall not be credited as such in computing the index for ventilation. Air conditioned rooms shall be considered as interior rooms.
(2) Air that has been exhausted from an air conditioned space may be reconditioned by air conditioning apparatus and recirculated as equivalent outdoor air, provided that the total of supply air is not less than required for air conditioned rooms by table 12-2 and that the amount of actual outdoor air is at least thirty-three and one-third percent of the required total. The actual outdoor air supply shall not, under any circumstances, be reduced to less than five cfm per occupant, except that these minimum requirements may be reduced by fifty percent as provided in section 27-755 of this article.
(c) Required exhaust.- Required exhaust may be accomplished by raising the pressure within the space with consequent leakage through doors and windows, or by drawing the vitiated air from air conditioned spaces into the return air duct of air conditioning apparatus or into an exhaust duct discharging directly to the outdoor air.
(d) Make-up air.- A sufficient quantity of air to make the exhaust system effective shall be provided to the space being exhausted by one or by any combination of the following methods:
(1) By supplying air to the space by means of a blower system.
(2) By infiltration through louvers, registers, or other permanent openings in walls, doors, or partitions, adjoining spaces where air is supplied by one of these methods.
(3) By infiltration through cracks around window sash and doors.
(4) By other methods acceptable to the commissioner.
(e) Prohibited use of recirculated air.- Air drawn from any of the following spaces may not be recirculated;* mortuary rooms; bathrooms or toilet rooms; or any space where an objectionable quantity of flammable vapors, dust, odors, or noxious gases is present. Air drawn from rooms that must be isolated to prevent the spread of infection shall not be recirculated, except that air drawn from hospital operating rooms may be recirculated, if in compliance with the following requirements:
Semicolon enacted but colon probably intended.
(1) There shall be a minimum of twenty-five total air changes per hour, of which five air changes per hour shall be outdoor air.
(2) All fans serving exhaust systems shall be located at the discharge end of the system.
**(3) Outdoor air intakes shall be located at least twenty-five feet from exhaust outlets of ventilation systems and other exhaust discharges, combustion equipment stacks, medical surgical vacuum systems, and plumbing vent stacks, from areas which may collect vehicular exhaust such as off-street loading bays, and from areas which may collect other noxious fumes. The bottom of outdoor air intakes serving central systems if installed above a roof, shall be located at least three feet above roof level.
(4) Positive air pressure shall be maintained at all times in relation to adjacent areas.
(5) All ventilation or air conditioning systems serving such rooms shall be equipped with a filter bed of twenty-five percent efficiency upstream of the air conditioning equipment and a filter bed of ninety percent efficiency downstream of the supply fan, any recirculating spray water systems and water reservoir type humidifiers. All filter efficiencies shall be average atmospheric dust spot efficiencies tested in accordance with ASHRAE Standard 52-68.
(6) A manometer shall be installed across each filter bed.
(7) Duct linings shall not be used in ventilation and air conditioning systems serving such rooms unless terminal filters of at least ninety percent efficiency are installed downstream of linings.
(8) Air supplied shall be delivered at or near the ceilings and all exhaust air shall be removed near floor level, with at least two exhaust outlets not less than three inches above the floor.
****(f) Outdoor air intakes.-** For high-rise office buildings erected pursuant to new building applications filed on or after October 22, 2004, outdoor air intakes serving spaces above the second story and serving spaces greater than ten thousand square feet of floor area shall be located at least twenty feet above ground level, at least twenty feet from exhaust outlets of ventilation systems and other exhaust discharges, and at least twenty feet from areas that may collect vehicular exhaust such as off-street loading bays.
*****Local Law 26-2004.***

§[C26-1206.4] 27-755 Use of adsorption devices.- In all cases where the use of recirculated air is permitted, the required outdoor air supply may be reduced up to fifty percent, provided that the recirculated air is passed through adsorption devices. The adsorption devices shall be approved and rated. Means shall be provided for maintaining the effectiveness of the adsorption devices.
(a) Improper maintenance.- Should the adsorption devices be improperly maintained so that their effectiveness is impaired, the commissioner may order their removal. If the adsorption devices are removed, the air conditioning or ventilating system shall not be operated without supplying one hundred percent of the outdoor air required by this article or article eight of this subchapter.
(b) Test records.- The building owner shall, at all times, maintain a maintenance record showing the manufacturer's recommendation of the frequency of tests, the method of making tests, and the results of all tests of the adsorption devices. Such tests shall be made and certified by the manufacturer or by a laboratory acceptable to the commissioner at least twice every six months. The records of such tests shall be maintained for a period of at least two years, and shall be available for inspection by the commissioner.
(c) Ventilation of water closet compartments.- The use of any device that returns exhaust air from water closet compartments or from toilet rooms after passing through adsorption devices is not permitted as a means of providing ventilation for a water closet compartment for which a mechanical system of ventilation is required.

§[C26-1206.5] 27-756 Installation and operation of ventilating and air conditioning systems.- Where mechanical ventilation is accepted as an alternate for, or a supplement to, natural means of ventilation, or is

required under the conditions herein prescribed, or where ventilation is provided by means of air conditioning system, the system, equipment, and distributing ducts shall be installed in accordance with the applicable provisions of subchapters thirteen through fifteen of this chapter. Such required ventilating and/or air conditioning systems shall be kept in operation at all times when the building or space is being used in a normal manner in accordance with the purpose for which it was intended.

ARTICLE 8 VENTILATION OF SPECIAL SPACES

§[C26-1207.1] 27-757 Rooms in institutional H-1 occupancy.- In occupancy group H-1, rooms or spaces in which persons are detained under restraint may be naturally ventilated by means meeting the intent of this subchapter.

§[C26-1207.2] 27-758 Kitchens. -
Kitchens shall be ventilated as follows:
(a) Kitchens located within dwelling units and having a floor area of greater than fifty-nine square feet shall have natural ventilation as prescribed in article six of this subchapter. When the floor area is fifty-nine square feet or less, the kitchen shall be ventilated by either of the following:
(1) Natural means complying with article six of this subchapter and further that the windows shall have a minimum width of twelve inches, a minimum area of thee* square feet or ten percent of the floor area of the space whichever is greater and so constructed that at least one-half of their required area may be opened. When the space is located at the top story the window or windows may be replaced with a skylight whose minimum width shall be twelve inches, whose minimum area shall be four square feet or one-eighth the floor area of the space whichever is greater and shall have ventilating openings of at least one-half of the required area of the skylight.
As enacted but "three" probably intended.
(2) Mechanical means exhausting at least two cfm of air per square feet of floor area. Where doors are used to separate the space, the lower portion of each door shall have a metal grille containing at least forty-eight square inches of clean openings or in lieu of such grille two clear open spaces may be provided, each of at least twenty-four square inches, one between the bottom of each door and the floor and the other between the top of each door and the head jamb.
(b) Kitchens, except those located within dwelling units, and side spaces, where cooking of any kind is done, shall be ventilated by either of the following; provided that in no instance may there be any violation of the nuisance provisions of the health code.
(1) Natural means complying with article six of this subchapter and supplemented with auxiliary mechanical supply and exhaust ventilation adequate to remove the fumes and smoke from the cooking equipment when operating.
(2) Mechanical means exhausting at least three cfm of air per square foot of floor area, but in no case less than one hundred fifty cfm. Such air shall be exhausted through duct or chimney constructed in accordance with the provisions of subchapters thirteen and fifteen of this chapter.
(c) Kitchens, snack bars, or pantries, where the operation consists of heating or warming previously prepared food that was cooked elsewhere, or preparation of food in vending machines may be ventilated by either of the following:
(1) Natural ventilation complying with article six of this subchapter.
(2) Mechanical ventilation complying with article seven of this subchapter.

§[C26-1207.3] 27-759 Bathrooms and toilet rooms.-
Bathrooms and toilet rooms shall be ventilated as follows:
(a) When ventilated by natural means, the natural ventilation sources shall comply with section 27-749 of article six of this subchapter and shall have an unobstructed free area of at least five percent of the floor area. In no case shall the net free area of the ventilation sources be less than one and one-half square feet except that in occupancy groups H-1 and H-2, provided the ventilation opening conforming with section 27-749 of article six of this subchapter may be in a vent shaft provided that the net free area of the opening is not less than three square feet. The vent shaft cross-sectional area shall be increased by one-fifth of a square foot for every foot of height, but shall not be less than nine square feet in area and open to the outer air at the top; or, the vent shaft may be open at the sides above the roof with louvres providing an equivalent net free area at the top, equal to the area of the shaft.
(b) By individual vent shafts or ducts constructed of noncombustible materials with a minimum cross-sectional area of one square foot and one-third additional square foot for each additional water closet or urinal above two in number. The upper termination of such ducts shall be equipped with a wind-blown ventilator cap.
(c) When a bathroom or toilet room is not ventilated by natural ventilation as required by this section, it shall be mechanically ventilated as follows:
(1) Rooms containing only one water closet or urinal shall be mechanically ventilated by an exhaust system capable of exhausting at least fifty cubic feet of air per minute. Means shall be provided for air ingress by louvres in the door, by undercutting the door, or by transfer ducts, grilles, or other openings.
(2) Rooms containing more than one water closet or urinal, and any auxiliary spaces such as those used in hand basins, slop sinks, and locker rooms, shall be mechanically ventilated by an independent exhaust system capable of exhausting at least forty cubic feet of air per minute per water closet or urinal. The outdoor air supply shall conform to the requirements of article seven of this subchapter.

(3) Toilet exhaust systems shall be arranged to expel air directly to the outdoors.

§[C26-1207.4] 27-760 Inside locker rooms. -Inside locker rooms and dressing rooms for more than one person shall be provided with exhaust ventilation giving at least four changes of air per hour.

§[C26-1207.5] 27-761 Corridors. -Unless natural sources complying with section 27-749 of article six of this subchapter provide ventilating openings equivalent to at least two and one-half percent of the floor area, corridors in buildings of occupancy groups H-1, J-1 and J-2 more than three stories in height, shall be mechanically ventilated by a system supplying at least one-half cubic foot of outdoor air per minute per square foot of floor area. [, or a system exhausting 1/2 cu. ft. of air per minute per sq. ft. of floor area.]* When air conditioned, a part of the required supply may be recirculated as equivalent outdoor air, but at least thirty-three and one-third percent of the required air supply shall be actual outdoor air.

***Copy in brackets not enacted but probably intended.**

§[C26-1207.6] 27-762 Crawl spaces. -

(a) Buildings and structures without basements. -In buildings and structures constructed without basements, and in which the first floor construction does not bear directly on the ground, a space at least eighteen inches high shall be provided directly under the floor beams, girders or sill of the first floor construction. Where the floor above such a space is constructed of wood or metal, the space shall be ventilated by one of the following means:

(1) At least four widely-distributed ventilating openings, providing a total net free area of at least one eight-hundredth of the area of the crawl space, shall be provided in the foundation walls, and the ground within the crawl space shall be covered with a vapor barrier in durability equivalent to at least fifty-five pounds, roofing felt with unsealed laps and with a transmission rate of one perm or less. At least two ventilating openings, providing a total net free area of at least one fifteen-hundredth the area of the crawl space shall be provided in foundation walls, provided that a vapor barrier with a transmission rate of one perm or less is installed over the entire underside of the first floor construction and overlaps the walls.

(2) Other means acceptable to the commissioner.

(b) Buildings and structures with basements.- No foundation wall vents shall be required where one side of a crawl space is completely open except for structural members, to a basement that has an area at least equivalent to that of the crawl space, provided that the basement is naturally ventilated by openings complying with section 27-749 of article six of this subchapter and having a free openable area of at least five percent of the floor area of the basement.

§[C26-1207.7] 27-763 Ventilation of refrigeration plants.- Rooms containing refrigeration plants shall be ventilated in accordance with the provisions of subchapter thirteen of this chapter.

§[C26-1207.8] 27-764 Ventilation of boiler rooms. - Boiler rooms shall be ventilated in a manner that will provide air for combustion in accordance with the provisions of subchapter fourteen of this chapter and also prevent the accumulation of hot air over or near the equipment within the room.

§[C26-1207.9] 27-765 Ventilation for schools.- School buildings shall be ventilated in accordance with the following requirements:

(a) Rooms of instruction and administration.- Classrooms, other rooms of instruction, and administrative rooms, where the index for ventilation is less than one thousand six hundred fifty, shall have a supply of outdoor air of at least fifteen cfm per occupant and mechanical exhaust. Where windows are used as the source of supply air, mechanical air exhaust shall be fifteen cfm per occupant. When outdoor air is supplied by mechanical means, the exhaust shall be at least eighty percent of the supply. In air-conditioned rooms, the conditioned air supply may be reduced to a minimum of ten cfm per occupant, of which at least five cfm shall be outdoor air.

(b) Lockers and wardrobes. -Lockers, wardrobes, or wardrobe rooms shall be ventilated in accordance with the provisions of section 27-760 of this article, and where these spaces are located within or adjacent to classroom[s]*, the exhaust air from the classroom may be used for such ventilation.

(c) Auditoria and assembly rooms. -Rooms where there are more than seventy-five occupants shall have a supply of outdoor air of at least fifteen cfm per occupant and mechanical exhaust. Where windows are used as the source of supply air, mechanical air exhaust shall be at least fifteen cfm per occupant. When outdoor air is supplied by mechanical means, the mechanical exhaust shall be at least eighty percent of the supply. In air-conditioning spaces, the conditioned air supply may be reduced to a minimum of ten cfm per occupant, of which at least five cfm shall be outdoor air.

***Copy in brackets not enacted but probably intended.**

§[C26-1207.10] 27-766 Ventilation of rooms or spaces with excessive temperatures, strong odors, toxic substances, or airborne irritants.- In these rooms or spaces, prevention of all of the following conditions shall be considered in the design and installation of a ventilating system:

(a) Excessive temperatures that may be detrimental to the occupants.
(b) The danger of large concentrations of toxic substances in the air.
(c) The danger of large concentrations of airborne irritants an** impurities, such as steam, gases, vapor, and dust, that may be injurious to health.
Where the exhausted air may contain toxic substances or strong objectional*** odors, the exhaust system shall be independent of exhaust systems serving other parts of the building.
As enacted but "and" probably intended.
****As enacted but "objectionable" probably intended.***

§[C26-1207.11] 27-767 Ventilation for special uses and occupancies. -Special uses and occupancies, not provided for in this subchapter, shall be ventilated in accordance with the requirements of subchapter seven of this chapter. Ventilation of stage areas shall be in accordance with the requirements of subchapter eight of this chapter.

ARTICLE 9 NOISE CONTROL IN MULTIPLE DWELLINGS

§[C26-1208.1] 27-768 Requirements. -Interior walls, partitions, floor-ceiling constructions, and mechanical equipment in spaces or buildings of occupancy group J-2 shall be designed and constructed in accordance with the requirements of this subchapter, to provide minimum protection for each dwelling unit from extraneous noises emanating from other dwelling units and from mechanical equipment. In addition, airborne sound from exterior mechanical equipment of buildings in any occupancy group shall conform to the requirements of this subchapter**.**
(a) Field testing. -Where conditions indicate that the installed construction or equipment does not meet the noise control prescribed in this subchapter, measurements shall be taken to determine conformance or non-conformance. For conformance with this subchapter, the results of such measurements shall not fail by more than two db to meet the requirements in any octave band, or by more than two points to meet any STC or INR requirements.
(b) Materials or assemblies of materials utilized to meet noise control requirements shall comply with load bearing, fire protection or other applicable requirements of this code for walls, partitions and floor-ceiling constructions.

§[C26-1208.2] 27-769 Acoustical isolation of dwelling units.-
(a) Airborne noise. -
(1) Walls, partitions, and floor-ceiling constructions separating dwelling units from each other or from public halls, corridors, or stairs shall have a minimum sound transmission class (STC) rating of forty-five for airborne noise. This requirement shall not apply to dwelling unit entrance doors. However, such doors shall fit closely and not be undercut. For permits issued after January first, nineteen hundred seventy-two, the STC required shall be fifty for airborne noise. For permits issued after April thirtieth, nineteen hundred seventy-three, dwelling unit entrance doors shall have a minimum STC of 35.
(2) STC ratings shall be obtained by tests conducted in accordance with the procedures of reference standard RS 12-2 except as provided in paragraph three of this subdivision.
(3) The STC ratings of construction assemblies as listed in reference standard RS 12-2 may be used to determine conformance with the requirements of paragraph one of this subdivision and with any other section that requires a specific STC rating.
(4) Penetrations or openings in walls, partitions, or floors for pipe sleeves, medicine cabinets, hampers, electric devices, or similar items shall be packed, sealed, lined, back-plastered, or otherwise isolated by sufficient mass to maintain the required STC ratings.
(5) Where grilles, registers, or diffusers in one dwelling unit are connected by ductwork with grilles, registers, or diffusers in another dwelling unit, and where such connecting duct is less than seven feet long, it shall be lined with duct lining; otherwise, an approved sound attenuating device shall be installed therein. Duct lining shall conform to the requirements of subchapter thirteen of this chapter.
(b) Structure-borne noise. -
(1) Floor-ceiling constructions separating dwelling units from each other or from public halls or corridors shall have a minimum impact noise rating (INR) of zero.
(2) Such INR shall be obtained by tests conducted in accordance with the procedure of reference standard RS 12-3 except as provided in paragraph three of this subdivision.
(3) The INR of a floor-ceiling construction listed in reference standard RS 12-3 shall be used to determine conformance with the requirements of paragraph one of this subdivision above and with any other paragraph that requires a specific INR. Constructions shall be designed and installed to avoid short circuiting the isolation devices that are incorporated into the constructions.
(4) This subdivision shall apply only to construction pursuant to permits issued after the thirty-first day of December, nineteen hundred seventy-six.

§[C26-1208.3] 27-770 Noise control of mechanical equipment. -
(a) **Minimum airborne noise insulation requirements**.
(1) BOILER ROOMS.- Boiler rooms adjoining dwelling spaces, either vertically or horizontally, shall be separated therefrom by floor-ceiling or partition constructions having a minimum STC rating of fifty.
(2) MECHANICAL EQUIPMENT SPACES. -Spaces or shafts containing air conditioning, refrigeration, or ventilating equipment, elevator machinery, or other mechanical equipment shall be separated both vertically and horizontally from dwelling units by constructions

that will provide a minimum STC rating of fifty. [Spaces or shafts containing equipment shall be separated both vertically and horizontally from dwelling units by constructions that will provide a minimum STC rating of fifty.]* Spaces or shafts containing equipment totaling more than seventy-five rated h.p. shall not be located vertically or horizontally adjacent to dwelling units unless the total sound power level output of all the equipment in the space or shaft is certified not to exceed the maximum sound power levels of table 12-3 in any octave band. Such sound power level ratings shall be obtained by tests conducted in accordance with the procedures of reference standard RS 12-5.

a. Ventilating openings into mechanical equipment spaces. -Ventilating openings into boiler rooms and other mechanical equipment spaces shall not be located in yards or courts where there are windows opening from living quarters, unless such ventilating openings are provided with sound attenuating devices if needed to limit noise transmission to NC-40 (noise criterion) levels in the exposed dwelling units. For permits issued after January first, nineteen hundred seventy-two, the permissible noise levels shall not exceed NC-35.

b. Noise criteria requirements.- Noise criteria requirements prescribed in this subchapter shall be in accordance with reference standard RS 12-4.

Copy in brackets not enacted but probably intended.

TABLE 12-3 MAXIMUM SOUND POWER LEVELS PERMITTED IN MECHANICAL SPACES OR SHAFTS ADJOINING DWELLING SPACES [[b]]*

Octave Bands, c.p.s. Mid-Frequency	Max. Sound Power Level db[a]	
	db re 10^{-13} Watts	db re 10^{-12} Watts
63	101	91
125	101	91
250	103	93
500	105	95
1000	102	92
2000	101	91
4000	98	88
8000	96	86

Copy in brackets not enacted but probably intended.

Notes for Table 12-3:

[a]The maximum sound power levels shall be reduced five db in any octave band where the equipment data indicate pure tone generation. The presence of pure tones may be determined by means of one-third octave band analysis. The criterion for a significant prue-tone component shall be an audible pure-tone sound together with an increase of the sound pressure level in the corresponding one-third octave band above the mean of the two adjacent one-third of at least:

Center frequency of one-third octave band……....	40/125	160/250	215/500	630/1,000	1,000/10,000
Increase in sound pressure level (db)	6	4	3	2	1 ½

[b]For permits issued after January first, nineteen hundred seventy-two, the maximum sound power levels shall be changed as follows:

Octave Bands, c.p.s. Mid-Frequency	db re 10^{-13} Watts	db re 10^{-12} Watts
63	98	88
125	97	87
250	100	90
1000	97	87
2000	96	86
4000	93	83
8000	91	81

TABLE 12-4 MAXIMUM SOUND POWER LEVELS PERMITTED FOR EXTERIOR MECHANICAL EQUIPMENT ADJOINING BUILDINGS[b]

Maximum distance from equipment to exterior window (ft.)[a]	Maximum Sound Power Levels in Octave Bands—db re 10^{-13} Watts[a]							
	Octave Bands c.p.s Mid Frequency							
	63	125	250	500	1000	2000	4000	8000
12	99	92	88	84	82	82	82	82
25	103	96	92	88	86	86	86	86
50	107	100	96	92	90	90	90	90
100	110	103	99	95	93	93	93	93
	Octave Bands—db re 10^{-12} Watts							
12	89	82	78	74	72	72	72	72
25	93	86	82	78	76	76	76	76
50	97	90	86	82	80	80	80	80
100	100	93	89	85	83	83	83	83

Notes for Table 12-4:

[a]The minimum distance shall be measured in a straight line regardless of obstructions. Interpolated levels may be used for distances between those given in this table. See note a at end of table 12-3.

1. In the event sound power level data for the exterior mechanical equipment is not available, the sound pressure levels in octave bands, of the exterior mechanical equipment shall be measured.
2. The measurements shall be obtained with the microphone of the measuring equipment located at the interior of the dwelling unit affected in a line with the window nearest the exterior mechanical equipment. The window shall be fully open and the microphone shall be located three ft. away from the open portion of the window.
3. Measurements shall be obtained during times when the ambient sound pressure levels, in octave bands, are at least six db lower at all octave bands than the sound pressure levels measured with the exterior equipment operating. By ambient sound pressure levels is meant the measured sound pressure levels, at the above described measuring location, with the exterior equipment not in operation.

For permits issued after January first, nineteen hundred seventy-two, the permitted maximum sound power levels for exterior mechanical equipment adjoining buildings shall be changed as follows:

Feet	Maximum Sound Power Levels in Octave Bands—db re 10^{-13} Watts[a]							
	63	125	250	500	1000	2000	4000	8000
12	97	90	83	78	75	73	72	71
25	104	96	89	84	81	79	78	77
50	110	102	95	90	87	85	84	83
100	116	108	101	96	93	91	90	89
	[in]* Octave Bands—db re 10^{-12} Watts							
12	87	80	73	68	65	63	62	61
25	94	86	79	74	71	69	68	67
50	100	92	85	80	77	75	74	73
100	106	98	91	86	83	81	80	79

Copy in brackets not enacted, prbably intended.

TABLE 12-5 NOISE OUTPUT LIMITATIONS FOR EXTERIOR MECHANICAL EQUIPMENT MAXIMUM SOUND PRESSURE LEVEL[a,b] (NOT TO BE EXCEEDED IN ANY OCTAVE BANDS)

Octave Bands Center Frequency (cps)	Decibels re .0002 Microbar
63	64
125	57
250	51
500	45
1000	41
2000	39
4000	38
8000	37

Notes for Table 12-5:

[a]Measurements shall be obtained with a sound level meter and octave band analyzer, calibrated both electronically and acoustically before and after the measurements are made. The equipment used shall meet the requirements of reference standards RS 12-6.

[b]For permits issued after January first, nineteen hundred seventy-two, the maximum sound pressure levels shall be changed as follows:

Octave Bands Center Frequencies (cps)	Decibels re .0002 microbar
63	61
125	53
250	46
500	40
1000	36
2000	34
4000	33
8000	32

(3) DUCTWORK. -Ducts serving dwelling units shall be lined with duct lining for at least twenty feet from the fan discharge or intake; otherwise, an approved sound attenuating device shall be installed therein. All toilet exhaust ducts shall be lined with duct lining for at least twenty feet upstream of the exhaust fan intake, otherwise, an approved sound attenuating device shall be installed therein. Duct lining shall conform to the requirements of subchapter thirteen of this chapter.

(4) EXTERIOR MECHANICAL EQUIPMENT. -Mechanical equipment in a building in any occupancy group, when located outside of the building in a yard or court or on a roof, or where the equipment opens to the exterior of the building, shall be subject to the noise output limitations given in table 12-4 where one or more windows of a dwelling unit in any building in occupancy groups J-1, J-2, or J-3 is located within a sphere of one hundred foot radius whose center is any part of the equipment or its housing, unless it can be shown that the sound pressure levels, in octave bands, of the exterior mechanical equipment as measured within the dwelling unit do not exceed the levels given in table 12-5.

(b) Minimum structure-borne noise and vibration isolation requirements. -All isolators used in accordance with the following requirements shall be approved.

(1) BOILER ROOMS. -

a. Boilers.- All boilers supported on floors above a story having dwelling units shall be supported on resilient isolators having a minimum static deflection of one inch. The isolators shall be installed directly under the structural frame of the boiler.

b. Boiler breeching and piping.- When boilers are equipped with mechanical draft fans, the boiler breeching and piping that is supported from or on slabs, floors or walls that are contiguous to the dwelling unit shall be supported for a distance of fifty pipe diameters on or from resilient isolators. Each isolator shall have a minimum static deflection of one inch.

(2) INCINERATOR CHARGING CHUTES. -

a. Metal chutes. -Metal chutes, metal chute supports, and/or metal chute bracing, shall be free of direct contact with the shaft enclosure and the openings provided in the floor construction. Metal chutes shall be resiliently supported at each structural support location. Isolators shall provide a minimum static deflection of 0.30 in. All chutes shall be plumb.

b. Masonry chutes. -The interior chute wall shall be plumb and without obstructions for the full height of the shaft and shall have a smooth interior finish.

(3) PIPING. -

a. Metal piping connected to power driven equipment shall be resiliently supported from or on the building structure for a distance of fifty pipe diameters from the power driven equipment. The resilient isolators shall have a minimum static deflection of one inch for all piping with a four inch or larger actual outside diameter and one-half inch for piping with less than four inches in actual outside diameter. Piping connected to fluid pressure-reducing valves shall be resiliently isolated for a distance of fifty pipe diameters from pressure reducing valves and isolators shall provide a minimum static deflection of one-half inch.

b. Equipment such as heat exchangers, absorption refrigeration machines, etc., that is located on any floor or roof other than a floor on grade, and that is not power driven but is connected by metal piping to power driven equipment, shall be resiliently supported from or on the building structure, for a distance of fifty pipe diameters from the power driven equipment. The resilient supports shall be vibration isolators having a minimum static deflection of one inch and shall incorporate approved resilient pads having a minimum thickness of one-quarter inch.

(4) FANS. -Except for fans installed in compliance with section 27-353 of article five of subchapter five of this chapter all fan equipment located on any roof or floor other than a floor on grade shall be mounted on or from vibration isolators. Fan equipment with motor drives separated from the fan equipment shall be supported on an isolated integral rigid structural base supporting both the fan and motor. Fan equipment with motor drives supported from the fan equipment shall be mounted directly on vibration isolators. Each isolator shall have provision for leveling. Isolators shall incorporate resilient pads having a minimum thickness of one-quarter inch. The vibration isolators shall provide a minimum isolator efficiency of ninety percent at fan rotor rpm with a maximum deflection of two inches. Fans and compressors of three h.p. or less assembled in unitary containers may meet this requirement with isolators internal to the container providing the isolators meet the above minimum isolator efficiencies.

(5) PUMPS. -All pumps of three h.p. or more located on any floor other than a floor on grade shall be supported on vibration isolators having a minimum isolation efficiency or eighty-five percent at the lowest disturbing frequency. Each isolator shall incorporate a leveling device and a resilient pad having a minimum thickness of one-quarter inch.

(6) COMPRESSORS. -Compressors and drives located on a floor other than a floor on grade shall be mounted on vibration isolators having a minimum isolation efficiency of eighty-five percent at the lowest disturbing frequency. Each isolator shall incorporate a leveling device and a resilient pad having a minimum thickness of one-quarter inch.

(7) COOLING TOWERS. -All moving parts of cooling towers located on a roof or floor other than a floor on grade shall be installed on vibration isolators providing a minimum isolation efficiency of eighty-five percent at fan rotor rpm with a maximum static deflection of four inches. Each isolator shall incorporate a leveling device and a resilient pad having a minimum thickness of one-quarter inch.

(8) EVAPORATIVE CONDENSERS.- Evaporative and air cooled condensers located on a roof or floor other

than a floor on grade shall be mounted on vibration isolators providing a minimum isolation efficiency of eighty-five percent at fan rotor rpm with a maximum static deflection of four inches. Each isolator shall incorporate a leveling device and a resilient pad having a minimum thickness of one-quarter inch.

(9) DUCT CONNECTIONS TO FAN EQUIPMENT. - Flexible connections shall be installed between fan equipment and connecting ductwork.

(10) ELEVATOR MACHINERY.- Gear-driven machinery, gearless machinery, motor generators, and controllers located in an elevator machinery room or shaft on a roof, or on a floor other than a floor on grade, shall be supported on vibration isolator pads having a minimum thickness of one-half inch.

(c) Maximum permissible air velocities in ducts. -

(1) DUCTS LOCATED OVER CEILINGS OF DWELLING PLACES. -The maximum permissible air velocity in ductwork located over the ceilings of dwelling spaces or in masonry shafts adjoining dwelling spaces shall not exceed the velocities prescribed in table 12-6.

TABLE 12-6 MAXIMUM PERMISSIBLE AIR VELOCITIES IN DUCTS

Type of System	Branch Ducts	Sub-Main Ducts	Main Ducts
Low Velocity	750 fpm	1000 fpm	1500 fpm
High Velocity	1000	2000	3000

In the application of table 12-6 the following shall apply:

a. Any duct that connects directly to any terminal device (grille, diffuser, etc.) shall be classified as a branch duct for a distance of at least four feet from the terminal device.

b. Any duct that connects a branch duct to a main duct or to the fan shall be classified as a sub-main duct. No duct may be classified as a sub-main duct if it connects to a terminal device by means of a connection less than four feet in length.

c. When a duct is connected to the fan and to two or more sub-main ducts it shall be classified as a main duct.

d. The maximum velocities shown in table 12-6 for low velocity ductwork shall apply in all cases except where a system of round ductwork is used and an acoustic air control device with self-contained attenuation components is located in the ductwork prior to each air terminal device. Branch ducts, if any connecting the acoustic air control devices to the terminals shall not have air velocities exceeding seven hundred fifty fpm. Maximum power level ratings for the acoustic air control devices shall be three db less than the values shown in table 12-7.

(d) Maximum permissible sound power levels of fan coil units, grilles, registers, diffusers and induction units. -Sound power level data, in octave bands, shall be certified in accordance with the provisions of section 27-131 of article seven of subchapter one of this chapter, for grilles, registers, diffusers and induction units at design operating conditions and for coil units when operating at specified cfm. The sound power levels shall not exceed the levels listed in table 12-7 when measured in accordance with the provisions of reference standard RS 12-5

TABLE 12-7 MAXIMUM PERMISSIBLE SOUND POWER LEVELS FOR TERMINAL UNITS[1]

Octave Bands, c.p.s. Mid-Frequency	Sound Power Levels, db	
	db re 10^{-13} Watts	db re 10^{-12} Watts
63	79	69
125	73	63
250	67	57
500	62	52
1000	59	49
2000	57	47
4000	54	44
8000	53	43

Notes for Table 12-7:

[1]For permits issued after January first, nineteen hundred seventy-two, the Maximum Permissible Sound Power Level for terminal units shall be changed as follows:

Octave Bands, c.p.s. Mid-Frequencies	Sound Power Levels, [db]*	
	db re 10^{-13} Watts	db re 10^{-12} Watts
63	76	66
125	69	59
250	62	52
500	57	47
1000	54	44
2000	52	42
4000	49	39
8000	48	38

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SUBCHAPTER 13
MECHANICAL VENTILATION, AIR CONDITIONING, AND REFRIGERATION SYSTEMS

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ARTICLE 1 GENERAL

§[C26-1300.1] 27-771 Scope. -This subchapter shall establish the minimum safety requirements for, and control the design, construction, installation, alteration, and use of, systems for providing mechanical ventilation, air conditioning, air cooling, air heating, and refrigeration. In addition, within special flood hazard areas, and below the regulatory flood datum, as described in article ten of subchapter four of this chapter, mechanical ventilation, air conditioning, and refrigeration systems, and related equipment shall meet the requirements of the applicable provisions of reference standard RS 4-5.

§[C26-1300.2] 27-772 Standards. -The provisions of reference standard RS-13 shall be a part of this subchapter.

§[C26-1300.3] 27-773 Definitions. -For definitions to be used in the interpretation of this subchapter, see subchapter two of this chapter.

§[C26-1300.4] 27-774 Plans. -For the requirements governing the filing of plans and the work to be shown on plans, see subchapter one of this chapter.

§[C26-1300.5] 27-775 Permits. -For the requirements governing equipment work permits and equipment use permits, see subchapter one of this chapter.

§[C26-1300.6] 27-776 General requirements. -

(a) Ventilation. -The minimum quantities of air and other requirements for the ventilation of habitable and occupiable rooms shall be as required by subchapter twelve of this chapter, and for the ventilation of special uses and occupancies by subchapters seven and eight of this chapter.

(b) Noise control. -Noise control requirements for mechanical equipment shall be as required by subchapter twelve of this chapter.

(c) Safety. -All systems, equipment, and materials including any devices, apparatus, piping work, sheet metal work, insulation work, and supports therefor, used as part of or in connection with installations governed by this subchapter, shall be designed, installed, located, and operated so that they will not create an immediate or potential danger to life or impair public health or welfare. No piping of any kind, with the exception of piping required or, permitted under subchapter seventeen of this chapter, shall be permitted within a stair enclosure. Ducts protected in accordance with the requirements of this subchapter, which do not reduce the required clearances of a stair enclosure, are permissible.

(d) Openings. -No openings for outdoor exhaust air discharges, air intakes, or reliefs from equipment shall be located and constructed so as to:

(1) Interfere with the proper functioning of other openings in the same building or in adjoining buildings.

(2) Interfere unreasonably with the occupants of the same building or adjoining buildings or with the general public.

(3) Create a fire or health hazard.

§[C26-1300.7] 27-777 Construction.-

The construction, installation, and alteration of systems for providing mechanical ventilation, air conditioning, air cooling, air heating, and refrigeration, shall be in accordance with the following:

(a) Air conditioning and ventilating systems for all occupancies shall be constructed in accordance with the

provisions of reference standard RS 13-1. In addition, equipment used for air conditioning systems shall be constructed, installed and altered in accordance with the provisions of reference standards RS 13-7 through 13-15. Where any conflicts arise between the electrical provisions of the foregoing reference standards and the New York City electrical code, the provisions of the latter shall govern.

(b) Air conditioning systems for one- and two-family dwellings, for one story buildings four thousand square feet or less in gross floor area provided ducts do not penetrate fire divisions, and for buildings classified in mercantile occupancy group C, twenty-five hundred square feet or less in gross floor area shall be constructed and installed in accordance with the provisions of reference standard RS 13-4. Also see article eleven of subchapter fourteen of this chapter.

(c) Exhaust systems for cooking spaces requiring mechanical ventilation in accordance with the provisions of subchapter twelve of this chapter, except kitchens located within dwelling units, shall be installed as provided in reference standard RS 13-2.

(d) Restaurant cooking equipment shall be provided with a means of ventilating such equipment constructed in accordance with the provisions of reference standard RS 13-3, provided however that restaurant cooking equipment installed for periodic cooking use other than commercial [*sic*] only, in community rooms of multiple dwellings, firehouses and other low hazard occupancies as determined by the commissioner may be provided with a means of ventilation constructed in accordance with the provisions of reference standard RS 13-1.

(e) Air blower and exhaust systems, where required for the removal or conveying of dust, vapor, or other impurities, shall be installed in accordance with the provisions of reference standard RS 13-5.

(f) Refrigeration systems shall be constructed, installed, and altered in accordance with the provisions of reference standard RS 13-6.

(g) The utilization of city water in air conditioning and refrigeration systems shall be subject to the requirements of reference standard RS-16.

§[C26-1300.8] 27-777.1 Smoke control requirements.

(a) In all buildings classified in occupancy group C, D, E, F, G, H, J-1 or J-2:

(1) Ventilation systems supplying different occupancy groups shall not be interconnected, provided however that a ventilation system may serve two occupancy groups located on the same floor when the accessory use occupies less than twenty per cent of the floor area occupied by the principal use.

(2) Ventilation systems supplying corridors shall not be interconnected with systems serving other spaces, except that this requirement shall not apply to floors used exclusively as office space in buildings classified in occupancy group E which are fully sprinklered.

(3) A ventilation system supplying any part of a means of egress shall not be interconnected with any other ventilation system.

(4) A ventilation system supplying public areas and assembly spaces shall have smoke detecting devices that will shut down the system upon detecting smoke.

(5) In buildings classified in occupancy group J-2, ventilation systems supplying individual apartments shall not be directly connected with any other ventilation system.

(6) Except in buildings classified in occupancy group J-2, and as otherwise provided in section 27-343 of article five of subchapter five of this chapter, either a combined heat and smoke damper or independent heat and smoke dampers shall be installed at any penetration of construction required to have a fire-resistance rating.

(b) In all buildings classified in occupancy group C, D, E, F, G, H or J-1, there shall be provided a system of mechanical means of sufficient capacity to exhaust six air changes per hour or one cfm/sq. ft., whichever is greater, from the largest floor in the building, using either dedicated fan equipment or the building ventilation system arranged to shut down automatically with manual override capability to exhaust one floor at a time through a roof or an approved location on an exterior wall other than a lot line wall.

§[C26-1300.9] 27-777.2 Ventilation in existing J-1 buildings. -In any existing building classified in occupancy group J-1, either seventy-five feet or more in height or containing thirty or more sleeping rooms:

(a) Where a corridor or space above a ceiling in a corridor is being used on or after February first, nineteen hundred eighty-four to furnish direct ventilation to a sleeping room or suite, such use shall, unless continued use is permitted by the commissioner, be discontinued by closing all openings between the corridor and sleeping room with construction having a fire-resistance rating equal to the construction in which the opening occurs. When continued use of corridor spaces as a plenum is permitted, smoke detecting devices shall be installed in accordance with the requirements of section 27-981 of article six of subchapter seventeen of this chapter and activation of any two detectors on a floor shall cause closure of all openings to that floor and shut-off of ventilation service to the floor.

(b) All corridors and other public areas not provided with natural ventilation meeting the requirements of section 27-761 of article eight of subchapter twelve of this chapter shall be provided with manual smoke purging by means of existing ventilation systems.

(c) The requirements of this section shall be complied with on or before April first, nineteen eighty-seven.

ARTICLE 2 INSPECTIONS AND TESTS FOR EQUIPMENT USE PERMITS

§[C26-1301.1] 27-778 General requirements.-
No required ventilating system, no voluntary air duct system containing smoke detection or fire protection devices that are required by this subchapter, and no refrigeration system shall be placed in operation, until it has been tested and inspected in accordance with the requirements of this subchapter and until an equipment use permit has been issued by the commissioner, except as hereinafter provided.

§[C26-1301.2] 27-779 Required ventilating systems.-
The following tests and inspection requirements shall be complied with in order to obtain an equipment use permit for a required ventilating system.
***(a) Procedure.-** A required ventilating system shall be subject to the requirements for controlled inspection as provided in article eight of subchapter one of this chapter except that it shall not be required that the architect or engineer be in the employ of the owner. Such requirements shall include (1) a controlled inspection to verify that the installation and operation of the completed system comply with the requirements of this subchapter, comprising tests to ascertain that the amount of air being supplied to and exhausted from each space conforms with the requirements of this code, and tests that all required smoke detection and fire protection devices are functioning properly; and (2) a controlled inspection comprising tests to verify that required fire dampers are installed and functioning properly as provided for in subdivision (d) of section 27-343 of this code. When a required ventilating system handles five thousand cfm or less, it shall be subject to controlled inspection except that the person making the inspection may be an architect, engineer or a person with at least five years of experience installing ventilating systems. However, if such a system exhausts any of the following:
(1) fumes, dusts, vapors or other noxious or injurious substances,
(2) substances that create a fire hazard,
then the person making the inspection shall be an architect or engineer. It shall not be required that the architect or engineer be in the employ of the owner. The test reports required under the provisions of article eight of subchapter one of this chapter shall be filed in the form prescribed by the commissioner. The form shall include the quantity of air supplied or exhausted by each outlet.
(b) Fire extinguishing systems.- No equipment use permit for a required ventilating system containing a required fire extinguishing system shall be issued until a signed statement has been obtained from a representative of the fire commissioner who has witnessed the test of the extinguishing system and its control devices, certifying the fire commissioner's acceptance of such a system.
(c) Owner's statement.- A statement shall be filed with the commissioner by the owner or lessee of the building that the required ventilating system will be kept in continuous operation at all times during the occupancy of the building and, if any smoke or fire detection devices or fire extinguishing systems have been installed, that he or she will have such devices and the fan shut-offs actuated by them tested and inspected by a competent person or agency at one year intervals or less. The owner or lessee shall also state that he or she will promptly make any necessary adjustments and repairs to keep the ventilating system and its safety devices in proper operating condition. A record of each inspection and test shall be maintained on the premises by the owner or lessee, and records for at least the last two years shall be made available for inspection by the commissioner and the fire commissioner.
Local Law 26-2004.

§[C26-1301.3] 27-780 Voluntary ventilating systems or other voluntary air duct systems. -The following test and inspection requirements shall be complied with in order to obtain an equipment use permit for a voluntary ventilating system or other air duct system when smoke detectors or fire protection devices are required.
(a) Procedure.- A voluntary ventilating system or other voluntary air duct system shall be subject to test and inspection to ascertain that all smoke detection and fire protection devices are functioning properly, and that the installation conforms with the requirements of this subchapter.
(b) Fire extinguishing systems.- No equipment use permit for a voluntary ventilating system containing a required fire extinguishing system shall be issued until a signed statement has been obtained from a representative of the fire commissioner who has witnessed the test of the extinguishing system and its control devices, certifying the fire commissioner's acceptance of such a system.
(c) Owner's statement.- A statement shall be filed with the commissioner by the owner or lessee of the building that he or she will have such devices and the fan shut-offs actuated by them tested and inspected by a competent person or agency at one year intervals or less. The owner or lessee shall also state that he or she will promptly make any necessary adjustments and repairs to keep these devices in operation. A record of each inspection and test shall be maintained on the premises by the owner or lessee, and the records for at least the last two years of operation shall be made available for inspection by the commissioner and the fire commissioner.

§[C26-1301.4] 27-781 Refrigerating systems. -The following test and inspection requirements shall be complied

with in order to obtain an equipment use permit for a refrigerating system, except as hereinafter provided.

(a) Procedure.- A refrigeration system shall be designated for test and inspection under the requirements for controlled inspection as provided in article eight of subchapter one of this chapter, except that it shall not be required that the architect or engineer be in the employ of the owner. Test information and all other information required by reference standard RS 13-6 shall be posted, and the inspection shall be made of the completed system to verify that the installation complies with the requirements of this subchapter.

(b) Temporary permit.- A temporary equipment use permit shall be required for a nonoperating system in which a charge is maintained. See subchapter one of this chapter for provisions governing temporary permits.

***(c) Exception.-** No equipment use permit or temporary equipment use permit shall be required for any refrigerating system exempted under the provisions of section 27-189 of article eighteen of subchapter one of this chapter; for any system using a group A2, B1 or B2 refrigerant and having a prime mover of one horsepower or less; or for any system using water or air as a refrigerant.

****Local Law 32-2004.***

ARTICLE 3 OPERATION AND MAINTENANCE

§[C26-1302.1] 27-782 General requirements.- All systems shall be maintained in a clean and orderly condition, free from accumulations of dust, oily waste, or debris. All machinery and all operating devices on piping and ductwork shall be kept readily accessible for inspections and repair. Plenum chambers, air ducts, and cooling and heating coils shall be kept clean. Filters shall be cleaned or renewed at proper intervals to insure safe operation and adequate air flow and shall comply with the applicable requirements of the fire prevention code.

ARTICLE 4 POSTING

§[C26-1303.1] 27-783 General requirements. – Information to be posted shall be as required in reference standard RS-13. Method of posting shall be as required in subchapter one of this chapter.

ARTICLE 5 CODE REQUIREMENTS OF OTHER CITY DEPARTMENTS

§[C26-1304.1] 27-784 Electrical. -All electrical work shall be installed in accordance with the requirements of the electrical code of the city of New York.

§[C26-1304.2] 27-785 Air pollution. -The discharge of odors, smoke, or other emissions into the open air shall be subject to the requirements of the New York City air pollution control code.

§[C26-1304.3] 27-786 Refrigeration.- For operating permits and qualification of operators for refrigeration systems, see the requirements of the fire department.

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ARTICLE 1 GENERAL

§[C26-1400.1] 27-787 Scope. -This subchapter shall establish the minimum safety requirements for, and control the design, construction, installation, alteration, and use of heating, combustion, fuel storage, and related equipment. In addition, within special flood hazard areas, and below the regulatory flood datum, as described in article ten of subchapter four of this chapter, heating, combustion, fuel storage and related equipment shall meet the requirements of the applicable provisions of reference standard RS 4-5.

§[C26-1400.2] 27-788 Standards. -The provisions of reference standard RS-14 shall be a part of this subchapter.

§[C26-1400.3] 27-789 Definitions. -For definitions to be used in the interpretation of this subchapter, see subchapter two of this chapter.

§[C26-1400.4] 27-790 Plans. -For the requirements governing the filing of plans and the work to be shown on plans, see subchapter one of this chapter.

§[C26-1400.5] 27-791 Permits. -For the requirements governing equipment work permits and equipment use permits, see subchapter one of this chapter.

§[C26-1400.6] 27-792 General requirements.-
All heating, combustion, and cooking equipment shall be installed with adequate clearances from combustible construction [*sic*] in accordance with the provisions of this subchapter. Either the equipment shall be provided with insulation or the building construction shall be fire protected, so that during continued or intermittent operation the surface of combustible construction materials will not be raised to a temperature higher than one hundred seventy degrees Fahrenheit. Such equipment shall be located, arranged, and protected so that the means of access to them for ordinary operation and maintenance will not be hazardous. They shall not be located in exits, hoistways, nor in the same space with other equipment or materials when the proximity to the other equipment or materials would create a hazardous condition. All piping shall be installed so as to provide for adequate expansion and contraction.

ARTICLE 2 INSPECTIONS AND TESTS FOR EQUIPMENT USE PERMITS

***§[C26-1401.1] 27-793 Boilers**. -
(a) Acceptance tests. -Boilers shall not be placed in operation upon completion of construction until they have been inspected and tested and an equipment use permit has been issued by the commissioner. All final inspections and tests for boilers shall be subject to the provisions for controlled inspection as provided in subchapter one of this chapter, except that such inspections and tests shall be made by a qualified boiler inspector in the employ of the department or a duly authorized insurance company as provided in section two hundred four of the labor law. Equipment having a Btu input of not more than three hundred fifty thousand Btu per hour shall be exempt from this requirement.
(b) Periodic boiler inspections.-
(1) Except as provided in paragraph two of this subdivision, all boilers, as defined in section two hundred four of the labor law, excepting those boilers listed in subdivision five of such section of the labor law, shall be inspected at least once a year by duly authorized insurance companies or other qualified inspectors in the manner set forth in rules and regulations promulgated by the commissioner. Such inspections shall also include the chimney connectors described in article three of subchapter fifteen of this chapter. All boiler inspectors who perform periodic inspections pursuant to this subdivision shall be qualified under section two hundred four of the labor law and rules and regulations promulgated by the commissioner of labor.
(2) Each owner of a high-pressure boiler, as defined in sections 26-160 and 27-795 of this code, may choose to have the annual boiler inspection conducted by the department or by a duly authorized insurance company.
(c) Owner's annual statement. -
(1) The owner of each boiler that is subject to periodic inspection shall file an annual written statement with the commissioner, specifying:
a. The location of each boiler.
b. Whether or not the owner, agent, or lessee has had the boiler inspected by a duly authorized insurance company or other qualified inspector in accordance with the requirements of subdivision (b) of this section, setting forth the name and address of the insurance

company or other qualified inspector, the date of inspection, and the policy number covering the boiler.
(2) If the periodic boiler inspection has been performed by a duly authorized insurance company or other qualified inspector pursuant to subdivision (b) of this section, the annual statement shall be accompanied by a signed copy of the report of each boiler inspection, on such forms and in such manner as required by the commissioner.
(3) The statement shall be filed within thirty days after installation of a boiler. Thereafter, it shall be filed on or before the last day of December of the year of each annual inspection.
(d) Removal or discontinuance notice. -The owner of a boiler that is removed or discontinued from use shall file a written notice of such removal or discontinuance with the commissioner within thirty days of the date of removal or discontinuance.
(e) Failure to file statements and notices. -If an owner of a boiler shall fail to file any statement or notice required under this section, such owner shall be liable for a civil penalty pursuant to section 26-125 of this code.
(f) Additional inspections.- In addition to the inspections required by subdivisions (a) and (b) of this section, the commissioner may make such additional inspections as required to enforce the provisions of this code. No fee shall be charged for such additional inspections.
(g) Fees. -Every owner of a boiler in use and inspected by a duly authorized insurance company shall pay to the department an annual fee for each boiler in the amount prescribed by section 26-213 of title twenty-six of the administrative code to cover the city's administrative and supervisory costs involved. The fee shall be payable at the time of the filing of the statement required by this subdivision.
******Local Law 62-1991.***

§[C26-1401.2] 27-794 Fuel burning and fuel storage installations. -
(a) Field tests. -
(1) All liquid fuel piping and fuel oil storage tanks shall be hydrostatically tested for tightness by the contractor who made the installation before the work is closed in and before the system is operated. The piping shall be tested at one and one-half times the maximum working pressure applicable to that part of the piping system but at a pressure less than the test pressure required for the storage tank. The minimum pressure for testing tanks shall be one and one-half times the maximum working pressure applicable to the tank but in no case less than twenty-five psi. The hydrostatic pressure shall be maintained until all joints and connections have been visually inspected for leaks, but in no case for less than one-half hour. The tank shall not show any permanent deformation as a result of the test. A record shall be kept of the pressure tests showing the name of the contractor and the pressures at which the piping and the tank were tested.
(2) Gas distribution piping shall be tested for tightness by the contractor who made the installation before the work is closed in and before the system is operated, in accordance with the requirements of section 27-922 of article seven of subchapter sixteen of this chapter. For gas storage tanks see chapter four of this title.
(b) Inspections. -Fuel burning equipment shall be inspected in accordance with the requirements for controlled inspections in subchapter one, except that the inspections may be made by an architect or engineer who need not be in the employ of the owner or by a representative of the commissioner.
(c) Temporary use permit. -A temporary equipment use permit, as provided in subchapter one, may be issued by the commissioner upon receipt of a statement signed by the contractor who made the installation, certifying that:
(1) The portions of the work completed conform with all provisions of the code listing at the same any items still to be completed.
(2) All required pressure tests have been successfully completed on the portion of the work installed and giving the pressure at which the tests were made.
(d) Instruction cards. -For oil burning systems, cards giving complete instructions for the care and operation of the system shall be furnished and shall be permanently located in an easily visible and accessible location near the equipment.
(e) Exceptions. -An equipment use permit shall not be required for any installation for which a work permit is not required as provided in section 27-189 of article eighteen of subchapter one of this chapter.

ARTICLE 3 LICENSES AND CERTIFICATES

§[C26-1402.1] 27-795 High pressure boiler operating engineer license. -If a boiler produces steam or vapor or has a safety valve setting of more than fifteen psi and rated in excess of ten hp or if such boiler produces hot water at a pressure of more than one hundred sixty psi or at a temperature over two hundred fifty degrees Fahrenheit, such boiler shall be operated by a high-pressure boiler operator licensed in accordance with the requirements of subchapter two of title twenty-six of the administrative code.

§[C26-1402.2] 27-796 Oil burning equipment installer license.- All oil burning installations, including storage equipment, shall be made by, or under, the direct supervision of a licensed oil burning equipment installer, in accordance with requirements of subchapter two of title twenty-six of the administrative code.

§[C26-1402.3] 27-797 Certificates. -No oil burning equipment hereafter installed shall be operated until an equipment use permit has been issued by the commissioner,

the requirements of the air pollution control code have been met as provided in section 27-799 of article four of this chapter, and until approval for the storage of fuel oil has been given by the fire commissioner, except that temporary operation may be permitted as provided in section 27-188 of article eighteen of subchapter one of this chapter.
(a) Every oil burning installation that is not fully automatic or requires preheating shall be operated by, or under, the direct supervision of a person holding a certificate of fitness issued by the fire commissioner. Such person shall be in the building at all times while the burners are in operation, and shall be present in the boiler room during the starting of the operation of a boiler.

§[C26-1402.4] 27-798 Operator's inspection after repairs.- After any repairs are made to a boiler or fuel burning equipment for which licensed or qualified operators are required, such operators shall check the repairs, together with the functioning of all control [*sic*] devices and the positioning of all valves. These licensed or qualified operators also shall be present during the starting of the operation of the equipment and shall be responsible for the proper and safe operation of such equipment.

ARTICLE 4 ABATEMENT OF AIR CONTAMINANTS

§[C26-1403.1] 27-799 General requirements.-
All heating and combustion equipment that is fired with solid, liquid, or gas fuels and that is subject to the provisions of this code, including all rubbish burners and incinerators, shall comply with the requirements of the air pollution control code.

ARTICLE 5 EQUIPMENT STANDARDS

§[C26-1404.1] 27-800 Standards for gas and oil burning equipment. -Gas burning and fuel oil burning equipment and accessory equipment or devices shall be accepted for use in accordance with the provisions of this subchapter when they comply with the test and installation standards of reference standard RS-14 as applicable, or have been approved by the board. Both methods shall be subject to the requirements of section 27-135 of article eight of subchapter one of this chapter.

ARTICLE 6 EQUIPMENT CLASSIFICATION

§[C26-1405.1] 27-801 Low temperature equipment. -Equipment whose products of combustion at the point of leaving the equipment have a temperature of six hundred degrees Fahrenheit or less under normal operating conditions shall be classified as low temperature equipment.

§[C26-1405.2] 27-802 Medium temperature equipment.- Equipment whose products of combustion at the point of leaving the equipment have a temperature of between six hundred degrees and one thousand degrees Fahrenheit under normal operating conditions shall be classified as medium temperature equipment.

§[C26-1405.3] 27-803 High temperature equipment.- Equipment whose products of combustion at the point of leaving the equipment have a temperature of one thousand degrees Fahrenheit or greater under normal operating conditions shall be classified as high temperature equipment.

ARTICLE 7 EQUIPMENT FOUNDATION MOUNTINGS

§[C26-1406.1] 27-804 General requirements. -All floor mounted combustion or heating equipment shall be mounted on noncombustible construction as provided in reference standard RS 14-17 or on combustible construction if such construction is protected as required in reference standard RS 14-17, provided the following conditions are met:
(a) All clearances shall comply with the requirements specified in section 27-792 of article one of this subchapter.
(b) Heating and combustion equipment which has been tested in accordance with applicable standards listed in reference standard RS-14, shall be installed with the clearances determined by such tests.
(c) Equipment which has been approved, as provided in section 27-135 of article eight of subchapter one of this chapter, shall be installed in accordance with the conditions of such approval.
(d) When mounted above combustible construction, the equipment is arranged so that flame or gaseous products of combustion do not impinge upon the base of the equipment.

ARTICLE 8 EQUIPMENT CLEARANCES

§[C26-1407.1] 27-805 General requirements.-
Clearances from combustible construction in walls, partitions and ceilings adjacent to combustion or heating equipment shall not be less than that tabulated in reference standard RS 14-15, provided the following conditions are met:
(a) All clearances shall comply with the requirements specified in section 27-792 of article one of this subchapter.
(b) Heating and combustion equipment which has been tested in accordance with the applicable standards listed in reference standard RS-14, shall be installed with the clearances determined by such tests.
(c) Equipment which has been approved, as provided in section 27-135 of article eight of subchapter one of this chapter, shall be installed in accordance with the conditions of such approval.

§[C26-1407.2] 27-806 Reduction of clearances. -The clearances required in section 27-805 of this article may be reduced when the exposed combustible construction is

protected with noncombustible material in accordance with the forms of protection listed in reference standard RS 14-16.

ARTICLE 9 COMBUSTION AIR

§[C26-1408.1] 27-807 Air supply. -
(a) Oil fuels. -The air supply for equipment burning fuel oil shall comply with the requirements in applicable standards in reference standard RS-14. Ventilation shall be capable of providing at least thirty-six cfm of air for each gallon of oil per hour required to fire the equipment to gross output.
(b) Gas fuels. -The air supply for equipment burning gas shall comply with the requirements of article sixteen of this subchapter.
(c) Solid Fuels. -The air supply for equipment burning solid fuels shall comply with those required for burning fuel oil based on Btu equivalent of the solid fuel.
(d) Mechanical ventilation. -If the ventilation for the purpose of combustion is supplied mechanically, the ventilating system shall be electrically interlocked with the burner so that when the burner is in operation the ventilating system shall maintain the room in which the equipment is located at a pressure not less than the outdoor atmospheric pressure.

§[C26-1408.2] 27-808 Flue dampers. -Dampers in flues shall be constructed so that they cannot completely cut off the passage of flue gases at any time. Tight-closing dampers may be installed with approved automatic draft and combustion controls.

ARTICLE 10 PIPING CONTAINING STEAM, HOT WATER OR OTHER FLUIDS

§[C26-1409.1] 27-809 Insulation and clearances. - All accessible piping in habitable and occupiable rooms carrying steam, water, or other fluids at temperatures exceeding one hundred sixty-five degrees Fahrenheit shall be insulated to prevent the temperature at the outer surface of the insulation from exceeding sixty degrees Fahrenheit above the ambient temperature. The openings for insulated piping through combustible floors, walls, partitions, ceilings and other combustible construction shall include clearance and insulation adequate to satisfy the requirements of section 27-792 of article one of this subchapter. Where accessible piping carries a fluid not exceeding two hundred fifty degrees Fahrenheit and insulation would interfere with the functioning of the system, such piping may be uninsulated provided sufficient clearance is maintained from the combustible construction so that the temperature limitation of section 27-792 of article one of this subchapter is not exceeded, and all uninsulated piping shall be provided with at least one-half inch clearance from combustible materials.

§[C26-1409.2] 27-810 Firestopping. -
For requirements governing firestopping around piping passing through floors, roofs, or fire separations, see subchapter five of this chapter.

§[C26-1409.3] 27-811 Insulation materials.-
All insulations shall be of noncombustible materials. All coverings, vapor barriers and adhesives shall have a flame spread rating no higher than twenty-five and a smoke developed rating no higher than fifty. Adhesives and mastic finishes shall be tested in sufficient bulk to produce maximum burning, and shall be tested in accordance with reference standard RS 14-11.

ARTICLE 11 RESIDENCE-TYPE WARM AIR HEATING SYSTEMS

§[C26-1410.1] 27-812 General requirements. -
Residence-type warm air heating systems shall be designed and installed in accordance with the applicable requirements of reference standard RS-14.

ARTICLE 12 UNIT HEATERS

§[C26-1411.1] 27-813 General requirements.-
All gas or oil burning unit heaters shall conform to the requirements of article five of this subchapter.

§[C26-1411.2] 27-814 Supports.- All suspended type direct-fired unit heaters shall be adequately supported by metal hangers, brackets, or other noncombustible supports with the clearances required in reference standard RS 14-15.

§[C26-1411.3] 27-815 Recessed heaters.- Recessed heaters shall be of an approved type, and shall be installed only in accordance with the conditions of approval.

§[C26-1411.4] 27-816 Fireplace heaters.- Gas-fired heaters, approved for use in fireplace recesses only, shall not be used elsewhere.

ARTICLE 13 FLOOR FURNACES

§[C26-1412.1] 27-817 Location. -Floor furnaces shall be located so as to be accessible and shall not be installed in the floor of any corridor or passageway, nor in any exit in a place of assembly.

§[C26-1412.2] 27-818 Enclosures. -Enclosures of floor furnaces shall be constructed entirely of noncombustible materials with a fire resistance rating of at least one hour and the enclosure shall be provided with adequate outdoor air in accordance with the requirements of article nine of this subchapter to ensure proper

combustion. The enclosure shall be provided with adequate means of access for servicing the furnace.

§[C26-1412.3] 27-819 Furnace supports. –
Floor furnaces shall be installed only in floors of noncombustible construction having at least a two hour fire resistance rating, except as provided for one- and two-family dwellings in section 27-823 of this article. Floor furnaces shall have the following clearances:
(a) Pit clearances. -Floor furnaces, when other than gas-fired, shall be mounted independently of the floor grille with a six inch clearance at the bottom and a twelve inch clearance at the sides except that the clearance on the control side shall be at least eighteen inches.
(b) Pit waterproofing. -When there is likelihood of water rising above the bottom clearance of the unit, the pit shall be constructed with a watertight enclosure with the sides extending at least four inches above the ground level.

§[C26-1412.4] 27-820 Pit access openings. -The access foundation wall opening or floor trap door shall be at least eighteen inches by twenty-four inches and the under floor passage to the furnace shall be at least twenty-four inches by twenty-four inches in cross-section.

§[C26-1412.5] 27-821 Duct temperature. -The outlet duct temperature of warm air heating furnaces shall not be greater than two hundred fifty degrees Fahrenheit.

§[C26-1412.6] 27-822 Pressure regulator. -
In gas-fired furnaces, a gas pressure regulator shall be provided so that the gas input does not exceed the manufacturer's rating. Pressure regulators shall comply with the requirements of article five of this subchapter.

§[C26-1412.7] 27-823 One-and two-family dwellings.-
Floor furnace enclosures shall be constructed of noncombustible materials with a fire resistance rating of at least one hour. Means shall be provided for supporting the furnace when the floor grille is removed. Clearances shall be as provided in reference standards RS 14-15 and 14-16.

ARTICLE 14 BOILERS

§[C26-1413.1] 27-824 General requirements. -The construction, installation, maintenance, and operation of boilers shall comply with the applicable requirements of reference standard RS 14-5.

ARTICLE 15 UNFIRED PRESSURE VESSELS

§[C26-1414.1] 27-825 General requirements. -The minimum clearance and fire protection requirements for unfired pressure vessels shall be the same as required for boilers designed for the same operating temperatures. The construction, maintenance, installation, and operation of unfired pressure vessels shall comply with the applicable requirements of reference standard RS 14-4.

ARTICLE 16 GAS FIRED EQUIPMENT

§[C26-1415.1] 27-826 General requirements. -The construction and installation of gas burning equipment shall comply with the applicable requirements of article five of this subchapter and reference standard RS 14-2 and RS 14-6. The installation of gas piping shall be in accordance with the provisions of subchapter sixteen of this chapter, and for the installation of chimneys and gas vents, the provisions of subchapter fifteen of this chapter.

***§27-826.01 Barbecue grilles**.- Only accepted natural gas-fired barbecues or grilles that employ an open flame for roasting or broiling and that are located in the interior of buildings, or on the exterior of buildings when against any part of an exterior wall, shall be installed. All provisions for the construction and installation of fireplaces set forth in article 19 of this subchapter shall be complied with in the construction and installation of barbecue grilles.
Local Law 80-1989.

ARTICLE 17 FUEL OIL EQUIPMENT

§[C26-1416.1] 27-827 General requirements. -For the purpose of this subchapter, fuel oil shall mean hydrocarbon oils as classified in reference standard RS 14-3 and RS 14-12 and shall have a flashpoint not lower than one hundred degrees Fahrenheit when tested in accordance with reference standards RS 14-13 and marketed under the following commercial grades: range oil or no.1 fuel oil; diesel oil or no. 2 fuel oil; no. 4 fuel oil; no. 5 fuel oil; no. 6 fuel oil. Except as provided in section 27-4056 of this title the use of crankcase refuse oil as fuel oil is prohibited. These requirements shall not apply to (1) the use and installation of portable burners not requiring a connection to a flue where such burners are of the type commonly used for household purposes such as oil stoves, oil heaters and oil lamps equipped with a woven wick; (2) portable apparatus such as blow torches, soldering pots, tar heaters, snow melters, etc.; (3) storage tanks for oils used in industrial process such as cracking, distilling, manufacture of gas, or other similar processes. For the requirements governing the storage of such oils see chapter four of this title.

§[C26-1416.2] 27-828 Fuel oil storage equipment. -
(a) General requirements for fuel oil tanks. -All tanks shall be designed and installed in accordance with the provisions for steel work in subchapter ten of this chapter or in accordance with the provisions of this subchapter.

(1) All fuel oil storage tanks shall be built of steel plates or sheets, made by the open hearth or basic oxygen process. Such steel shall be free from physical imperfections, and shall be new, in good condition, and free from rust.
(2) Tanks shall be welded, riveted and caulked, or riveted and welded. Flanges or other pipe connections may be welded. All caulking shall be placed with round nose tools and without damages to the plates. Filler of any kind between plates shall be prohibited.
(3) Tanks to be buried shall be cleaned and then coated on the outside with two coats of red lead, or equivalent. They shall be further protected by a coating of hot tar, asphalt, or equivalent rust resistive material, applied at the work site. Tanks installed inside buildings above ground shall be coated with one coat of red lead, or equivalent.
(4) All buried storage tanks shall be constructed of at least one-quarter inch thick metal and shall be designed to withstand any external loads to which the tank may be subjected.
(5) At the time of installation all storage tanks shall bear a permanently-fixed plate, spot welded or equivalent, bearing the name of the tank manufacturer, the gage [*sic*] of the material, and capacity of the tank. Shop fabricated storage tanks shall be installed without structural alteration.
(6) All openings shall be through the top of the storage tank, except that storage tanks of two hundred seventy five gallon capacity or less, located above ground but below the lowest story, may be provided with a three-quarter inch opening for gravity discharge and a one inch opening in the bottom for cleaning and protection against corrosion.
(7) Tanks for no. 1, no. 2, no. 3 and no. 4 commercial [*sic*] grade oils need not have manholes. However, if manholes are used for such oils, the manhole covers shall be bolted and made gastight. Tanks for no. 5 and no. 6 commercial grade oils shall have manhole covers bolted or otherwise secured to the tanks and kept hydrostatically tight at all times.
(8) Tanks outside of buildings shall be electrically grounded in accordance with the requirements for equipment grounding of the electrical code of the city of New York.
(9) Tanks shall be located at least seven feet measured in the most direct manner, from any source of exposed flame unless protected as provided in paragraph two or three of subdivision (a) of section 27-829 of this article and at least two feet from any surface where the temperature exceeds one hundred sixty-five degrees Fahrenheit.

(b) Construction requirements, cylindrical tanks, except vertical tanks above ground outside of buildings, more than two hundred seventy-five gallon capacity. -
(1) The thickness of cylindrical tanks, including oval, elongated oval, or round [*sic*] tanks of more than two hundred seventy-five gallon capacity shall be subject to the following requirements:
a. Tanks thirty-six inches in diameter and less-at least 1/4 in. shell and 1/4 in. heads.
b. Tanks thirty-seven to seventy-two inches in diameter-at least 1/4 in. shell and 5/16 in. heads.
c. Tanks seventy-three to one hundred twenty inches in diameter-at least 5/16 in. shell and 3/8 in. heads.
d. Tanks over one hundred twenty inches in diameter-shall be of at least 3/8 in. steel and shall be stiffened by angle rings or equi3valent members so as to retain their cylindrical form.
(2) Dished heads for such tanks shall have a curvature the radius of which is not greater than the diameter of the tank. Dished heads shall be formed with an adequate cylindrical extension rim to provide a welding or riveting surface. If flat heads are used, they shall be braced in the same manner as described for the bracing of flat sides of rectangular tanks.
(3) Riveting in single lap seams shall not exceed a pitch as follows:
a. Shell 1/4 in. thick-5/8 in. diameter rivets, 2 1/4 in. pitch.
b. Shell 5/16 in. thick-5/8 in. diameter rivets, 2 3/8 in. pitch.
c. Shell 3/8 in. thick-3/4 in. in diameter rivets, 2 1/2 in. pitch.

(c) Rectangular tanks, of more than two hundred seventy-five gallon capacity. -
(1) Plates for rectangular tanks of more than two hundred seventy-five gallon capacity shall be at least 5/16 in. thick.
(2) Corners may be made up by bending the plates or by using angles.
(3) Minimum rivet diameter in seams shall be 5/8 in., and rivets shall be spaced not more than 2 1/4 in. center-to-center.
(4) All flat surfaces of rectangular tanks shall be braced by structural members or rods.
(5) When structural members are used, the rivet pitch shall not exceed six inches.
(6) All structural members shall be designed in accordance with the requirements of subchapter ten of this chapter.
(7) Connections between bracing members and the sides of the tank shall be designed so that the connection will not fail before the member will fail.

(d) All tanks except vertical tanks above ground, two hundred seventy-five gallon or less capacity. -
(1) All oil storage tanks of two hundred seventy-five gallon capacity or less that are not buried shall have a minimum thickness of shell and head plates of no. 10 manufacturer's standard gage [*sic*] steel plate. Storage tanks of sixty gallon capacity or less shall be similarly constructed but need not be thicker than No. 14 manufacturer's standard gage [*sic*].

(e) Vertical storage tanks over one thousand gallon capacity located outside of building above ground.-
(1) Vertical storage tanks located outside of buildings above ground shall be built of steel plates of the quality required for cylindrical tanks.
(2) The minimum thickness of shell or bottom plates shall be one-quarter of an inch, and the minimum

thickness of roof plates one-eighth of an inch. The thickness of shell plates shall be determined in accordance with the following formula:

$$t = \frac{P \times R \times F}{T \times E}$$

where: t = thickness of shell plate in inches.
P = head pressure at bottom of ring under consideration in psi.
R = radius of shell, in inches.
F = factor of safety (taken as five).
T = tensile strength of plate, in psi as verified by mill test certificate.
E = efficiency of vertical joint in ring under consideration. E shall in no case be taken greater than one.

(3) Roof plates shall have single lap-riveted or welded watertight seams, and the roof shall be built to shed water. Bottom plates shall have single lap riveted or welded seams. Shell plate seams shall be designed to develop the full strength of the plate.

(f) Storage containers of six gallons or less. -

(1) Oil storage containers used with burners or oil burning heaters and having a capacity of six gallons or less used in connection with burners or oil-burning heaters shall be designed so as to withstand a hydrostatic pressure test of at least five psi without permanent deformation, rupture, or leakage, and shall be approved.

(2) All storage containers used with burners or oil burning heaters shall be installed with rigid metal fasteners for wall, floor, or stand type installations, and shall be protected against mechanical damage.

(3) Portable containers may be filled by a pump mounted on a storage tank, provided that the pump is approved.

§[C26-1416.3] 27-829 Location of tanks. -

(a) Inside of buildings, above ground on the lowest floor.-

(1) TANK CAPACITY OF FIVE HUNDRED FIFTY GALLONS OR LESS.- Storage tanks having a capacity of five hundred fifty gallons or less may be installed above ground on the lowest floor of a building, provided that such tanks are mounted on adequate noncombustible supports, with the tank anchored thereto. No more than five hundred fifty gallons of total storage capacity may be connected to one burner or may be installed without the protection provided in paragraph two or three of this subdivision.

(2) TANK CAPACITY MORE THAN FIVE HUNDRED FIFTY GALLONS BUT LESS THAN ELEVEN HUNDRED GALLONS.- Storage tanks having a capacity of more than five hundred fifty gallons but less than eleven hundred gallons may be installed above ground on the lowest floor of a building, provided that all portions of such tanks above the floor are completely enclosed with noncombustible construction having at least a two hour fire resistance rating. Weep holes one inch in diameter shall be provided at least every three feet along the bottom of the enclosure unless at least fifteen inches of clearance, together with access door, is provided between the tank and the enclosure.

(3) TANK CAPACITY ELEVEN HUNDRED GALLONS OR MORE.- Storage tanks having a capacity of eleven hundred gallons or more may be installed above ground on the lowest floor of a building, provided that all portions of such tanks above the floor are completely enclosed with noncombustible construction having at least a three hour resistance rating. At least fifteen inches clearance shall be provided over the tanks and on all sides between the tanks and the enclosure. A noncombustible access door, constructed so as to preserve the integrity of the fire resistive enclosure, shall be installed in the enclosure above the point where the capacity of the enclosure below the door sill would be equal to the capacity of the largest tank installed. When the longest inside dimension of the enclosure exceeds thirty-five feet, access doors shall be installed at intervals not exceeding twelve feet. Columns, pipes, or similar obstructions may project into the required fifteen inches of space within the enclosure, provided that access door or doors are so arranged that all portions of the enclosure are accessible for servicing.

(4) MAXIMUM TANK SIZE.- The capacity of individual storage tanks in no case shall exceed twenty thousand gallons.

(b) Inside of building above the lowest floor. -

(1) Fuel oil storage tanks having a capacity of two hundred seventy-five gallons or less may be installed inside of buildings above the lowest story when provided with a four inch thick concrete or masonry curb, or with a metal pan of gage [*sic*] equal to the gage [*sic*] of the tank, completely surrounding the tank and of sufficient height to contain two times the capacity of the tank. The number of such oil storage tanks shall be limited to one per story.

(2) Storage tanks having a capacity of two hundred seventy-five gallons or less, installed above the lowest floor inside a building shall be filled by means of a transfer pump supplied from a primary storage tank located and installed as otherwise required by this subchapter. A separate transfer pump and piping circuit shall be provided for each storage tank installed above the lowest floor. No intermediate pumping stations shall be provided between the storage tank and the transfer pump. Appropriate devices shall be provided for the automatic and manual starting and stopping of the transfer pumps so as to prevent the overflow of oil from these storage tanks.

(3) A float switch shall be provided with the curb or pan around the storage tank and shall be arranged so as to sound an alarm and stop the transfer pump in case of failure of the tank or the control in the tank. The operation of the float switch shall be tested at least once each week. An alarm bell shall be located in the same

room with the tank and a visual and audible alarm shall be located in a maintenance office. The enclosing and sealing of switches and wiring shall conform to the requirements of the electrical code of the city of New York for devices located in an atmosphere of flammable vapors.

(c) Inside of buildings, below ground. -

(1) Storage tanks having a capacity greater than two hundred seventy-five gallons may be buried inside a building provided that the top of the tank is at least two feet below floor level. In lieu of two feet of earth over the tank, the tank may be covered by concrete flooring having the same thickness as the basement floor, but not less than four inch concrete meeting the requirement of subchapter ten of this chapter and reinforced with two inch by two inch mesh of at least no. 20 U.S. standard gage [*sic*] steel wire. Tanks shall be placed in firm soil and shall be surrounded by clean sand or well-tamped earth, free from ashes and other corrosive substances, and free from stones that will not pass through a one inch mesh. When necessary to prevent floating, tanks shall be securely anchored.

(2) No tank shall be buried within three feet of any foundation wall or footing.

(d) Outside of building, below ground. -

(1) Storage tanks located outside of buildings and below ground shall be buried with the top of the tank at least two feet below ground. Tanks shall be placed in firm soil and shall be surrounded by clean sand or well-tamped earth, free from ashes or other corrosive substance, and free from stones that will not pass a one inch mesh. When necessary to prevent floating, tanks shall be securely anchored.

(2) No tank shall be buried within three feet of any foundation wall or footing.

(e) Outside of buildings, above ground. -

(1) Storage tanks of a capacity greater than two hundred seventy-five gallons located outside of buildings above ground shall be not less than one and one-quarter (1 1/4) tank diameters and in no case less than ten feet from the line of adjoining property, the nearest building or adjacent tank. The minimum clearance between individual tanks located outside of buildings above ground and the line of adjoining property which may be built upon shall be fixed by the following formula:

$$M.C. = 10 + 4 \left(\frac{G-275}{5000} \right)$$

where:

M.C. = minimum clearance from nearest surface of tank to adjoining property, in feet.

G = capacity of tank, in gallons.

The maximum allowable capacity of fuel oil storage tanks located outside of buildings above ground shall be one hundred thousand gallons.

(2) Tanks shall be located so as not to obstruct or interfere with any means of egress.

(3) Each storage tank shall be protected by an embankment or dike. Such protection shall have a capacity at least one and one-half times the capacity of the tank so surrounded and shall be at least four feet high, but in no case shall the protection be higher than one-quarter the height of the tank when the height of the tank exceeds sixteen feet. Embankments or dikes shall be made of earthwork with clay core, of masonry, of reinforced concrete or of steel. Earth work embankments shall be firmly and compactly built of good earth free from stones, vegetable matter, etc., and shall have a flat section of at least three feet at the top and a slope of at least one and one-half to two on all sides. Concrete, masonry or steel dikes shall be designed so as to conform safely all of the oil in the tank so surrounded. Embankments or dikes shall be continuous and unpierced, and the outside toe shall be located at least five feet inside of the property line, and no less than five feet from a driveway or parking area.

(f) Tanks located along line of subways.-

(1) No buried tank shall be placed within twenty feet of the outside line of a subway wall. Where an above ground tank within a building is located within the outer lines of the subway, or within twenty feet of the outside line of the subway wall, such tank shall be placed within a welded steel oiltight pan of not less than no. 18 manufacturer's standard gage [*sic*] metal suitably reinforced and of capacity to contain the contents of the tank.

(2) For the purpose of the foregoing requirement, a subway shall be deemed to include any subsurface railroad or rapid transit roadbed.

§[C26-1416.4] 27-830 Piping.-

(a) Installation of piping and tubing.-

(1) Exposed piping shall be protected against mechanical damage and shall be adequately supported with rigid metal fasteners or hangers. All pipes connected to buried tanks, except test well piping, shall be provided with double swing joints at the tank.

(2) Only new wrought iron, steel or bass pipe, or type K or heavier copper tubing, or aluminum alloy tubing, properly identified, may be used. Metal tubing when used for conveying oil shall be adequately protected. Such tubing may be installed at the burner without protection. Drawn tubing when used in domestic installations shall be of at least 3/8 in. inside diameter up to the shut-off valve at the burner. Soldered connections shall be prohibited.

(3) Overflow pipes, where installed, shall not be smaller in size than the supply pipe.

(b) Relief valves.-

(1) Where a shut-off valve is installed in the discharge line from an oil pump, a relief valve shall be installed in the discharge line between the pump and the first shut-off valve.

(2) A relief or pressure regulating valve shall be provided in the oil piping system on the heater side of the shut-off valves.

(3) Relief valves shall be set to discharge at not more than one and one-half times the maximum working pressure of the system. The discharge from relief valves shall be returned to the storage tank or to the supply line. There shall be no shut-off valve in the line of relief.

(c) Fuel oil heaters.-Fuel oil heaters shall not be installed within the steam or water space of a boiler. Fuel oil heaters and the connecting piping shall be arranged to prevent oil leakage from being transmitted to the boiler. This may be accomplished by any of the following methods:

(1) By discarding the condensate from the heaters.

(2) By using approved double tube or other approved heaters.
(3) By means of a secondary hot water or steam heating system where the water or steam from the boiler has no direct contact with the oil heater.
(4) By a sight tank arrangement for collecting and inspecting the condensate which is provided with a pump controlled by a hand switch for returning the condensate to the normal return system.
(5) By such other method as may be permitted by the commissioner.

(d) Vent pipe.-

(1) A vent pipe of iron or steel, without trap, draining to the tank, shall be provided for each storage tank. The lower end of the vent pipe shall not extend more than one inch through the top of the storage tank. Cross-connection between a vent pipe and fill pipe is prohibited.
(2) Where a battery of storage tanks designed to hold the same grade of oil is installed, vent pipes may be run into a main header.
(3) Vents shall be at least one and one-quarter inches in diameter for storage tanks not exceeding eleven hundred gallons capacity and at least two inches in diameter for storage tanks of eleven hundred gallons or more except that vents for storage tanks of sixty gallon capacity or less shall be at least one-half inch in diameter. Vents for tanks inside of buildings above the lowest floor shall be run into the primary storage tank vent.
(4) Vent pipes shall be provided with an approved weatherproof hood having a free area of at least the pipe size area. Vent pipes shall terminate outside the building in a nonhazardous location, at least two feet from any building opening and less than two feet nor more than twelve feet above the fill pipe terminal, unless otherwise permitted by the commissioner. If the vent pipe terminal is not visible from the fill pipe terminal location, a one inch tell-tale line shall be connected to the tank and shall parallel the fill pipe and terminate at the fill pipe terminal with an unthreaded end. Such tell-tale lines shall be provided with a check valve set to prevent flow of surface water to the storage tank.

(e) Fill pipes.-

(1) Fill pipes shall terminate outside the buildings, with the fill pipe terminal located at or above grade, at least two feet from any building opening and five feet from any subway grating at or below the level of the fill pipe terminal. No fill pipe shall be less than two inches in diameter, and no fill pipe for no. 6 oil shall be less than three inches [*sic*] in diameter. Where no. 6 oil is used, the fill pipe terminal shall be located within three feet of the curb, unless otherwise required by the department of transportation or the transit authority. Where there are facilities for the delivery tank truck to drive onto the premises, the fill terminal may be located elsewhere than at the curb, provided that the location complies with the other requirements of this subchapter.
(2) Each storage tank shall be provided with a separate fill pipe, except that where a battery of tanks is installed containing the same grade of oil, a common fill and header pipe may be installed.
(3) Where the top of the storage tank is above the fill pipe terminal, the fill pipe shall be connected to the top of the tank and provided with a shut-off valve and swing check valve both of which shall be located at the fill pipe terminal. However, the shut-off and check valves may be installed in an accessible location inside the building at or below the level of the fill pipe terminal.
(4) All fill pipe terminals shall be of an approved type, and shall be provided with lugs for embedding in concrete. In lieu of lugs, a set screw or threads to fasten the terminal to the fill pipe may be used. The outer flange of the fill pipe terminal or the seal cap shall be permanently marked "fuel oil." The fill pipe terminal shall be threaded or provided with other equivalent means to receive the seal cap. The seal cap shall be suitably slotted for receiving an opening wrench, and an oilproof gasket inserted in a groove in the fill pipe terminal shall be provided so as to make the seal cap leakproof. A strainer shall not be required but, if used, shall be of at least one-eighth inch mesh. Where a storage system for volatile flammable oil and a storage system for fuel oil are to be used in the same premises, the terminal of the fuel oil pipe shall be provided with a left-handed thread and the fill pipe fitting shall be of a different size than that required for the fill pipes to the tanks containing the volatile flammable oil.

****(f) Piping from transfer pump to equipment or to storage tanks above the lowest floor.-**

(1) The piping from a transfer pump to equipment at levels above the lowest floor or to storage tanks at levels above the lowest floor in buildings, the return piping, and vent piping shall comply with the applicable provisions of subdivisions (a) and (d) of this section and shall be enclosed in a shaft constructed of four inch concrete or masonry having a four inch clearance from all pipe or pipe covering, except that no such enclosures shall be required within the room containing the pump, tank, or equipment where such room is itself enclosed with construction and materials having at least a two hour fire resistance rating. Provision shall be made for expansion in piping without the use of expansion joints.
(2) Where it is necessary to make horizontal offsets in the supply piping and pipe shafts such piping shall be enclosed in a sleeve of other piping of at least no. 10 U.S. standard gage steel, two sizes larger and arranged to drain into the shaft. Horizontal piping offsets shall be further enclosed in construction having a two hour fire resistance rating, except that no such enclosure or pipe sleeve shall be required within the room containing the pump, tank, or equipment where such room is itself enclosed with construction and materials having at *lease a two hour fire resistance rating.

as enacted but "least" probably intended.

(3) A drain pipe shall be installed at the base of shafts enclosing the supply and overflow piping. The pipe shall lead to an open sight drain or to an open sump.
(4) Oil lines for equipment or tanks shall be steel pipe ASTM A-53 or A-106, grade B seamless, schedule 40 with welded connections up to the oil tank or equipment, except that fittings at the tank or equipment, shut off valves and other fuel oil flow and control devices may be screwed or flanged.
(5) Pipe shafts shall not be penetrated by or contain other piping or ducts.

(6) The piping shall be located and secured from movement so as to prevent undue stress on the piping and to isolate the piping from vibrations from any equipment.
(7) Pipe connections to the main header (supply or return) shall be made from the top of the header, except for systems described in paragraph (11) of this subdivision.
(8) Required air vents and vacuum breakers shall be designed for their required use.
(9) All air vents and vacuum breakers shall be hard piped to a curb or pan as provided for in subdivision (b) of section 27-829.
(10) In systems with equipment above the lowest floor where such equipment is designed to operate utilizing fuel stored above the lowest floor, piping diameters shall not exceed four inches. However, where an applicant demonstrates by the inclusion of calculations on the plans that a greater diameter is necessary to ensure the proper flow for the functioning of the system, such greater diameter may be permitted. All oil stored above the lowest floor shall be in tanks complying with subdivision (b) of section 27-829 of this code; piping shall not be used for fuel storage purposes.
(11) In systems with equipment above the lowest floor where such equipment is designed to operate utilizing fuel pumped as needed from the lowest floor and without utilizing fuel oil stored above the lowest floor, piping diameters throughout such systems shall not exceed the design flow (three times the maximum firing rate as calculated by the engineer or architect). However, piping diameters within rooms containing such equipment may exceed the calculated design flow pipe size to provide limited reservoir storage to prime equipment, provided such reservoir storage is counted toward the maximum two hundred seventy-five gallons of oil storage per story as provided for in subdivision b of section 27-829 of this code.
(g) Heating coils in storage tanks. -The heating of oil in storage tanks shall be by means of coils using low pressure hot water or steam, or by means of electric heaters approved for use in oil storage tanks.
(h) Valves and devices to control the flow of oil. -
(1) Where more than one storage tank is connected to a common supply line, a shut-off valve shall be provided in the supply line at each tank. Where more than one burner is connected to a supply line a shut-off valve shall be provided at each burner. Where a single tank and a single burner are installed, a shut-off valve shall be required in the supply line at the tank and another at the burner. Valves shall be brass or equivalent in corrosion and fire resistance, shall provide tight shut-off, and shall be rated at one hundred twenty-five psi or greater as required by the pressure in the system.
(2) Where a storage tank is located so that the top of the tank is above the oil inlet to the burner or to the fuel pump, and the storage tank capacity is greater than two hundred seventy-five gallons, the supply line to the burner shall be provided with an approved anti-syphon device. The device shall be located at the highest point in the supply line. Where an approved foot valve is used in the tank and the tank is constructed with a manhole, an anti-syphon device shall not be required. No anti-syphon device shall be required where no. 6 fuel oil is used.
(3) The pressure in oil lines to burners located above the lowest floor of a building shall not be more than is required to circulate oil to and from the burners, and all parts of the oil system shall be capable of withstanding the maximum working pressure in that part of the system.
(4) A remote control shall be provided to stop the flow of oil to any burner. Such control shall be located outside the entrance to the room in which the burner is located and as close to such entrance as practicable, except that when an outside location is impracticable, such control may be located immediately inside the room in which the burner is located, provided such location is accessible at all times. All such controls shall be permanently labeled "remote control for oil burner." On storage tanks of sixty gallon or less capacity used with manually operated burners, such remote control may be installed in the supply lines between tank and burner.
(5) Pressure in a storage tank for the purpose of discharging oil shall be prohibited.
(6) In systems where either steam or air is used for atomizing the oil, the oil and the atomizing supply shall be interlocked so that where the supply of either is interrupted, the supply of the other will be immediately cut off.
(i) Oil level indicating devices and test wells. -
(1) All tanks located inside buildings shall be provided with an oil level indicating device. Test wells shall be prohibited in tanks located inside of buildings. Unused tank openings shall be permanently sealed to prevent the removal of plugs or cover.
(2) Oil level indicating devices shall be designed and constructed of substantial materials so that can be no leakage of oil or oil vapor.
(3) Test wells in storage tanks located outside of buildings shall be capped oil tight and kept closed when not in use.
*****Local Law 26-2004.***

§[C26-1416.5] 27-831 Controls.- With each automatic burner a set of safety controls of the electric, pneumatic, hydraulic, or mechanical type shall be installed and maintained in good working order. The proper controls for each burner shall be those that have been tested and accepted in accordance with the requirements of article five of this subchapter. The controls shall provide the following functions:
(a) Oil temperature control (no. 5 and no. 6 oil).
(b) Ignition.
(c) Stack or combustion control.
(d) High temperature or pressure control.

§[C26-1416.6] 27-832 Chimneys.- No oil burner shall be installed in any boiler, heater, range, or stove unless each boiler, heater, range, or stove is connected to a chimney complying with subchapter ten of this chapter, except for portable burners as prescribed in section 27-827 of this article.

ARTICLE 18 REFUSE DISPOSAL SYSTEMS

§[C26-1417.1] 27-833 General. -All incinerators and other refuse disposal systems in buildings shall be constructed, installed and altered in accordance with the

requirements of this subchapter**.**

§[C26-1417.2] 27-834 Compliance.- All new and existing refuse disposal systems shall be installed, altered and maintained in buildings in conformity with the applicable provisions of the administrative code, the air pollution control code and as follows:
(a) Charging chutes for refuse disposal system shall comply with applicable provisions of subchapter fifteen of this chapter.

§[C26-1417.3] 27-835 Permitted types of incinerators.- When permitted by sections 24-118 and 24-119 of title twenty-four of the administrative code, incinerators shall conform to the following:
(a) Semiautomatic incinerators.- Semiautomatic incinerators shall be limited to capacities not exceeding one million seven hundred thousand Btu/hr. in other buildings. Semiautomatic incinerators may have manually operated grates, but shall have automatically operated flue gates, gas or oil burners with temperature controls, overfire air fans and nozzle system[s]*, emission control devices, and clock controlled cycles.
(b) Automatic incinerators.- Automatic incinerators shall be required for capacities exceeding one million seven hundred thousand Btu/hr. They are optional for smaller capacities. Automatic incinerators shall have power operated grates, and automatically operated flue gates, gas or oil burners with temperature controls, overfire and underfire air fans and nozzle system, emission control devices and clock controlled cycles.
Copy in brackets not enacted but probably intended.

§[C26-1417.4] 27-836 Refuse collection rooms.-
A refuse collection room shall be provided for refuse reduction systems which utilize methods other than burning. Such rooms shall comply with the requirements of section 27-837 of this article.
a. Existing refuse rooms and incinerators rooms which have been approved for such use, may be retained as approved.
b. Existing incinerator combustion chambers may be used in whole or in part as refuse collection rooms provided the grates are removed and provided they comply with the provisions of section 27-837 of this article.
c. Floors of refuse collection rooms shall be constructed of concrete and shall be sloped to a floor drain within the room, connected to the house drain. A hose connection shall be provided within the room.
d. A hopper and cut-off door shall be provided at the bottom of the refuse chute. Where compacting equipment is used, it shall be located entirely within the enclosure of the refuse collection room except that motors, pumps, and controls may be installed in adjacent rooms.
e. Compacting equipment shall meet the criteria of the department of environmental protection and be approved. Where such equipment is installed so that the refuse flows directly into it, the compacting equipment may be used in place of the hopper and cut-off door. Compacting equipment shall be arranged to operate automatically when the level of refuse is not more than three feet below the lowest hopper door.

§[C26-1417.5] 27-837 Incinerator rooms.-
Incinerators and refuse collecting bins and spaces shall be located in rooms or compartments used for no other purpose. Such rooms or compartments shall be separated from all other occupancies by noncombustible construction having a fire resistance of at least two hours with self-closing opening protectives. Refuse collection bins and spaces shall be sprinklered in accordance with the construction provisions of subchapter seventeen of this chapter.

§[C26-1417.6] 27-838 Ventilation.-Fixed ventilation for combustion air to the incinerator room shall be provided by a louvered opening in a wall to outdoor air. When ducts are used, they shall be sized and installed so as to provide the amount of air required for combustion, taking into consideration head loss. Fans may be installed to deliver air to the incinerator room, provided they are in operation whenever the incinerator is in use. Louvers, ducts, and fans shall be sized to deliver at least two and one-half cfm of air for each pound per hour of refuse while burning is taking place. All duct work shall be installed in accordance with the requirements of subchapter thirteen of this chapter.

§[C26-1417.7] 27-839 Draft control.-If a manual damper or automatic draft controller, is provided in the incinerator flue, it shall be capable of closing off not more than ninety-five percent of the flue area, and the damper or controller shall be made of such materials and in such a manner so as to prevent warping, binding, cracking, corrosion, and distortion when exposed to operating temperatures. If an automatic draft controller is used, means shall be provided for temporary manual operation.

§[C26-1417.8] 27-840 Charging chutes and exhaust flues.-
All incinerators shall be constructed with a flue within a chimney to exhaust the products of combustion and a refuse charging chute which shall be separate from the flue. Refuse charging chutes shall not discharge directly into incinerators, except in buildings classified in residential occupancy group J and in accordance with the requirements of this subchapter and subchapter fifteen of this chapter.
(a) Flues for existing incinerators and existing refuse chutes may be used as refuse charging chutes provided they are in good condition and comply with the requirements of subchapter fifteen of this chapter.

§[C26-1417.9] 27-841 Charging gates.-Charging gates, when provided, shall be power operated. Gates and guide rails shall be of such materials and construction so as to withstand a temperature of two thousand degrees Fahrenheit, without distortion, warping, binding, cracking, or corrosion, and also to withstand impact by heavy falling objects.

§[C26-1417.10] 27-842 Auxiliary heat. -Burners or other sources of heat shall be provided for all incinerators. Such heat sources shall be capable of maintaining a temperature of at least fifteen hundred degrees Fahrenheit [*sic*] at the discharge from the combustion chamber, and shall be equipped with safety devices to shut off the fuel in cases of ignition failure, flame failure, or insufficient draft.

§[C26-1417.11] 27-843 Construction of incinerators.- Incinerators shall be constructed so as to be gas tight and shall be lined or protected with heat resistive materials suitable for the services required, as follows:

(a) Masonry incinerators.- When the combined hearth and grate area is twenty square feet or less, or the number of habitable rooms served is one hundred or less, combustion chambers, separation chambers, and connecting gas passages shall be constructed of eight inch common brick thick and lined with four and one-half inch of refractory material with an intervening air space of one inch. When the combined hearth and grate area is more than twenty square feet, or the number of habitable rooms served is more than one hundred, combustion chambers, separation chambers, and connecting gas passages shall be constructed of common brick eight inches thick and lined with nine inches of refractory material with an intervening air space of one inch.

(1) TIES. -Noncorroding metal ties shall be used at least every fifth course of common-brick. Structural steel angles, straps, and tiebacks shall be installed on all masonry incinerators having more than one hundred twenty-five cubic feet of combustion chamber volume.

(2) INTERIOR CONSTRUCTION. -Interior walls, curtain walls, bridge walls, or baffles shall, in every case, be of refractory brick, at least nine inches thick.

(3) ARCHES. -Sprung arches may be used if the span is less than four feet. [*sic*] Flat suspended type arches shall have a minimum of five inches of refractory material between the furnace heat and the hangers. Flat suspended arches shall have an insulated block roof of at least two and one-half inches thick.

(4) ISOLATION. -No structural supports for the vertical building flues or other parts of the building shall rest upon the incinerator; nor shall any metal guides, hangers, or structural steel parts of the incinerator be exposed to direct heat of combustion.

(5) THERMAL BLOCK INSULATION.- High temperature block insulation shall be at least equal to type 3 specified in reference standard RS 14-10.

(6) REFRACTORY.- Refractory material shall be firebrick or hydraulic setting castable refractory.

a. Firebrick.- Firebrick shall be high duty, spall resistant and conform to type A reference standard RS 14-7.

b. Castable refractories.- Castable refractories shall conform to reference standard RS 14-8 (Class F).

c. Mortar.- Mortar for firebrick shall be air setting high temperature cement conforming to reference standard RS 14-14.

(b) Steel-cased incinerators. -In lieu of the eight inch common brick outer wall and one inch air space required in subdivision (a) of this section, the outside enclosure of incinerators may be of no. 12 manufacturer's standard gage [*sic*] steel casing that is welded, riveted, or bolted to be gastight, with at least two thicknesses of two and one-half inches high high-temperature block insulation applied with staggered joints.

(c) Other constructions. -Other forms of incinerator construction, equivalent in terms of structural strength, insulating value, and temperature and erosion resistance, may be used, subject to approval by the commissioner.

§[C26-1417.12] 27-844 Construction of chimneys and charging chutes.- For requirements governing the construction of chimneys and charging chutes, see article four of subchapter fifteen of this chapter.

§[C26-1417.14] 27-845 Cleanouts.- Openings shall be provided so that all parts of the incinerator can be cleaned, including the ash pit, the combustion chamber, the passes of separation chambers, and the incinerator flue. Cleanouts shall be closed by tight fitting doors or covers, securely latched or otherwise held in a closed position. Ash pit and combustion chamber closures and frames shall be of cast iron or equivalent, with the frames securely attached to the incinerator.

§[C26-1417.15] 27-846 Accessibility. -Sufficient space shall be provided around the incinerator and its appurtenances to facilitate cleaning, repair, and servicing. Clearance shall be provided to allow the cleanout doors to be completely opened so that all parts of the combustion chamber, ash pit, separation chambers, etc., may be reached and so implements used for this purpose can be freely manipulated. All dampers, gates, burners, valves, levers, etc., shall be accessible for repair and adjustment or replacement. No construction shall be located closer than sixteen inches to any part of an incinerator, except that noncombustible structural members two feet wide or less parallel to the incinerator, may be located as close as six inches to the incinerator, provided such members do not reduce accessibility to any moving parts of the incinerator.

§[C26-1417.16] 27-847 Cabinets and control wiring.- All control equipment shall be installed in dustproof, noncombustible cabinets. Such cabinets shall not be mounted on the incinerator. Conduits carrying control wiring for the incinerator shall not be fastened to the incinerator. All electrical work shall comply with the electrical code of the city of New York.

§[C26-1417.17] 27-848 Posting. -

(a) Operating and maintenance instructions shall be permanently and conspicuously mounted under transparent protective covers in the incinerator room, together with the equipment use permit. The instructions shall include complete procedures for operating and maintaining fuel burners, dampers, and other devices, and shall state quantities and kinds of materials that may be burned.

(b) On every door that opens into a space in which a service opening into a refuse chute is located, or on the wall directly over the service opening into the chute, the following sign shall be permanently and conspicuously posted:

"THROWING LIGHTED MATCHES, CIGARS OR CIGARETTES CARPET SWEEPINGS, NAPHTHALENE, CAMPHOR BALLS OR FLAKES, FLOOR SCRAPINGS, OIL SOAKED RAGS, EMPTY PAINT CANS, AEROSOL CONTAINERS, OR ANY OTHER FLAMMABLE OR HIGHLY COMBUSTIBLE OR EXPLOSIVE SUBSTANCE INTO THIS CHUTE IS UNLAWFUL AND SUBJECTS THE OFFENDER TO A PENALTY."

Such signs shall be designed as follows:

(1) Signs on doors leading to the service openings and on walls over service openings shall be at least eight inches wide and three inches high, with lettering at least one-quarter inch high. The signs shall be located on the hall side approximately five feet above the floor.

(2) The lettering of the signs shall be of bold type, and shall be properly spaced to provide good legibility. The lettering and the background shall be of contrasting colors.

(3) Signs shall be durable and shall be securely attached to the door or wall.

(4) Sufficient lighting shall be provided so that the signs are easily readable at all times.

*ARTICLE 19 SOLID FUEL FIREPLACES, FIREPLACE STOVES AND ROOM HEATERS

Local Law 80-1989.

§27-848.01 General.- The construction, installation, alteration and operation of all fireplaces, fireplace stoves and room heaters used for space heating shall be subject to the provisions of this article. This article shall not be construed to apply to a central heater with hot air distribution, a central boiler with either hot water or steam heat distribution or a water tank, water heaters, furnaces or cooking stoves.

§27-848.02 Reference standards.- The applicable reference standards shall be as follows:

(a) Fireplaces and wood burning appliances. Reference standard RS 14-18.

(b) Factory-built fireplaces. Reference standard RS 14-19.

(c) Fireplace stoves. Reference standard RS 14-20.

(d) Room heaters. Reference standard RS 14-21.

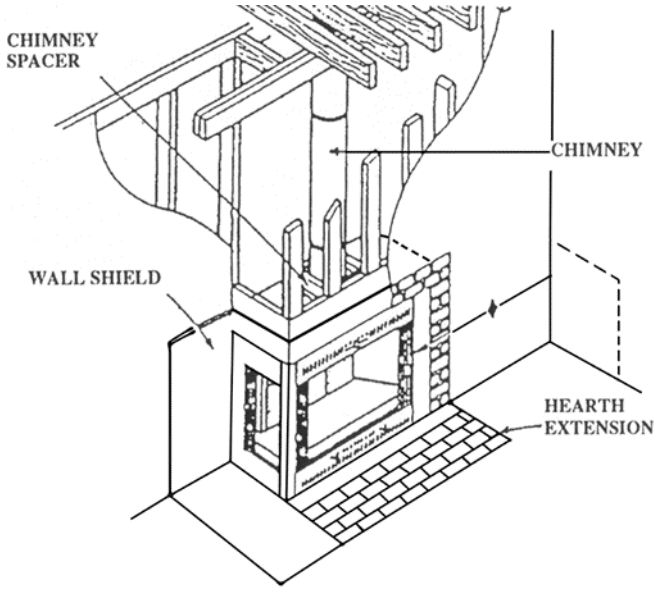
§27-848.03 Definitions. -As used in this article, the following terms shall have the following meaning:

Accessories, factory-built. Such devices as fireplace heater inserts, heat exchangers circulating air or water or other devices which may alter the combustion or heating characteristics of the fireplace.

Appliance. A device which utilizes fuel or other forms of energy to produce light, heat, power, refrigeration or air conditioning. This definition shall also include wood burning appliances and vented decorative appliances.

Fireplace, factory-built. A fireplace composed of factory-built components assembled in accordance with the terms of the listing and acceptance to form the completed fireplace and provided with a chimney complying with subchapter fifteen of this chapter (see figure 14-1).

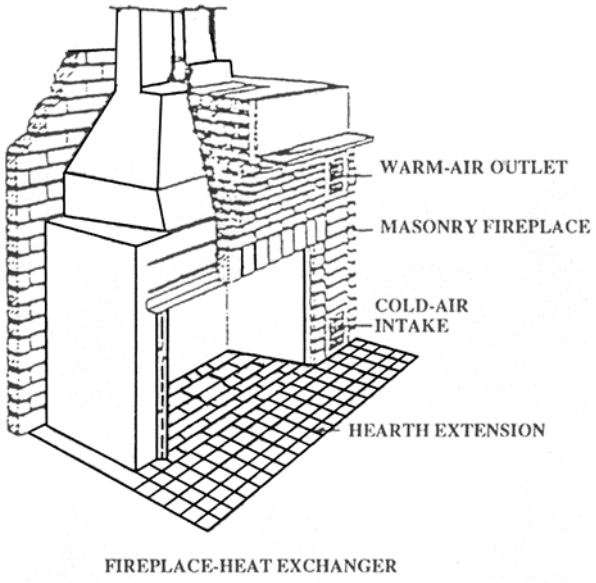
Fireplace, masonry. A hearth and fire chamber made of solid masonry units such as bricks, stones, or reinforced concrete and provided with a chimney complying with subchapter fifteen of this chapter.



Factory-Built Fireplace

Figure 14-1

Fireplace heat exchangers. Metal heat circulators designed for installation wholly within a masonry fireplace built in accordance with this code. Fireplace heat exchangers extract heat from the firebox of masonry fireplaces and return it to the area to be heated (see figure 14-2).

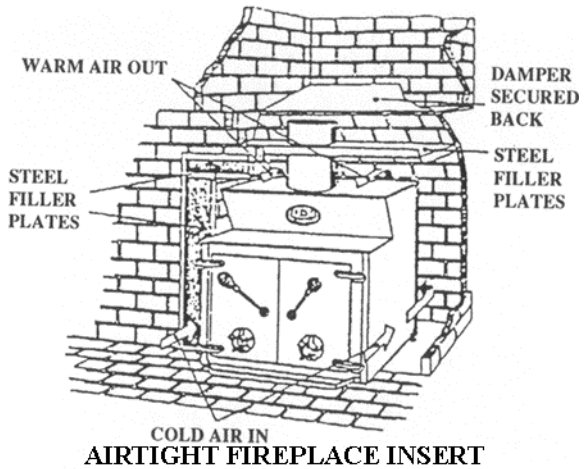


FIREPLACE-HEAT EXCHANGER

Figure 14-2

Fireplace inserts. Solid-fuel burning appliances located partially within a complying masonry fireplace. Stove and room heaters may be used as inserts for installation in masonry fireplaces (see figure 14-3).

Fireplace stoves. Freestanding assemblies having firechambers intended to be operated open to the room or



AIRTIGHT FIREPLACE INSERT
Figure 14-3

if equipped with doors to be operated with doors either open or closed and provided with a chimney complying with subchapter fifteen of this chapter (see figure 14-4).

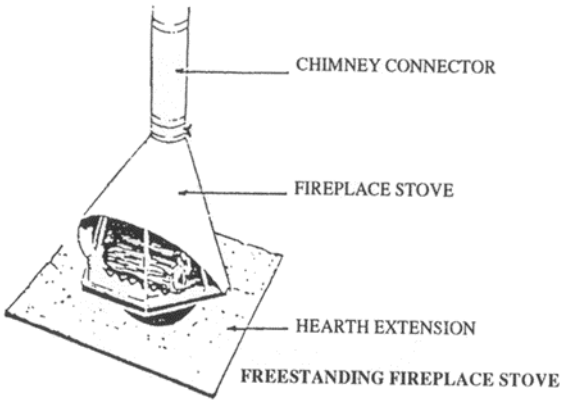


Figure 14-4

Room heater. A solid fuel burning freestanding firechamber assembly designed to be operated with the firechamber closed except for fueling and provided with a chimney complying with subchapter fifteen of this chapter (see figure 14-5).

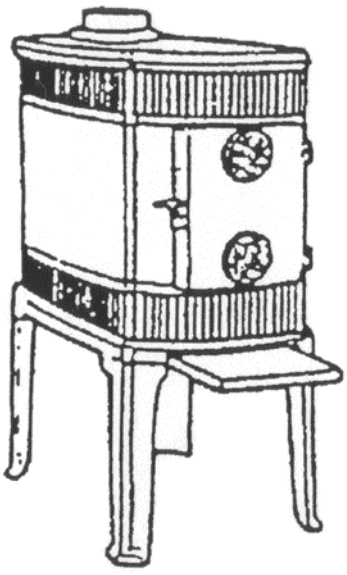
Hearth extension. The noncombustible surfacing applied to the floor area beneath, and extending beyond the front, back and sides of a heating appliance.

Listed and listings. Terms referring to equipment which is shown in a list published by an accepted nationally recognized testing laboratory qualified and equipped for experimental testing and maintaining an adequate periodic inspection of current production and whose listing shows that the equipment complies with nationally recognized safety standards.

Manufacturer's installation instructions. Printed instructions included with equipment as part of the conditions of the listing.

Solid fuel. A material such as natural wood which will ignite and burn when subjected to fire.

§27-848.04 Installations.-
(a) Application.
(1) An application for the installation of a fireplace or stove equipment shall be filed by a registered architect or licensed professional engineer at the borough office of the department. The application shall describe the equipment in question and its installation.
(2) The applicant, prior to the filing of the application, shall make an inspection to determine the adequacy of the air supply for combustion and ventilation and the ability of the equipment to be installed to comply with code requirements.
(b) Qualifications of installer.-
(1) Installation shall be made only by persons authorized by the manufacturer to install the specific equipment in question.
(2) The installer shall certify to the registered architect or licensed professional engineer who has filed the application that the installation is in full compliance with the terms of the listing, acceptance and the manufacturer's instructions.
(3) For retrofit installations in occupied residential dwellings, the installer shall have a home improvement contractor's license from the department of consumer affairs.
(c) Controlled inspection. -Installation shall be subject to controlled inspection to ensure that the installation is in accordance with:
(1) the structural elements shown on the approved plans,
(2) the fire protection requirements, and
(3) the listing, acceptance and the manufacturer's installation recommendations.
(d) Environmental requirements.- All solid fuel burning appliances shall comply with the requirements of the air pollution control law, chapter one of title twenty-four of this code.
(a) **State energy conservation code**. - The requirements of the New York State energy conservation construction code concerning the combustion air supply shall be complied with.



AIRTIGHT ROOM HEATER
Figure 14-5

§27-848.05 Structural adequacy.- The registered architect or licensed professional engineer filing the application for the installation shall certify on the application as to the adequacy of the structural supports and chimney bracing to sustain the loadings when in operation**.**

§27-848.06 Chimneys.- Fireplace, fireplace stove and room heater chimneys shall meet the requirements of subchapter fifteen of this chapter. Separate flues shall be provided for every fireplace, fireplace stove and room heater.

§27-848.07 Masonry fireplaces. –

(a) Construction.

(1) Masonry fireplaces shall be constructed of solid masonry units of reinforced portland or refractory cement concrete. Masonry fireplaces shall be supported on foundations of masonry or reinforced portland or refractory cement concrete, or on other noncombustible construction having a fire resistance rating of not less than three hours. Such supports shall be designed to support the loadings.

(2) Where a lining of low-duty fire clay refractory brick at least two inches thick laid in medium-duty fireclay refractory mortar, or the equivalent two inches thick soapstone, three-sixteenths inch thick steel or cast iron, or equivalent material capable of withstanding a temperature of 2000 degrees Fahrenheit without cracking or spalling or other accepted lining is provided, the total thickness of back and sides, including the lining, shall be not less than eight inches.

(3) Where such lining is not provided, the thickness of the back and sides shall be not less than twelve inches.

(4) Where the masonry supporting a fireplace is designed to support vertical loads from the building and corbels are used to support beams or girders, corbeling shall be as described in reference standard RS 14-18 as recommended for masonry chimneys. The lintel spanning the fireplace shall be designed and constructed to support the additional load transferred by the member.

(5) Masonry fireplaces shall be provided with chimneys designed and constructed in accordance with the requirements of subchapter fifteen of this chapter for construction of masonry chimneys or, where permitted by the individual listing, shall be provided with accepted factory-built chimneys having accepted adapters in accordance with the requirements for factory-built chimneys of subchapter fifteen of this chapter.

(b) Steel fireplace units.

(1) Steel fireplace units incorporating a firebox liner of not less than one quarter inch thick steel and an air chamber shall be installed with masonry to provide a total thickness at the back and sides of not less than eight inches, of which not less than four inches shall be solid masonry. Listed firebox liners shall be installed in accordance with the terms of the listing.

(2) Warm air ducts employed with steel fireplace units of the circulating air type shall be constructed of metal in accordance with reference standard RS 14-22, or of masonry.

(c) Clearance.

(1) All wood beams, joists, studs and other combustible material shall have a clearance of not less than two inches from the front faces and sides of masonry fireplaces, and not less than four inches from the back faces of masonry fireplaces. Headers of combustible material supporting masonry trimmer arches or concrete hearth extensions shall be located not less than twenty inches from the face of the chimney breast.

(2) Spaces between headers or trimmers of combustible material and masonry fireplaces shall be firestopped [*sic*] with noncombustible material. The material used for firestopping shall be galvanized sheet metal of at least no. 14 U.S. standard gage [*sic*] thickness, mineral board at least one quarter inch thick or equivalent rigid noncombustible sheet material not less than one half inch thick or other accepted noncombustible material.

(3) Woodwork, such as wood trim and mantels, or other combustible material shall not be placed within six inches of a fireplace opening. Combustible material above and projecting more than one and one-half inches from a fireplace opening shall not be placed less than twelve inches from the top of the fireplace opening.

(4) Clearances specified in reference standard RS 14-18 shall apply if greater than those specified in this subdivision.

(d) Hearth extensions.

(1) Masonry fireplaces shall have hearth extensions of brick, concrete, stone, tile or other accepted noncombustible materials. Such hearths shall be supported on trimmer arches of brick, stone, tile or concrete at least four inches thick, or of other equivalent materials and with noncombustible material against the underside thereof. Wooden forms or centers used during the construction of the hearth and hearth extension shall be removed when the construction is completed.

(2) Where the fireplace opening is less than six square feet, the hearth extension shall extend at least sixteen inches in front of the facing material and at least eight inches beyond each side of the fireplace opening.

(3) Where the fireplace opening is six square feet or larger, the hearth extension shall extend at least twenty inches in front of the facing material, and at least twelve inches beyond each side of the fireplace opening.

(4) Where a fireplace is elevated above or overhangs a floor, the hearth extension shall also extend over the area under the fireplace.

(e) Fireplace dampers. Every fireplace shall be equipped with a damper able to withstand distortion, binding, cracking or corrosion when exposed to the fireplace operating temperature.

(f) Accessories. Factory-built accessories shall be listed and accepted and shall be installed in accordance with the terms of their listing and acceptance.

§27-848.08 Wood burning appliances: Installation. -
(a) Scope. Wood burning appliances include factory-built fireplaces, fireplace stoves, room heaters, and fireplace inserts.
(b) Listing. Wood burning appliances shall be listed and accepted and shall be installed in accordance with the terms of their listing and acceptance.
(c) Location of appliances.
(1) Every appliance shall be located with respect to building construction and other equipment so as to permit access to the appliance. Sufficient clearance shall be maintained to permit cleaning of surfaces, the replacement of air filters, blowers, motors, controls and chimney connectors, and the lubrication and servicing of moving parts.
(2) Wood burning appliances shall not be installed in confined spaces or alcoves. The minimum size of the space or room in which the appliance is located shall be three hundred cubic feet. There shall be at least one openable window serving such space or room.
(3) Wood burning appliances shall not be installed in any location where gasoline or any other flammable liquids, vapors or gases are present or likely to be present.
(4) Wood burning appliances shall not be installed in any garage.
(d) Air for combustion and ventilation. Wood burning appliances shall be installed in a location in which the facilities for ventilation permit proper chimney draft and maintenance of safe temperature under conditions of use and provide sufficient air to prevent carbon monoxide from entering the dwelling space. Appliances shall be located so as not to interfere with proper circulation of air within the heated space. Where buildings are so tightly sealed that normal infiltration does not provide the necessary air, outside air shall be introduced.
(e) Mounting for residential type appliances.
(1) Residential type wood burning appliances that are tested and listed by an accepted national testing laboratory for installation on floors constructed of combustible materials shall be placed on such floors in accordance with the requirements of the listing and the conditions of acceptance. Such appliances which are not listed for installation on combustible floors by an accepted national testing laboratory shall be provided with floor protection in accordance with the provisions of subdivision (g) of this section. Residential type wood burning appliances are permitted to be placed without floor protection in any of the following manners:
a. on concrete bases adequately supported on compacted soil, crushed rock or gravel;
b. on concrete slabs or masonry arches that do not have combustible materials attached to the underside; or
c. on accepted assemblies constructed entirely of non-combustible materials, and having a fire resistance rating of not less than two hours, with floors constructed of noncombustible materials.
(2) Any floor assembly, slab or arch shall extend not less than eighteen inches beyond the appliance on all sides.
(3) In lieu of the requirements for floor protection specified herein, a floor protector listed by a recognized testing laboratory and installed in accordance with the installation instructions may be used.
(4) Appliances shall be supported by concrete bases, concrete slabs, masonry arches and floor ceiling assemblies and their supports which are designed and constructed to support the appliance.
(f) Mounting for fireplace stoves and room heaters.
(1) Fireplace stoves and room heaters which are set on legs or pedestals that provide not less than six inches of ventilated open space beneath the fire chamber or base of the appliance may be placed on floors of combustible construction, provided the floor under the appliance is protected with closely spaced solid masonry units not less than two inches in thickness. The top surface of the masonry shall be covered with sheet metal not less than 24 gage [*sic*] (0.024 inches). The floor protection shall extend not less than eighteen inches beyond the appliance on all sides.
(2) Fireplace stoves and room heaters [*sic*] which are set on legs or pedestals providing two to six inches of ventilated open space beneath the fire chamber or base of the appliance may be placed on floors of combustible construction, provided the floor under the appliance is protected with one course of hollow masonry units not less than four inches in thickness. The masonry units shall be laid with ends unsealed and joints matched in such a way as to provide a free circulation of air through the core spaces of the masonry. The top surface of the masonry shall be covered with sheet metal not less than 24 gage [*sic*] (0.024 inches). The floor protection shall extend not less than eighteen inches beyond the appliance on all sides.
(3) Fireplace stoves and room heaters with legs or pedestals that provide less than two inches of ventilated open space beneath the fire chamber or base of the appliance shall not be placed on floors of combustible construction.
(g) Clearances. Woodburning appliances shall be installed with the following minimum clearances to combustible construction: Above the top of appliance-thirty-six inches; from front-thirty-six inches; from back-thirty-six inches; from sides-thirty-six inches. The minimum clearance to noncombustible construction shall be six inches when table 14-1 herein is used except that forty-eight inches shall be maintained where the fuel is inserted. Accepted stoves shall be exempt from the above-mentioned clearances and shall be installed in accordance with the appropriate reference standard and clearances determined therefrom through tests specified in the reference standard.

TABLE 14-1 REDUCTION OF APPLIANCE CLEARANCE WITH SPECIFIED FORMS OF PROTECTION [1,2,3,4,5,6,7,8,9,10]

Clearance reduction system applied to and covering all combustible surfaces within the distance specified as required clearance with no protection	Maximum allowable reduction in clearance (percent)		When the required clearance with no protection is 36 in., the clearances below are the minimum allowable clearance. For other required clearances with no protection, calculate minimum allowable clearance from maximum allowable reduction. [9,10]	
	As Wall Protector	As Ceiling Protector	As Wall Protector (in.)	As Ceiling Protector (in.)
(a) 3 ½ in. thick masonry wall without ventilated air space	33%	—	24	—
(b) ½ in. thick noncombustible insulation board over 1 in. glass fiber or mineral wool batts without ventilated air space.	50%	33%	18	24
(c) 0.024 in. (24 gage) sheet metal over 1 in. glass fiber or mineral wool batts reinforced with wire, or equivalent, on rear face with ventilated air space.	66%	50%	12	18
(d) 3 ½ in. thick masonry wall with ventilated air space.	66%	—	12	—
(e) 0.024 in (24 gage) sheet metal with ventilated air space.	66%	50%	12	18
(f) ½ in. noncombustible insulation board with ventilated air space.	66%	50%	12	18
(g) 0.024 in (24 gage) sheet metal with ventilated air space over 0.024 in (24 gage) sheet metal with ventilated air space.	66%	50%	12	18
(h) 1 in. glass fiber or mineral wool batts sandwiched between two sheets 0.024 in. (24 gage) sheet metal with ventilated air space.	66%	50%	12	18

Notes for Table 14-1:

[1]Spacers and ties shall be of noncombustible material. No spacers or ties shall be used directly behind appliance or conductor.

[2]With all clearance reduction systems using a ventilated air space, adequate air circulation shall be provided. There shall be at least 2 in. between the clearance reduction system and combustible walls and ceilings for clearance reduction systems using a ventilated air space.

[3]Mineral wool batts (blanket or board) shall have a minimum density of 8 lb. per ft^3 and have a minimum melting point of 1500°F.

[4]Insulation material used as part of clearance reduction system shall have a thermal conductivity of 1.0(BTU-In.)/(Sq ft-Hr -°F) or less. Insulation board shall be formed of noncombustible material.

[5]If a single wall connector passes through a masonry wall used as a wall shield, there shall be at least 1/2 in. of open, ventilated air space between the connector and the masonry.

[6]There shall be at least 2 in. between the appliance and the protector. In no case shall the clearance between the appliance and the wall surface be reduced below that allowed in the table.

[7]Clearances in front of the loading door and/or ash removal door of the appliance shall not be reduced from those in Section 8-6.

[8]All clearances and thicknesses are minimums: larger clearances and thicknesses are acceptable. Clearances are not to be less than 12 in. from appliances.

[9]To calculate the minimum allowable clearance, the following formula may be used: $C x_{pr} = C_{un}$ x (1-R/100). C_{pr} is the minimum allowable clearance. C_{un} is the required clearance with no protection, and R is the maximum allowable reduction in clearance.

[10]Refer to Figures 14-11 and 14-12 for other reduced clearances using materials (a) through (h).

(h) Reduction of clearances from wood burning appliances.

(1) Clearances from listed and unlisted wood burning appliances to combustible material may be reduced if the combustible material is protected as described in table 14-1 herein and as shown in figures 14-6 to 14-10 herein.

(2) Clearances from wood burning appliances to combustible material may be reduced by the use of materials or products listed for the purpose of reducing such clearances. Materials and products listed for such purpose shall be installed in accordance with the conditions of the listing and the manufacturer's instructions.

(3) For clearance reduction systems using an air space between a combustible wall and wall protector, adequate air circulation shall be provided by one of the following methods as shown in figure 14-10 herein:

a. Adequate air circulation may be provided by leaving all edges of the wall open with an air gap of at least two inches.

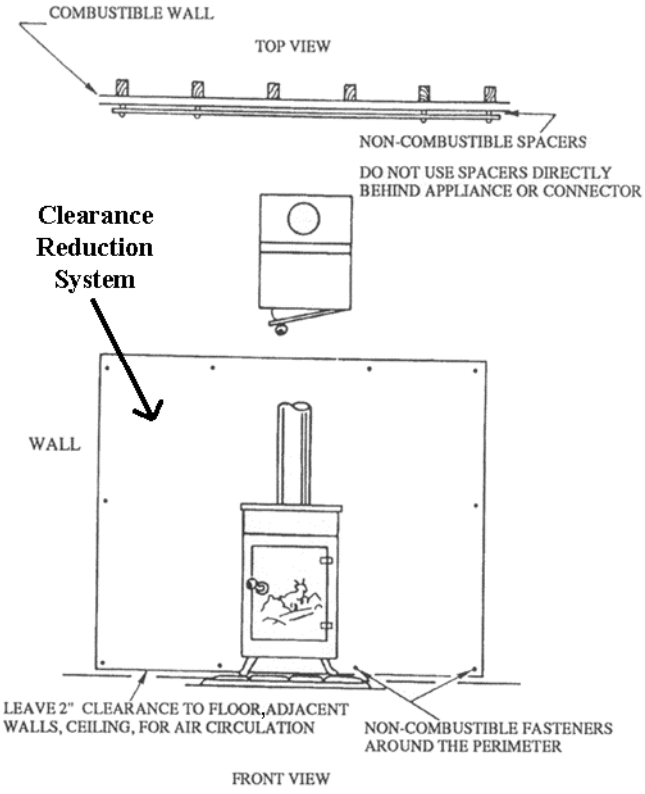


Figure 14-6

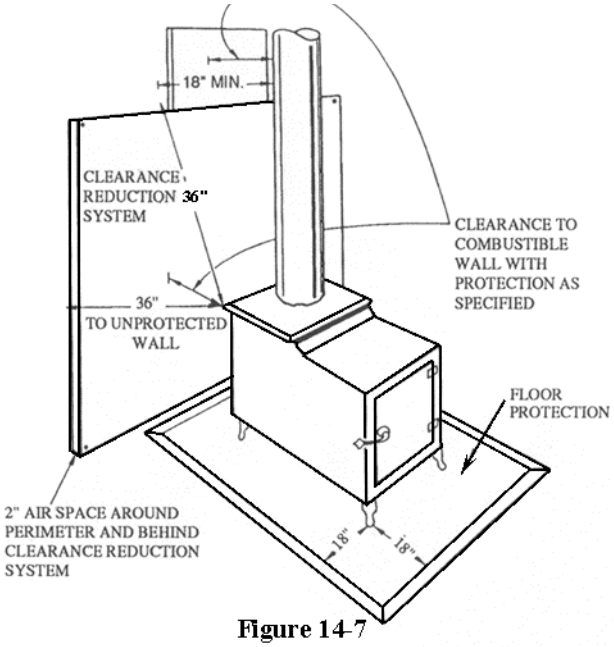


Figure 14-7

b. If the wall protector is mounted on a single flat wall away from corners, adequate air circulation may be provided by leaving only the bottom and top edges or

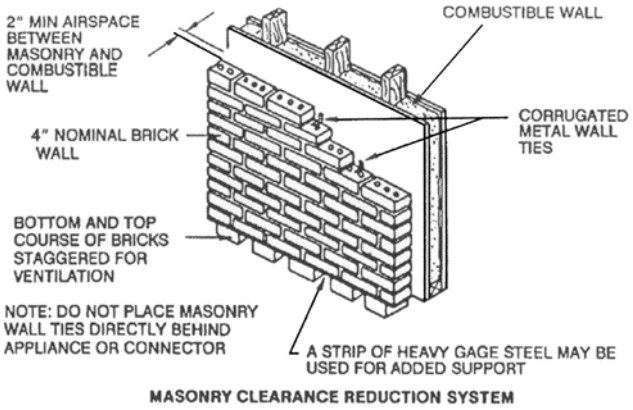


Figure 14-8

only the side and top edges open with an air gap of at least two inches.

c. Wall protectors that cover two walls in a corner shall be open at the bottom and top edges with an air gap of at least two inches.

(4) All clearances shall be measured from the outer surface of the combustible materials to the nearest point on the surface of the wood burning appliance, disregarding any intervening protection applied to the combustible materials.

(5) All clearances provided between wood burning appliances and combustible materials shall be large enough so as to maintain sufficient clearance between chimney connectors and combustible materials as required in subchapter fifteen of this chapter.

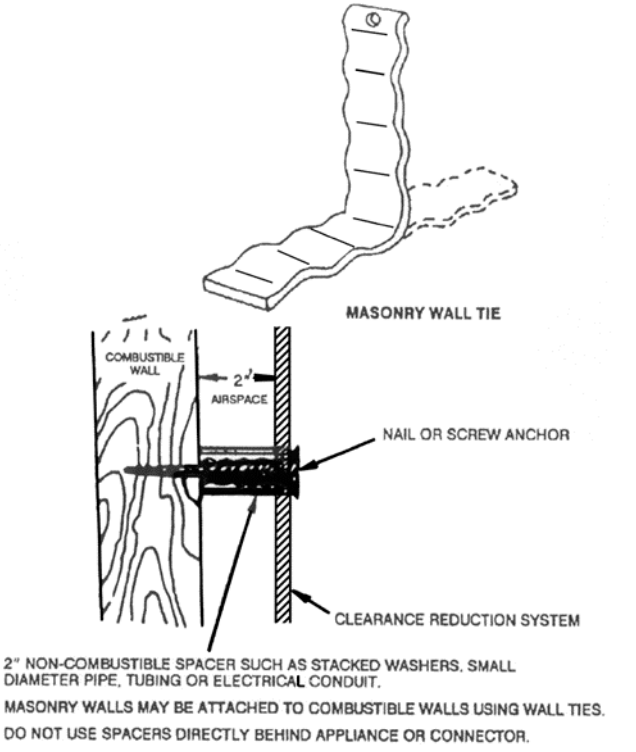


Figure 14-9

(i) Accessories. Factory-built accessories for wood burning appliances such as heat exchangers, stove mats,

floor pads and protection shields shall be listed and accepted, and shall be installed in accordance with the terms of their listing and acceptance.

§27-848.09 Factory-built fireplaces, fireplace stoves and room heaters. -

(a) Acceptance. Factory-built fireplaces, fireplace stoves and room heaters shall be listed and accepted for use as wood burning appliances.

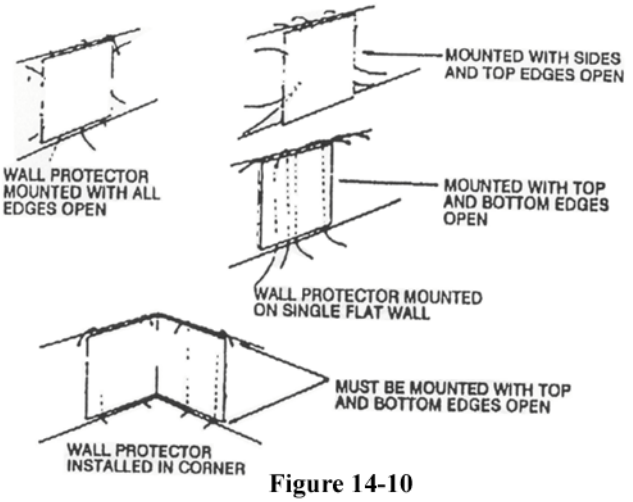


Figure 14-10

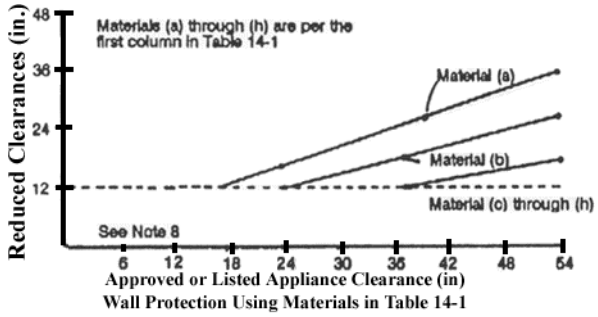


Figure 14-11

(b) Occupancy group limitations. Factory-built fireplaces, fireplace stoves and room heaters shall not be permitted in buildings other than those in residential occupancy group classifications J-2 and J-3, except that installations within other occupancy groups may be authorized by the commissioner pursuant to rules and regulations promulgated by the department.

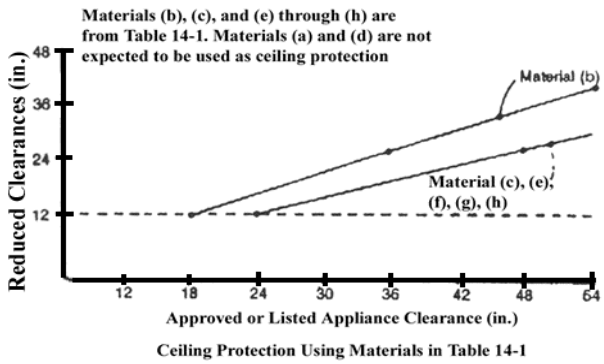


Figure 14-12

(c) Chimney requirements.

(1) The chimney systems of factory-built fireplaces, fireplace stoves and room heaters shall be constructed in accordance with section 27-869.01.

(2) No chimney shall serve more than one factory-built fireplace, fireplace stove or room heater or be pierced to serve any other appliance.

(d) Additional limitations. Factory-built fireplaces, fireplace stoves or room heaters shall be:

(1) located only in exterior rooms, and

(2) limited to space heating of the room within which they are located.

(e) Chimney connectors.

(1) Stovepipe.

a. The stovepipe (or chimney connector) connecting a factory-built fireplace, fireplace stove or room heater to a chimney may contain no more than two elbows. The total length of the connecting pipe should be kept as short as possible while maintaining the required minimum spacing between the factory-built fireplace, fireplace stove or room heater and combustible materials. See subdivision (h) of section 27-848.08 of this code.

b. The connector pipe shall be as large as the flue collars (where the connector pipe joins the factory-built fireplace, fireplace stove or room heater), and shall be fabricated from steel coated with a high temperature rust inhibitor.

c. The pipe's horizontal section shall rise one-quarter inch for each foot of pipe, with the highest point being at the chimney inlet, and shall not be longer than three quarters of the chimney height.

d. When joining sections of pipe, the joints shall overlap at least two inches, with the crimped (male) end pointing down to prevent creosote drip or leak. Each joint shall be secured with three sheet metal screws. All fits shall be snug.

e. The thimble shall be cemented with high temperature cement at the flue inlet. The pipe shall not project into the flue itself.

f. Connector pipe clearance to combustible materials shall be at least three times the pipe diameter (e.g. eighteen inches for six inch pipe), but not less than eighteen inches.

g. Stovepipes shall not pass through floors, ceilings or closets. Stovepipes shall not pass through exterior walls unless directly connected with a thimble to the chimney as noted in subparagraph h of this paragraph.

h. Alternately, a listed and accepted noncombustible thimble larger in diameter than the connector pipe, or a burned fireclay or metal thimble surrounded by not less than twelve inches of brickwork may be used for protection.

i. Connectors and chimneys for factory-built fireplaces, fireplace stoves and room heaters shall be designed, located and installed to permit ready access for internal inspection and cleaning, in compliance with the requirements of subchapter fifteen of this chapter.

(2) Connection to masonry fireplace flue. A factory-built fireplace stove or room heater or insert may use a masonry fireplace flue when the following conditions are met:
a. There is a connector which extends from the fireplace stove or room heater to the flue liner.
b. The cross-sectional area of the flue is no more than three times the cross-sectional area of the flue collar of the factory-built fireplace, fireplace stove or room heater.
c. There is a noncombustible seal below the entry point of the connector if the appliance vents directly through the chimney wall above the smoke chamber.
d. The chimney system can be inspected and cleaned.
e. Air from the habitable space is not used to dilute combustion products in the chimney flue.
f. Hearth extensions are provided in accordance with the manufacturer's instructions or are of masonry of noncombustible construction in accordance with subdivision (d) of section 27-848.07.

§27-848.10 Fireplace heat exchangers and fireplace inserts.- Fireplace heat exchangers and fireplace inserts shall not be inserted into or connected to factory-built fireplaces unless listed by a nationally recognized testing laboratory and accepted for use in the specific fireplace.

§27-848.11 Imitation fireplaces.- Only natural gas-fired fireplace heaters accepted in accordance with the provisions of article twelve of subchapter thirteen of this chapter shall be used with imitation fireplaces and shall be installed in accordance with the conditions of the acceptance.

§27-848.12 Precautionary requirements. -
(a) Smoke detecting devices. Smoke detecting devices, complying with article six of subchapter seventeen of this chapter, are required where fireplaces, fireplace stoves or room heaters are installed. At least one device shall be in the same room as the installation or in an adjacent room.
(b) Fire extinguisher. A fire extinguisher rated for class "A" fires shall be available in the vicinity of a fireplace, fireplace stove or room heater.
(c) Latching. The fireplace stove fuel door shall be latched to prevent burning wood from falling out or an overfired fire from occurring due to an oversupply of air.
(d) Fireplace screens. Fireplace stoves shall be equipped with fireplace screens to minimize spark emission.
(e) Warnings. Warnings on fireplace stoves shall be as required by the United States Consumer Product Safety Commission [*sic*] and reference standard RS 14-20.
(f) Floor protection. Floor protection for fireplace stoves required by section 27-848.08(f) shall extend a minimum of twenty-six inches beyond the stove at the front or side where the ashes are removed and at least eight inches on the other sides.

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SUBCHAPTER 15
CHIMNEYS AND GAS VENTS

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ARTICLE 1 GENERAL

§[1500.1] 27-849 Scope. -This subchapter shall establish the minimum safety requirements for, and control the design, construction, installation, alteration, and use of chimneys and gas vents.

§[1500.2] 27-850 Standards.- The provisions of reference standard RS-15 shall be a part of this subchapter.

§[1500.3] 27-851 Definitions. -For definitions to be used in the interpretation of this subchapter, see subchapter two of this chapter.

§[1500.4] 27-852 Plans. -For the requirements governing the filing of plans and the work to be shown on plans, see subchapter one of this chapter.

§[1500.5] 27-853 Permits. -For the requirements governing equipment work permits and equipment use permits, see subchapter one of this chapter.

§[1500.6] 27-854 General requirements.—Chimneys or gas vents shall be designed and constructed so as to provide the necessary draft and capacity to completely exhaust the products of combustion to the outside air, and to satisfy the following conditions:
(a) Temperature. -The temperature on adjacent combustible surfaces shall not be raised above one hundred sixty degrees Fahrenheit.
(b) Condensation. -The condensation shall not be developed to an extent that can cause rapid deterioration of chimney or vent.

***§[1500.7] 27-855 Factory-built chimneys and gas vents**.-
(a) Factory-built chimneys. -Factory-built chimneys and chimney units shall be listed and accepted in accordance with the applicable reference standard and shall be installed in accordance with the temperature conditions and height limitations of the listing and acceptance, the manufacturer's instructions or this article, whichever is the most restrictive. Flue gas temperatures in the chimney shall not exceed the limits and durations employed during listing tests and as required by this code.
(b) Gas vents. -Type B and Type BW gas vents shall be listed and accepted in accordance with the conditions of the acceptance and applicable provisions of this code.
Local Law 80-1989.

ARTICLE 2 CHIMNEYS

§[1501.1] 27-856 General requirements. -
(a) Equipment requiring chimneys.- All gas-burning equipment that produces flue gas temperatures in excess of five hundred fifty degrees Fahrenheit or four hundred eighty degrees Fahrenheit above room temperature, and all solid and liquid fuel-burning equipment, shall be connected to chimneys that conform to the requirements of this subchapter.
***(b) Chimney construction**. -Unlisted chimneys shall be constructed of steel, brick, masonry units, concrete, concrete units, or equivalent materials. Chimneys shall be of adequate structural strength, with resistance suitable for the temperatures to which they may be subjected and resistive to the corrosive action of gases. For structural requirements, see subchapters ten and eleven of this chapter.
(c) Separation of flues. -Whenever more than one flue is installed within a chimney, the lining of each flue shall be separated, one from the other, as follows:
(1) In low temperature chimneys with fire clay flue linings: by a wythe of cement grout at least one inch thick or other equivalent method.
(2) In medium temperature and high temperature chimneys: by a division wall of brick or concrete at least three and three-quarters inches thick or other equivalent method.
The separation between flue linings thus established shall in all cases be adequate to give stability for the chimney construction as required by subchapter ten of this article.
(d) Test run. -All new chimneys shall be test run by the applicant under operating conditions to demonstrate fire safety and the complete exhausting of smoke and the products of combustion to the outer air. The results of such test run shall be certified as correct by the applicant and shall be submitted in writing to the department.
(e) Requirement of a smoke test. -Whenever required by the commissioner after an inspection has been made of the chimney, a smoke test shall be made as outlined in section 27-868 of this article. Any faults or leaks found shall be corrected. Such smoke test shall be witnessed by a representative of the commissioner. In lieu thereof, the commissioner may accept the test report of an architect or engineer in which case the test shall be subject to the provisions for controlled [*sic*] inspection except that the architect or engineer may be retained by the contractor.
Local Law 80-1989.

§[1501.2] 27-857 Classification of chimneys.-
Chimneys shall be classified as follows:
(a) Low temperature chimneys. -Chimneys designed and constructed to exhaust the products of combustion from low temperature equipment as defined in subchapter fourteen of this chapter.
(b) Medium temperature chimneys.- Chimneys designed and constructed to exhaust the products of combustion from medium temperature equipment as defined in subchapter fourteen of this chapter.
(c) High temperature chimneys. -Chimneys designed and constructed to exhaust the products of combustion from high temperature equipment as defined in subchapter fourteen of this chapter.

§[1501.3] 27-858 Cleanouts and maintenance.-
Whenever a new chimney is completed or an existing chimney is altered, it shall be cleaned and left smooth on the inside. Cleanouts with a gas tight door shall be provided at the base of all chimneys.

§[1501.4] 27-859 Chimney heights and locations. -
(a) Low temperature chimneys. -Low temperature chimneys shall extend at least three feet above the highest construction, such as a roof ridge, parapet wall, or penthouse, within ten feet of the chimney outlet, whether the construction

is on the same building as the chimney or on another building. However, such constructions do not include other chimneys, vents, or open structural framing. Any chimney located beyond ten feet from such construction, but not more than the distance determined in subdivision (d) of this section, shall be at least as high as the construction.

(b) Medium temperature chimneys. -Medium temperature chimneys shall extend at least ten feet above the highest construction, such as a roof ridge, or parapet wall or penthouse within twenty feet of the chimney outlet, whether the construction is on the same building as the chimney or on another building. However, such constructions do not include other chimneys, and vents. Any chimney located beyond twenty feet from such constructions but not more than the distance determined in subdivision (d) of this section, shall be at least as high as the construction.

(c) High temperature chimneys. -High temperature chimneys shall extend at least twenty feet above the highest construction, such as roof ridge, parapet wall, penthouse, or other obstruction within fifty feet of the chimney outlet, whether the construction is on the same building as the chimney or in another building. However, such constructions do not include other chimneys, vents, or open structural framing. Any chimney located beyond fifty feet from such construction but not more than the distance determined in subdivision (d) of this section, shall be at least as high as the construction.

(d) Formula. -The following formula shall be used for determining the distances referred to in subdivisions (a), (b) and (c) of this section:

$$D = F\sqrt{A}$$

where:

D = Distance, in ft., measured from the center of the chimney outlet to the nearest edge of the construction.

F = Value determined from table 15-1.

A = Free area, in sq. in., of chimney flue space.

TABLE 15-1 "F" FACTOR FOR DETERMINING CHIMNEY DISTANCES

Type of Fuel	"F" Factor		
	Low Temp. Chimney	Medium Temp. Chimney	High Temp. Chimney
Gas…….……	2	2	3
No. 2 Fuel Oils……	2.5	2.5	3
No. 3, No. 6 Fuel Oils, Solid Fuels and Incinerators……	3	3	3

§[1501.5] 27-860 Adjoining Chimneys. -

(a) Responsibility of owner of taller building. -Whenever a building is erected, enlarged, or increased in height so that any portion of such building, except chimneys or vents, extends higher than the top of any previously constructed chimneys within one hundred feet, the owner of such new or altered building shall have the responsibility of altering such chimneys to make them conform with the requirements of section 27-859 of this article. A chimney that is no longer connected with a fireplace or combustion or other equipment for which a chimney was required, shall be exempt from this requirement. Such alterations shall be accomplished by one of the following means or a combination thereof:

(1) Carry up the previously constructed chimneys to the height required in section 27-859 of this article.

(2) Offset such chimneys to a distance beyond that required in section 27-859 of this article from the new or altered building, provided that the new location of the outlet of the offset chimney shall otherwise comply with the requirements of this subchapter.

(b) Protection of draft. -After the alteration of a chimney as required by subdivision (a) of this section, it shall be the responsibility of the owner of the new or altered building to provide any mechanical equipment or devices necessary to maintain the proper draft in the equipment.

(c) Written notification. -The owner of the new or altered building shall notify the owner of the building affected in writing at least forty-five days before starting the work required and request written consent to do such work. Such notice shall be accompanied by plans indicating the manner in which the proposed alterations are to be made.

(d) Approval. -The plans and method of alteration shall be subject to the approval of the commissioner.

(e) Refusal of consent. -If consent is not granted by the owner of the previously constructed building to do the alteration work required by subdivisions (a) and (b) of this section, such owner shall signify his or her refusal in writing to the owner of the new or altered building and to the commissioner; and the owner of the new or altered building has submitted plans that conform to the requirements of this section, he or she shall thereupon be released from any responsibility for the proper operation of the equipment due to loss of draft and for any health hazard or nuisance that may occur as a result of the new or altered building. Such responsibilities shall then be assumed by the owner of the previously constructed building. Likewise, should such owner neglect to grant consent within forty-five days from the date of written request or fail to signify his or her refusal, he or she shall then assume all responsibilities as prescribed above.

(f) Procedure. -It shall be the obligation of the owner of the new or altered building to:

(1) Schedule this work so as to create a minimum of disturbance to the occupants of the affected building.

(2) Provide such essential services as are normally supplied by the equipment while it is out of service.

(3) Where necessary, support such extended chimneys and equipment from this building or to carry up such chimneys within his or her building.

(4) Provide for the maintenance, repair, and/or replacement of such extensions and added equipment.

(5) Make such alterations of the same material as the original chimney so as to maintain the same quality and appearance, except where the owner of the chimney affected shall give his or her consent to do otherwise. All work shall be done in such fashion as to maintain the architectural esthetics of the existing building.

(g) Existing violations. -Any existing violations on the previously constructed equipment shall be corrected by the owner of the equipment before any equipment is added or alterations made at the expense of the owner of the new or altered building.

(h) The commissioner may grant a variance in accordance with the provisions of section 27-107 of article one of subchapter one of this chapter.

§[1501.6] 27-861 Metal chimneys. -

(a) Exterior metal chimneys.- Exterior metal chimneys constructed of steel shall be of adequate thickness to resist all applied loads specified in subchapter nine of this chapter, but shall not be less than the thickness required in table 15-4.

(b) Clearances for exterior metal chimneys. -Metal chimneys erected on the exterior of a building shall have sufficient clearance from a wall or frame of combustible construction to satisfy the requirements of table 15-2 and to permit inspection and maintenance operations on the chimney, and shall comply with the following minimum requirements:

(1) Exterior metal chimneys over eighteen inches in diameter, for equipment of any operating temperature, shall have a clearance of at least four inches, and those eighteen inches or less in diameter shall have a clearance of at least two inches from a building wall of any combustible construction.

(2) No portion of an exterior metal chimney shall be nearer than twenty-four inches to any door or window or to any exit, or located where it would be readily accessible to the public, unless it is insulated or shielded to avoid injury to any person in contact with the chimney.

TABLE 15-2 MINIMUM CLEARANCES REQUIRED FROM ANY COMBUSTIBLE MATERIALS

Classification of Equipment		
Low Temperature	Medium Temperature	High Temperature*
6”	24”	24”

Bracket not enacted but probably intended.

(c) Enclosure of interior metal chimneys. -

(1) Every interior metal chimney or part thereof erected within buildings shall be enclosed with non-combustible construction having a fire resistance rating of not less than that prescribed in table 15-3 in all stories above the one in which the equipment served thereby is located. Where the metal chimney passes through a combustible roof, it shall be guarded by a non-combustible ventilating thimble of galvanized metal or equivalent non-combustible material that extends at least nine inches below and above the roof construction. The thimbles shall be of a size to provide clearances on all sides of the metal chimney of at least six inches for low temperature equipment and at least eighteen inches for medium and high temperature equipment as defined in subchapter fourteen of this chapter. However, if the metal chimney is insulated and protected to prevent a temperature of more than two hundred fifty degrees Fahrenheit on its exterior surface the thimble clearance may be reduced by fifty percent.

(2) The enclosure around a metal chimney shall provide a space on all sides of the chimney to permit inspection and repair for the entire chimney height. When metal chimneys have a minimum dimension of twenty-four inches in diameter and are completely jacketed with noncombustible insulating material within the required enclosure, access to permit inspection and repair shall not be required.

(3) The enclosing construction shall be of non-combustible materials and shall have a fire resistance rating as required in table 15-3 and shall be without openings, except access openings equipped with opening protectives constructed in accordance with the requirements of subchapter five of this chapter, at floor levels where necessary for complete inspection purposes.

(4) The required fire resistance ratings of table 15-3 for the enclosure of a medium or high temperature metal chimney may be reduced by one hour if the chimney is insulated with an insulation adequate for the temperature of the chimney and having at least a one hour fire resistance rating at all sections of the insulation.

** **TABLE 15-3 REQUIRED FIRE RESISTANCE RATINGS OF ENCLOSURES FOR METAL CHIMNEYS**

Chimney Classification	Required Fire Resistance Rating of Enclosure
Low Temperature	1 Hr. for buildings under 5 stories 2 Hr. for buildings 5 stories or more
Medium Temperature	2 Hr.
High Temperature	3 Hr.

Note for Table 15-3:

Table 3-4 of section 27-271 shall also be complied with in the construction of enclosures for metal chimneys.

Local Law 80-1989.

(d) Prohibited location. -No interior metal chimney shall be carried up inside a ventilating duct unless such duct is constructed as required by this subchapter for metal chimneys, and only when such duct is used solely for exhaust venting the room or space in which the equipment served by the metal chimney is located. Metal chimneys shall not be installed in air supply ducts.

****(e)** Unlisted metal chimneys serving residential type or low heat appliances and producing flue gas having a temperature below 350ºF at the entrance to the chimney at

full load or partial load shall be lined with acid and condensate resistant refractory material, or constructed of suitable stainless steel, or otherwise protected so as to minimize or prevent condensation or corrosion damage as required in reference standard RS 15-14.
**Steel chimneys for exterior use shall be insulated and weather sheathed to maintain flue surface temperatures above the acid dew point in all parts of the system in accordance with subdivision (b) of section 27-854.
(g) Steel chimneys for interior use shall be insulated to ensure enclosure temperatures not in excess of 160ºF on combustible materials in accordance with subdivision (a) of section 27-854.
Local Law 80-1989.

§[1501.7] 27-862 Materials other than metal for construction of chimneys. -Materials other than metal for the construction of chimneys shall include the following:
(a) Clay, concrete, or shale bricks, laid in a full bed of mortar.
(b) One hundred percent solid masonry units, or hollow masonry units having the cores filled with mortar or grout, laid in spread mortar covering the entire cross-sectional area of the unit.
(c)Concrete cast in place and adequately reinforced where required. (d) Natural stones that have been sawed, dressed, or have a tooled finish, laid in spread mortar.e) Perforated radial brick. Such brick shall be laid in spread mortar equal to type M, of reference standard RS 15-3, and shall be shaped to the circular and radial lines of the various sections so as to form even joints.
(f) Other equivalent materials or combination of materials.

TABLE 15-4 LOW TEMPERATURE CHIMNEY CONSTRUCTIONS

Material	Thickness	Lining Required	Type of Lining	Thickness	Air Space
Steel[a] (for exterior chimneys)[b]	1/8 in. for areas up to 7 sq. ft., 3/16 in. for areas up to 12.5 sq. ft., 1/4 in. for larger.	Not required	….	….	….
Steel[a] (for interior chimneys)	No. 16 U.S. gage for areas up to 155 sq. in., No. 14 U.S. gage up to 200 sq. in., No. 12 U.S. gage up to 255 sq. in., No. 10 U.S. gage for greater areas.	Not required	….	….	….
Brick, masonry units, or stone	8 inches[c]	Full height from chimney base to 4 in. above chimney walls.	Clay flue lining meeting requirements of Reference Standard RS 15-4, with fire clay mortar or cement mortar equal to that of Type M of Ref. Std. RS 15-3, or a heat-proof and acid-proof flue lining joint cement.	Not less than 5/8 in.	Not less than 1/4 in. nor more than 3/4 in. between chimney walls and flue lining.
Concrete	6 inches[c]	ditto	ditto	ditto	ditto
Radial brick	7 ½ inches	Full height from chimney base to 4 in. above chimney wall.	Firebrick Type G, RS 15-6, laid in medium refractory mortar, RS 15-7, or acid resistant brick Type H or L, Ref. Std. RS 15-8.	4 1/2 inches	….
Brick type H or L, RS 15-7	8 inches	Not required	….	….	….

Notes for Table 15-4:
[a]Metal chimneys shall be of riveted, bolted or welded construction and made gas tight.
[b]Exterior metal chimneys shall be galvanized, or painted on the exterior surface with a heat resisting paint or be constructed of equal corrosion resistive alloys.
[c]In buildings in residential occupancy group J3, of four stories or less, and in other buildings not over two stories high and not in high hazard occupancy group A, providing the flue areas are not more than 200 sq. in. the walls of masonry or concrete chimneys may be reduced to 4 in. with fire clay flue lining. Flue linings shall be set ahead of chimney walls, and carefully bedded in fire clay mortar or in cement mortar. Chimney walls shall be provided with mortar spacer ties every 10 ft, of height. Mortar ties shall not be continuous around the flue linings.

***TABLE 15-5 MEDIUM TEMPERATURE CHIMNEY CONSTRUCTIONS**

Material	Thickness	Lining Required	Type of Lining	Thickness	Air Space
Steel	Same as for low temp. chimney	Lining is required for full height of chimney.	Incinerators only-Castable refractory Cl. A, RS 15-5	2 in.	None required
			Medium-duty fireclay refractory brick (ASTM C64) or the equivalent laid in medium-duty refractory mortar (ASTM C105) or the equivalent, RS 15-6.	The lining shall be at least 2 ½ in. thick for chimneys having a diameter or greatest cross-section dimension of 18 in. or less. The lining shall have a thickness of not less than 4 ½ in. laid on a full bed for chimneys having a diameter or greatest cross-section dimension greater than 18 in.	
Brick or masonry units	8 inches	Full height from chimney base to 4 in. above chimney wall.	Firebrick Type G, RS 15-6 laid in medium refractory mortar, RS 15-7, or acid resistant brick Type H or L, Ref. Std. RS 15-8.	4 ½ inches	None required
Concrete	6 inches	ditto	ditto	ditto	ditto
Stone	12 inches	ditto	ditto	ditto	ditto
Radial brick	7 ½ inches	Full height from chimney base to 4 in. above chimney wall.	ditto	ditto	ditto
Brick masonry units, stone, or concrete	Double wall construction, each wall 8 inches thick	From 2 feet below to a height of 25 feet above the point of entry if connector, the inner wall shall be lined.	Fire clay flue lining, as required for low temperature masonry chimneys.	5/8 inch	2 in. air space between each 8 in wall, fire-stopped at each floor with non-combustible material.

Local Law 80-1989.

***§[1501.8] 27-863 Chimney construction for low, medium, and high temperature equipment.-**

(a) Unlisted chimneys for low temperature equipment shall be constructed in accordance with table 15-4.

(b) Unlisted chimneys for medium temperature equipment shall be constructed in accordance with table 15-5.

(c) Unlisted chimneys for high temperature equipment shall be constructed in accordance with table 15-6.

Local Law 80-1989.

***§27-863.01 Chimney limitations and tests.-**

No solid fuel fireplace, fireplace stove or room heater shall be installed or altered unless connected to a chimney which complies with the limitations and testing requirements set forth in table 15-6.1.

Local Law 80-1989.

§[1501.9] 27-864 Chimney supports.-

(a) Chimneys shall not be supported by the equipment they serve unless such equipment has been specifically designed for such loads.

(b) An exterior metal chimney shall be supported on an independent substantial masonry or concrete foundation designed in accordance with the provisions of subchapters ten and eleven of this chapter. Interior metal chimneys may be supported on noncombustible construction at intermediate levels.

(c) Masonry and concrete chimneys may be designed and constructed as free standing , or as constituting an integral part of a wall, or may be enclosed within a structure without constituting a component part thereof.

*TABLE 15-6 HIGH TEMPERATURE CHIMNEY CONSTRUCTIONS

Material	Thickness	Lining Required	Type of Lining	Thickness	Air Space
Steel	Same as for low temp. chimney	For full height of chimney	High-duty fireclay refractory brick (ASTM C64) or the equivalent not less than 4 ½ in. thick laid on a full width bed in high- duty refractory mortar (ASTM C105) or the equivalent, RS 15-6.	4 ½ inches	None required
Brick masonry or concrete	Double wall construction with each wall 8 inches thick and an intervening air space	Inner course of inner wall shall be a firebrick, form 2 feet below connector to full height of chimney	Firebrick same as above for steel chimneys, except no castable refractory permitted.	4 ½ inches	2 in. air space required between the two 8 in. walls, fire-stopped as for medium temperature chimneys.
Steel and masonry, or concrete single wall. (Steel on inside of chimney)	Steel as above, with a single 8 in. masonry or 6 in. concrete wall and an intervening air space.	For full height of chimney	Firebrick and castable refractory, same as above for steel chimneys.	4 ½ inches 2 inches	2 in. air space required between the steel and the masonry or concrete wall, fire-stopped as per medium temperature chimneys.
Radial Brick	7 ½ inches	For full height from chimney base to 4 in. above chimney wall.	Firebrick as above for steel chimneys except no castable refractory permitted	4 ½ inches	None required

*TABLE 15-6.1 CHIMNEY LIMITATIONS AND THESTS FOR SOLID FUEL FIREPLACES, FIREPLACE STOVES AND ROOM HEATERS

Occupancy	Reference Standard	Test Standard	Temperature	Number of Tests
J-2 & J-3 limited to 40 feet and three stories	RS 15-15	UL 127, as Modified	1700°F	1 test
J-2 & J-3 limited to 75 feet	RS 15-9	UL 103HT	2100 °F —10 min.	3 tests
	RS 15-12	ULC 629M	2100 °F —30 min.	3 tests
All other occupancies and all buildings	RS 15-10	UL 959	2100 °F to Equilibrium and 2300—30 min.	1 test 3 tests
greater than 75 feet in height	Table 15-6 of subdivision (c) of section 27-863 and Section 27-861	No Standard	Unlisted High Temp. Chimney with Required Thickness listed in Table 15-6	No test

Notes for Table 15-6.1:

Chimneys accepted pursuant to reference standard RS 14-10 or Table 15-6 may be used in lieu of chimneys accepted pursuant to reference standards RS 15-9, RS 15-12, and RS 15-15.

Chimneys accepted pursuant to reference standards RS 15-9 or RS 15-12 may be used in lieu of chimneys accepted pursuant to reference standard RS 15-15.

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(d) Masonry and concrete chimneys shall be wholly supported on noncombustible construction that shall conform to the requirements of subchapters ten and eleven of this chapter, and shall not be required to support any direct load other than the weight of the chimney. No supports shall project into the chimney flue or flue lining.
*(e) Supports for listed chimneys shall be listed and installed in accordance with the listing and acceptance.
Local Law 80-1989.

§[1501.10] 27-865 Chimney caps.- All masonry chimneys shall be capped with concrete, cement wash, terra cotta tile, or other equivalent material.

§[1501.11] 27-866 Corbelling of chimneys. -Walls less than twelve inches thick shall not be corbelled. The maximum horizontal projection in any corbel shall be one inch for each two inches of vertical projection and in all cases the total projection shall not be greater than one-third of the minimum thickness of the wall to be corbelled. In no case shall the total projection be more than six inches. No masonry chimney shall be corbelled from hollow or cavity wall masonry units.

***§[1501.12] 27-867 Clearances from masonry and concrete chimneys**. -
(a) All wood beams, joists, and studs shall be framed away from chimneys. Headers, beams, joists, and studs shall be at least two inches from the outside face of a chimney or from masonry enclosing a flue. Trimmers shall be not less than five inches from the inside face of the concrete or masonry chimney wall. Finished flooring shall have at least one-half inch clearance from chimney walls.
(b) A clearance of at least four inches shall be provided between the exterior surfaces of masonry or concrete chimneys for commercial and industrial type incinerators and combustible material.
(c) A clearance of at least two inches shall be provided between the exterior surfaces of interior masonry or concrete chimneys for all wood burning appliances.
(d) No combustible lathing, furring, or plaster grounds shall be placed against a chimney at any point more than one and one-half inches from the corner of the chimney; but this shall not prevent plastering directly on masonry or on metal lath and metal furring nor shall it prevent placing chimneys for low temperature equipment entirely on the exterior of a building against the sheathing.
(e) All spaces between chimneys and wood joists, beams, or headers shall be firestopped in accordance with the provisions of subchapter five of this chapter.
(f) No change in the size or shape of a chimney shall be made within six inches of the roof framing through which it passes.
Local Law 80-1989.

§[1501.13] 27-868 Smoke test. -
(a) General. -When required by the commissioner to determine the tightness of chimney constructions, a smoke test shall be made in accordance with the following conditions and requirements:
(1) The equipment, materials, power and labor necessary for such test shall be furnished by, and at the expense of, the owner or holder of the work permit.
(2) If the test shows any evidence of leakage or other defects, such defects shall be corrected in accordance with the requirement of this subchapter and the test shall be repeated until the results are satisfactory.

(b) Method of test. -The chimney shall be filled with a thick penetrating smoke produced by one or more smoke machines, or smoke bombs, or other equivalent method. As the smoke appears at the stack opening on the roof, such opening shall be tightly closed and a pressure equivalent to a one-half inch column of water measured at the base of the stack, shall be applied. The test shall be applied for a length of time sufficient to permit the inspection of the chimney.

§[1501.14] 27-869 Exhaust gases from internal combustion engines. -
(a) Exhaust pipe construction. -The exhaust pipe from internal combustion engines shall be constructed in accordance with the requirements for metal chimneys based on the temperature of the gases entering the exhaust pipe, and in accordance with the following:
(1) The requirements for at least a medium temperature chimney shall apply.
(2) The exhaust pipe shall be constructed of at least three-sixteenths inch steel, or of other equivalent metal of similar strength and resistance to the temperature and corrosive action of the exhaust gases.
(3) No lining shall be required.
(4) Where the exhaust pipe runs inside a building, it shall be insulated with an insulation adequate for the temperature of the pipe, so that the surface temperature shall be not more than two hundred degrees Fahrenheit.
(5) All joints shall be constructed so as to be gastight under all operating conditions. No threaded joints shall be permitted in pipe sizes over four inches or in pipe of a thickness less than that of schedule 40 steel pipe.
(b) Location of discharge opening. -The location of the discharge opening of the exhaust pipe shall comply with the requirements of subdivision (d) of section 27-776 of article one of subchapter thirteen of this chapter, and, in addition, the opening shall be located or arranged so that it cannot cause condensate leaving the outlet to come in contact with people. The exhaust pipe may be connected to a chimney used for other equipment, provided that the operation of the engine does not adversely affect the operation of the other equipment so as to cause a fire or health hazard, or to cause the emissions from the chimney to be in violation of the air pollution control code.
***§27-869.01 Factory-built chimneys**. -
(a) Residential occupancy. In residential occupancy groups J-2 and J-3:
(1) Factory-built chimneys servicing liquid or gas fueled appliances shall be listed and accepted in accordance with reference standard RS 15-8[A].**
***Copy in brackets not enacted but probably intended*.

(2) Factory-built chimneys servicing wood burning fireplaces or stoves and inserts shall be listed and accepted in accordance with reference standards RS 15-9, RS 15-10, RS 15-12 or RS 15-15.
(3) Factory-built chimneys servicing factory-built fireplaces shall be listed and accepted in accordance with reference standard RS 15-15.
(b) Other occupancies. In all other occupancy groups:
(1) Factory-built chimneys servicing liquid or gas fueled appliances shall be listed and accepted in accordance with reference standard RS 15-10 or RS 15-11.
(2) Factory-built chimneys servicing wood burning appliances of any type shall be listed and accepted in accordance with reference standard RS 15-10.
(c) Enclosures. All factory-built chimneys shall be enclosed in accordance with the requirements of table 15-3.
(d) Height limitation: Every chimney servicing a factory-built fireplace or wood burning stove in a building of more than seventy-five feet in height shall be listed and accepted in accordance with reference standard RS 15-10, unless such chimney is an unlisted high temperature chimney constructed in accordance with the requirements of section 27-861 and of table 15-6 of subdivision (c) of section 27-863, and is installed to serve the appliance.
Local Law 80-1989.

***§27-869.02 Changes in appliance fuels**. -
(a) Conversion from gas to fuel oil or wood for heating appliances shall be made only if:
(1) the chimney design meets the requirements of this subchapter for the conversion fuel; and
(2) the chimney size is adequate to vent the combustion products from the new fuel.
(b) Conversion from solid or liquid fuels to natural gas fuels for heating appliances shall be made only if:
(1) the chimney design meets the requirements of this subchapter for the conversion fuel;
(2) the chimney is thoroughly cleaned prior to the conversion to remove collected flue deposits, which can spall off when gas is used as a fuel;
(3) the chimney size is recalculated for the new fuel;
(4) drains are installed to remove condensed water; and
(5) gas vents are installed within the chimney for venting purposes if required by the appliance listing.
Local Law 80-1989.

* **§27-869.03 Reduction in flue size**. -Conversion from one fuel to another or the use of an existing chimney to service a fireplace or wood burning appliance may require a flue size change for proper operation. This may be done if the redesigned flue meets the criteria for the fuel and chimney type to be used as set forth in this subchapter.
(a) Individual fireclay flue linings, in conformance with reference standard RS 15-14 or the equivalent not less than five-eighths inch thick, may be used but shall be carefully bedded one on the other in medium-duty fireclay refractory mortar in conformance with reference standard RS 15-6 or the equivalent as determined by the commissioner, with close fitting joints left smooth on the inside. Linings shall be separate from the chimney wall and the space between the liner and masonry shall not be filled; only enough mortar shall be used to make a good joint and hold the liners in position.
(**b) Cast in place chimney linings**. -
(1) Cast in place linings shall be installed in accordance with reference standard RS 15-16 and with their listing and acceptance.
(2) The applicant prior to the installation of the lining shall verify that the chimney meets the requirements of reference standard RS 15-4 and is in a sound and uncracked condition, that spalling has been removed and that there are no carbon or creosote deposits.
Local Law 80-1989.

ARTICLE 3 CHIMNEY CONNECTORS

§[1502.1] 27-870 Chimney connector construction.-Chimney connectors except those serving incinerators shall be constructed of galvanized steel of thickness conforming to the requirements listed in subdivision (a) of this section or of equivalent materials. Cleanout doors of the same material as the connector or other equivalent means shall be provided for the cleaning of connectors. Tile pipe shall not be used as a chimney connector.
(a) Thickness of metal. -The thickness of galvanized steel for chimney connectors shall be not less than that given in table 15-7.
(b) General. -All chimney connectors shall be as short and as straight as possible consistent with their use and the required draft conditions. No chimney connector shall pass through a floor or ceiling construction.

TABLE 15-7 REQUIRED THICKNESS OF GALVANIZED STEEL FOR CONNECTORS

Galvanized Sheet Gage [*sic*] No.	Area of Connector Sq. In.
24	less than 79
22	80 to 154
20	155 to 200
16	Over 200

§[1502.2] 27-871 Chimney connection. -In entering a flue in a masonry or metal chimney, the chimney connector shall be installed above the extreme bottom to avoid stoppage and in such manner or by such means as to prevent the chimney connector from entering so far as to restrict the space between its end and the opposite wall of the chimney. The chimney connector shall be firmly attached or inserted into a thimble or slip joint to prevent it from falling out of place. All connectors shall fit tightly. Chimney connections to any flue shall be limited to one floor. Two or more chimney connectors may be joined to a single connection provided that the chimney connectors are on one floor level and the flue is of sufficient size to serve all of the equipment thus connected. Chimney connectors shall be inspected at the time of the initial installation by the commissioner or by a duly authorized insurance company as provided in section two hundred four of the labor law.

§[1502.3] 27-872 Chimney connector clearances. -
(a) From combustible construction. -The minimum distance between the chimney connector and any combustible material or construction shall be:
(1) eighteen inches for chimney connectors from low temperature equipment.
(2) thirty-six inches for chimney connectors from medium temperature and high temperature equipment.
(b) Reduced clearances. -The above clearances may be reduced as outlined in table 15-8 in accordance with the type of protection applied to the combustible material or construction.

***TABLE 15-8 REDUCED CLEARANCES FOR CHIMNEY CONNECTORS WITH SPECIFIED FORM OF PROTECTION**[1, 2, 3, 4]

Type of protection Applied to the combustible material and covering all surfaces within the distance specified as the required clearance with no protection. Thicknesses are minimum	Where the required clearance with no protection is: 36 in.	18 in.	9 in.	6 in.
(a) 0.027 in. (23 gage) [*sic*] sheet metal spaced out 1in.	36 in.	18 in.	9 in.	6 in.
(b) 3 ½ in. thick masonry wall spaced out 1 in. and adequately tied to the wall being protected. (see Note 4.)	18 in.	9 in.	4 in.	2 in.
(c) 0.027 in. (23 gage) [*sic*] sheet metal on 1 in. mineral wool batts reinforced with wire or equivalent spaced out in 1 in.	12 in.	3 in.	2 in.	2 in.

Notes for Table 15-8:
[1]Spacers and ties shall be of noncombustible material.
[2]All methods of protection require adequate ventilation between protective material and adjacent combustible walls and ceilings.
[3]Mineral wool batts (blanket or board) shall have a minimum density of 8 lb. per cu. ft. and a minimum melting point of 1500ºF.
[4]If a single wall connector passes through the masonry wall there shall be at least 1/2 in. open ventilated airspace between the connector and the masonry.
Local Law 80-1989.

§[1502.4] 27-873 Underground chimney connectors.-
Underground chimney connectors shall be covered with at least twelve inches of solid masonry or an equivalent insulation. Each cleanout opening shall be provided with double iron doors or covers, and the doors or covers shall be twelve inches apart with the intervening space filled with insulating material. The doors or covers shall be not less than 10 manufacturer's standard gage [*sic*]. No combustible flooring shall be permitted over such connectors.

§[1502.5] 27-874 Annual inspection of chimney connectors.-
Chimney connectors for boilers subject to section two hundred four of the labor law shall be inspected at least once a year by the commissioner or by a duly authorized insurance company, as provided in subdivision (b) of section 27-793 of article two of subchapter fourteen of this chapter and shall be subject to procedures listed therein.

ARTICLE 4 INCINERATOR CHIMNEYS AND REFUSE CHARGING CHUTES

§[1503.1] 27-875 Charging chutes for refuse reduction.-
Charging chutes shall be constructed in accordance with the following requirements:
(a) Directly connected. -When directly connected to the combustion chamber of an incinerator, the chutes shall be gas tight with smooth linings and shall conform to the following:
(1) They shall be constructed in accordance with the requirements for medium temperature chimneys.
(2) They shall extend through the building roof and be open to the outer air. The opening shall be equal to the required chute size at the top floor.
(3) If a roof damper is used it shall be constructed to open automatically under conditions of excessive pressure or temperature. The roof damper shall be electrically interlocked with the auxiliary burners.
(4) Each charging chute shall be provided with a spark arrester of corrosion resistive, noncombustible construction in which the maximum size of mesh opening shall not exceed three-quarters of an inch. The cross-sectional free area of such arrester shall be not less than that of the inside of the chute to which it is attached. The height of the spark arrester shall be such that there will be a mimimum of twenty-four square feet of total free area provided for a chute height to sixty feet; thirty-six square feet for a chute height from sixty-one feet to one hundred twenty feet; and forty-four square feet for chute heights over one hundred twenty feet. In no case, however, shall the height of the spark arrester be less than one foot.
(5) Provisions shall be made for sterilizing the charging chute by heating or purging at a temperature of at least four hundred degrees Fahrenheit but not higher than one thousand degrees Fahrenheit.
(b) Not directly connected. -When not directly connected to a building service incinerator, the chutes shall be gas tight with smooth linings and shall conform to the following:

(1) They shall be constructed in accordance with the applicable requirements for shafts in table 3-5** and subchapter five of this chapter.
***As enacted but "3-4" probably intended.*
(2) They shall extend through the building roof and be open to the air. The opening shall be equal to at least one square foot.
(3) If a roof damper is used it shall be constructed to open automatically under conditions of excessive pressure or temperature.
(4) Provisions shall be made for sterilizing the chute by spraying, washing, or other equivalent means.
(5) Bins, containers, or rooms for receiving rubbish shall be constructed as required by section 27-837 of article eighteen of subchapter fourteen of this chapter and sprinklers shall be provided as required by the construction provisions of subchapter seventeen of this chapter.
(c) Sizes. -
(1) The sizes of chutes directly connected to the incinerators in buildings shall conform to table 15-9.
(2) Charging chutes not directly connected to the incinerator shall have a cross-sectional free area adequate for the service intended.
(d) Charging doors. -Charging doors, service openings, or hopper doors for chutes may be located in separate rooms or compartments enclosed in non-combustible walls or partitions, floors, and ceilings having a fire resistance rating of at least one hour and a self-closing fire door with a three-quarter-hour fire-protection rating. Service openings shall, in no case, have a free area of more than one-third of the cross-sectional free area of the chute to which they give access. All such openings shall be substantially constructed of steel or the equivalent metal of sufficient thickness to prevent distortion or other damage in normal usage. The door shall be provided with counterweights, door checks, or other equivalent means for automatically closing after use and where the chute is connected directly to the combustion chamber of an incinerator, the door shall be so constructed that the chute is closed off while the hopper is being loaded. No part of the door shall project into the chute at any time. The minimum height of charging door openings shall be eleven inches, and the minimum width shall be thirteen inches.
(e) When charging chutes are located in multiple dwellings, in addition to the requirements of this subchapter, the chutes shall be constructed in accordance with the requirements for noise control of chutes in subchapter twelve of this chapter.

TABLE 15-9 MINIMUM SIZE OF CHARGING CHUTES

Building Height	Location	If Square		If Round
7 stories or less	All 7 stories	22 ½"	x 22 ½"	24" dia.
8 to 30 stories	Top 7 stories	22 ½"	x 22 ½"	24" dia.
	8th to 30th from the top	27"	x 27"	30" dia.
31 stories and over	Top 7 stories	22 ½"	x 22 ½"	24" dia.
	8th to 30th from the top	27"	x 27"	30" dia.
	Remaining lower	32"	x 32"	36" dia.

§[1503.2] 27-876 Chimneys for building service incinerators.- Chimneys for building service incinerators shall be constructed in accordance with the requirements of this subchapter for high or medium temperature chimneys, based upon the temperature of the flue gases leaving the equipment, except that no reduction of flue gas temperature shall be recognized if such reduction is the result of using water scrubbers or barometric dampers. In addition, such chimneys shall comply with the following:
(a) Chimneys shall extend through the roof and be open to the air.
(b) Chimneys shall be provided with a spark arrester as required in paragraph four of subdivision (a) of section 27-875 of this article.
(c) Incinerators may discharge into chimneys serving other equipment provided such combined chimney is of adequate size for both uses, conforms to construction required for the highest temperature, and adequate draft control equipment is provided for each device connected to the combined chimney.

§[1503.3] 27-877 Chimneys for industrial or municipal incinerator plants.- Chimneys for central incinerator plants shall be constructed in accordance with the requirements for:
(a) Medium temperature chimneys if the incinerator is provided with a heat recovery unit or other means to assure a flue gas temperature not in excess of one thousand degrees Fahrenheit at the base of the stack.
(b) High temperature chimneys if the incinerator has no heat recovery unit or other means to assure a flue gas temperature less than one thousand degrees Fahrenheit.

§[1503.4] 27-878 Incinerator chimney connectors. -
(a) The chimney connector from the combustion chamber of an auxiliary fuel-fired incinerator shall be constructed of metal at least as heavy as no. 16 manufacturers standard gage [*sic*] when twelve inches or less in diameter or greater dimension, and of metal at least as heavy as no. 12 manufacturers standard gage [*sic*] when they exceed twelve inches in diameter or greater dimension.
(b) Chimney connectors from auxiliary fuel-fired incinerators shall be lined with firebrick, laid in fire clay mortar, at least two and one-half inches thick when they are between twelve inches and eighteen inches in diameter or greater dimension and at least four and one-half inches thick when they are larger; where no flue gas temperature reduction is effected the chimney connectors shall be equipped with a guillotine or horizontal sliding damper or butterfly damper interlocked with the fuel firing controls so that operation of the incinerator occurs when the damper is open. If chimney connectors from auxiliary fuel-fired incinerators lead into and combine with chimney connectors from other equipment, the connectors from the other equipment shall also be lined as required for direct flue connections unless the cross-sectional area of the connector into which they lead is at least four times their required cross-sectional area.
(c) Chimney connectors for an auxiliary fuel-fired incinerator to a boiler stack or chimney for [*sic*] high temperature heating equipment shall be permitted when the cross-sectional area of such stack or chimney is at least four times that of the incinerator chimney connector.
(d) The clearance of incinerator chimney connectors from combustible material or construction shall be at least thirty-six inches. This clearance may be reduced as outlined in

table 15-8 in accordance with the type of protection applied to the combustible material or construction.

ARTICLE 5 GAS VENT SYSTEMS

†§[1504.1] 27-879 General. -
(a) Vent systems of gas-fired equipment shall be so designed and constructed as to completely exhaust the products of combustion to the outdoor air.
(b) When required by the commissioner, gas vents shall be tested to determine fire safety and the adequate exhausting of the products of combustion.
(c) Vents shall be installed if required, in accordance with the applicable standards for gas-fired equipment. See reference standard RS 15-2 for a tabulation of these standards.
†***Local Law 80-1989.***

†§[1504.2] 27-880 Equipment not required to be vented.-
(a) Ranges for which a vent is not required by reference standard RS 15-2.
(b) Built-in domestic cooking units for which a vent is not required by reference standard RS 15-2.
(c) Hot plates and laundry stoves.
(d) Type 1 clothes dryers.
(*e) Water heaters with inputs not over five thousand Btu/hr. (See note below.)
(*f) Automatically controlled instantaneous water heaters that supply water to a single faucet which is attached to and made a part of the equipment.
(*g) A single booster type (automatic instantaneous) water heater when designed and used solely for the sanitizing rinse requirements of a national sanitation foundation class one, two or three dishwashing machine, provided that the input is limited to fifty thousand Btu/hr. The storage capacity is limited to twelve and one-half gallons and the heater is installed in a commercial kitchen having a mechanical exhaust system.
(*h) Refrigerators.
(*i) Counter equipment.
(*j) Room heaters for which a vent is not required by reference standard RS 15-0.
(*k) Other equipment for which a vent is not required and which are not provided with flue collars.
(*l) Specialized equipment of limited input such as laboratory burners or gas lights.
See notes at end of Section 27-880.
†***Local Law 80-1989.***

Notes:
When any, or all, of the equipment marked with an asterisk (*) is installed so that the aggregate input rating exceeds thirty Btu/hr. per cubic foot of room or space in which it is installed, one or more pieces of the equipment shall be provided with a venting system or other equivalent means for removing the vent gases to the outdoor air so that the aggregate input rating of the remaining unvented equipment does not exceed the thirty Btu/hr. per cubic foot figure. When the room or space in which such equipment is installed is directly connected to another room or space by a doorway, archway, or other opening of comparable size, which cannot be closed, the volume of such adjacent room or space may be included in the calculations.

†§[1504.3] 27-881 Draft hoods. -
(a) All vented equipment, except dual oven type combination ranges, equipment with sealed combustion chambers, and units designed for power burners or forced venting, shall be installed with a draft hood or with a barometric damper.
(b) The draft hood supplied with, or forming a part of, vented equipment shall be installed in accordance with the requirements of the applicable standard in reference standard RS 15-2. The draft hood shall be located in the same room as the combustion air opening of the equipment.
†***Local Law 80-1989.***

§[1504.4] 27-882 Chimneys for venting gas-fired equipment.-
When venting of gas-fired equipment is provided for by the use of chimneys, such chimneys shall be constructed in accordance with the requirements of this subchapter.

§[1504.5] 27-883 Gas equipment connected to chimneys.-
Automatically controlled gas-fired equipment connected to a chimney that also serves equipment for the combustion of solid or liquid fuel shall be equipped with an automatic pilot. A gas-fired equipment vent connector and a chimney connector from equipment burning another fuel, located on the same floor, may be connected into the same chimney through separate openings, or may be connected through a single opening if joined by a suitable fitting located as close as practicable to the chimney. If two or more openings are provided into one chimney, they shall be at different levels.

§[1504.6] 27-884 Types of gas vents. -
†(a) Type B gas vents. -Type B gas vents conforming to the requirements of section 27-855 of article one of this subchapter may be used to vent gas-fired equipment. Type B gas vents may be used for single-story or multi-story installations when they conform to the requirements of section 27-855 of article one of this subchapter and the gas equipment used in multi-story installations shall be accepted for such use. Type B gas vents shall be used to vent only listed gas appliances with draft hoods and other gas appliances listed for use with Type B gas vents. However, Type B gas vents shall not be used for venting:
(1) vented wall furnaces listed for use with Type BW gas vents only;
(2) incinerators;
(3) appliances which may be converted readily to the use of solid or liquid fuels;
(4) combination gas-oil burning appliances;
(5) appliances listed for use with chimneys only.
†***Local Law 80-1989.***
†(b) Type B-W gas vents. -Type B-W gas vents conforming to the requirements of section 27-855 of article one of this subchapter shall be used to vent gas-fired vented recessed heaters. Type B-W gas vents may be used with single-story or multi-story installations when they conform to the requirements of section 27-855 of article one of this subchapter and the gas equipment used in multi-story installations shall be accepted for such use. Type BW vents shall be used with listed vented gas wall furnaces having a capacity not greater than that of the listed Type BW gas vent.
†***Local Law 80-1989.***
(c) Single-wall metal vents. -Single-wall metal vents may be used to vent gas-fired equipment and shall be constructed of not less than 16 oz. sheet copper, or No. 20 galvanized sheet gage [*sic*] steel, or of other

equivalent noncombustible corrosion-resistive material. Single-wall metal gas vents may pass through the roof or exterior wall to the outdoor air, but shall not pass through any attic or other concealed space nor through any intermediate floor construction.

(d) Connection to a common vent. -Connection of gas-fired equipment on more than one floor level to a common vent, except as provided for in subdivisions (a) and (b) of this section, shall be prohibited.

(e) Ventilating hoods. -Ventilating hoods and exhaust systems may be used to vent kitchen, laboratory, and commercial [*sic*] equipment.

§[1504.7] 27-885 Labeling gas vents. -Gas vents for use with gas-fired equipment, and which are not designed for use with solid or liquid fuel-fired equipment, shall be plainly and permanently identified by a metal label etched or embossed to read: "This gas vent is for equipment which burns gas only. Do not connect to incinerator or solid or liquid fuel-burning equipment." This label shall be attached to the vent at a point near where the gas vent system enters the wall, ceiling, or chimney.

§[1504.8] 27-886 Special venting arrangements. -

(a) Equipment with sealed combustion chambers. -The vent requirements contained in this subchapter do not apply to equipment having sealed combustion chambers and which are so constructed and installed that all air for combustion is derived from outside the space being heated and all flue gases are discharged by integral vent to the outdoors. Such equipment, having integral venting, shall be installed in accordance with the conditions of the applicable standard governing their use.

(b) Gas-vent exhausters and chimney exhausters. -Gas-vent exhausters and chimney exhausters may be used with gas appliances in lieu of natural draft vents. Where an exhauster is used with gas-burning equipment requiring venting, provisions shall be made to prevent the flow of gas to the main burner in the event of failure of the exhaust system. A vent connector serving gas equipment vented by natural draft shall not be connected into the discharge side of a power exhauster.

(c) Ventilating hoods and exhaust systems. -
Ventilating hoods and exhaust systems may be used to vent gas equipment installed in commercial applications. When automatically operated equipment, such as water heaters, are vented through natural-draft ventilating hoods, dampers shall not be installed in the ventilating system. When the ventilating hood or exhaust system is equipped with a power-driven exhaust fan, the equipment control system shall be so interlocked as to permit equipment operation only when the power exhaust is in operation. When used, ventilating hoods shall be built and installed in accordance with the provisions of subchapter thirteen of this chapter.

§[1504.9] 27-887 Installation requirements. -

(a) The gas vent connected to equipment with a single vent shall not be less than the size of the draft hood outlet, and in no case less than two inches in diameter.

(b) When more than one piece of equipment is connected to a gas vent, the area shall be not less than the area of the largest vent connector plus fifty percent of the areas of additional vent connectors or in accordance with the provisions of reference standard RS 15-1.

(c) Where two or more vent connectors enter a common vertical gas vent or chimney, the smaller conne ctor shall enter at the highest level consistent with available headroom or clearance to combustible material. Two or more items of gas equipment may be vented through a common vent connector or manifold located at the highest level consistent with available headroom or clearance to combustible material. The manifold, all junction fittings, and the common vent connector shall be of a size adequate for the combined volume of the vent gases.

(d) Gas vents shall be enclosed as provided in subdivision (c) of section 27-861 of article two of this chapter.

§[1504.10] 27-888 Gas vent height and locations. -Gas vents shall extend at least two feet above the highest construction, such as a roof ridge, parapet wall, or penthouse, within ten feet of the vent outlet whether the construction is on the same building as the chimney or on another building. However, such constructions do not include chimneys or other vents, or open structural framing. The vent shall be as high as such construction which is located beyond ten feet from the vent and up to and including the distance determined by the following formula:

$$D = 2\sqrt{A}$$

where:

D = Distance in ft., measured from the center of the vent outlet to the nearest edge of the construction.

A = Free area, in sq. in., of vent flue space.

Vents shall be subject to the following additional requirements:

(a) No gas vent shall terminate less than five feet in vertical height above the highest connected equipment draft hood outlet or flue collar.

(b) No type B-W gas vent serving a vented recessed heater shall terminate less than twelve feet in vertical height above the bottom of the heater.

(c) All gas vents shall terminate in an approved vent or cowl, which shall prevent down drafts and prevent rain and debris from entering the vent.

§[1504.11] 27-889 Adjoining gas vents. -

(a) Responsibility of owner of taller building. -Whenever a building is erected, enlarged, or increased in height so that any portion of such building, except chimneys or vents, extends above the top of a previously constructed gas vent within fifty feet, the owner of the new or altered building shall have the responsibility of altering such gas vents that have their outlets within fifty feet measured horizontally, of any part of the newly erected building. Such alterations shall be at the expense of the owner of the new or altered building and shall be accomplished by one of the following means or a combination thereof:

(1) Carry up such previously constructed vents from gas-fired equipment to the eight required in section 27-888 of this article.

(2) Offset such gas vents to a distance of more than fifty feet from the new or altered building, provided that

the new location of the outlet of the offset gas vent shall comply with the requirements of this subchapter.
(b) Protection of draft. -After the alteration of a gas vent as described in subdivision (a) of this section, it shall be the responsibility of the owner of the new or altered building to provide any mechanical devices or equipment necessary to maintain the proper draft in the equipment.
(c) Written notification. -The owner of the new or altered building shall notify the owner of the building affected in writing at least forty-five days before starting the work and request written consent to do such work. Such notice shall be accompanied by a written description or a plan showing how the proposed alterations are to be made.
(d) Approval. -The method of correction shall be subject to the approval of the commissioner.
(e) Refusal of consent. -If consent is not granted by the owner of the previously constructed or altered building to do the alteration work required by paragraph one of subdivision (a) of this section, such owner shall signify his or her refusal in writing to the owner of the new or altered building and to the commissioner, and the owner of the new or altered building has submitted plans that conform to the requirements of this section, he or she shall thereupon be released from any responsibility for the operation of his or her equipment and for any health hazard or nuisance that may occur as a result of the newly erected or modified building. Such responsibilities shall then be assumed by the owner of the previously constructed building. Likewise, should such owner neglect to grant consent within forty-five days from the date of written request or fail to signify his or her refusal, he or she shall then assume all responsibilities as prescribed above.
(f) Procedures. -It shall be the obligation of the owner of the new or altered building to:
(1) Schedule this work so as to create a minimum of disturbance to the occupants of the affected building.
(2) Provide such essential services as are normally supplied by the equipment while it is out of service.
(3) Where necessary, support such extended gas vents from his or her building or carry up such vents within his or her building.
(4) Provide for the maintenance, repair, and/or replacement of such alterations.
(5) Make such alterations of the same material as the original gas vent except where the owner of the vent affected shall give his or her consent to do otherwise. All work shall be done in such fashion as to maintain the architectural esthetics of the existing building.
(g) Existing violations. -Any existing violations on the previously constructed equipment shall be corrected by the owner of the equipment before any equipment is added or alterations made at the expense of the owner of the new or altered building.
(h) The commissioner may grant a variance in accordance with the provisions of section 27-107 of article one of subchapter one of this chapter.

§[1504.12] 27-890 Support of gas vents. -All portions of gas vents shall be adequately supported for the weight of the material used and for the applied loads on the vent.

§[1504.13] 27-891 Prohibited termination. -Gas vents extending through outside walls shall not terminate below eaves or parapets.

ARTICLE 6 GAS VENT CONNECTORS

§[1505.1] 27-892 Construction. -Vent connectors for conversion burners without draft hoods, or other gas-fired equipment without draft hoods, shall be constructed of materials having resistance to corrosion and temperature not less than that of no. 24 galvanized sheet gage [*sic*] steel.
(a) Vent connectors used for gas-fired equipment having draft hoods and for conversion burners having draft hoods, shall be constructed of Type B gas vent material or materials having resistance to corrosion and temperature not less than that of no. 26 galvanized sheet gage [*sic*] steel.
(b) The vent connector between the equipment and the vertical gas vent or chimney shall have the greatest possible initial rise consistent with the headroom available in the equipment area and with the required clearance to combustible material. The horizontal run of the vent connector shall be as short as possible and the equipment shall be located as near the gas vent or chimney as practicable. The maximum length of an uninsulated horizontal run of vent connector shall not exceed seventy-five percent of the height of the gas vent or chimney.
(c) No vent connector shall pass through floor or ceiling construction.

§[1505.2] 27-893 Clearances. -
(a) Minimum clearances. -Minimum clearances at vent connectors to combustible materials shall not be less than those listed in table 15-10.
(b) Reduced clearances. -These clearances may be reduced when the combustible construction is protected as provided in table 15-11.

§[1505.3] 27-894 Thimbles. -
(a) When passing through combustible constructions, vent connectors constructed of type B gas vent material shall be installed so that the clearances required by the standard are maintained.
(b) Vent connections made of single-wall metal pipe shall not pass through any combustible walls or partitions unless they are guarded at the point of passage by ventilated metal thimbles not smaller than the following:
(1) For equipment conforming to standards-four inches larger in diameter than the vent connector.
(2) For equipment having draft hoods-six inches larger in diameter than the vent connector.
(3) For equipment without draft hoods-twelve inches larger in diameter than the vent connector.

§[1505.4] 27-895 Size of connectors. -The vent connector shall not be smaller than the size of the flue collar or the draft hood outlet of the gas-fired equipment. Where a single item of equipment has more than one draft hood outlet, the vent connector shall equal the combined area of the draft hood outlets for which it acts as a common connector to the gas vent or chimney.

TABLE 15-10 VENT CONNECTOR CLEARANCE[S]* FOR GAS-FIRED EQUIPMENT

	Minimum Distances from Combustible Materials (in.)	
	Type B Gas Vent Material	Other Than Type B Materials
Boiler	As required by Std.	6
Warm air furnace	As required by Std.	6
Water heater	As required by Std.	6
Room Heater	As required by Std.	6
Floor furnace	As required by Std.	6
Conversion burner (with draft hood)	6	9
Equipment with draft hoods	6	9
Equipment without draft hoods	Not Permitted	18

Copy in brackets not enacted but probably intended.

TABLE 15-11 REDUCED CLEARANCES FOR VENT CONNECTORS WITH SPECIFIED FORMS OF PROTECTION[a]

Specified Form of Protection[b]	Reduced Clearances Where the Required Clearance with No Protection is:		
	18 in.	9 in.	6 in.
(a) 1/4 in. asbestos millboard spaced out 1 in.[c]	12	6	3
(b) 28 gage [*sic*] sheet metal on 1/4 in. asbestos mill board	12	4	2
(c) 28 gage [*sic*] sheet metal spaced out 1 in.[c]	9	4	2
(d) 28 gage [*sic*] sheet metal on 1/8 in. asbestos millboard spaced out 1 in.[c]	9	4	2
(e) 1 1/2 in. asbestos cement covering on heating appliance	18	9	6
(f) 1/4 in. asbestos millboard on 1 in. mineral fiber bats reinforced with wire mesh or equivalent	6	4	2
(g) 22 gage [*sic*] sheet metal on 1 in. mineral fiber bats reinforced with wire or equivalent	3	2	2
(h) 1/4 in. asbestos cement board or 1/4 in. asbestos millboard	18	9	4
(i) 1/4 in. cellular asbestos	18	9	3

Notes for Table 15-11:

[a]Except for the protection described in (e) above, all clearances should be measured from the outer surface of the appliance to the combustible material disregarding any intervening protection applied to the combustible material.

[b]Applied to the combustible material unless otherwise specified and covering all surfaces within the distance specified as the required clearance with no protection. Thicknesses are minimum.

[c]Spacers shall be on** noncombustible material.

As enacted but "of" probably intended.

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SUBCHAPTER 16
PLUMBING AND GAS PIPING

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ARTICLE 1 GENERAL

§[1600.1] 27-896 Scope.-The provisions of this subchapter shall establish and control the minimum requirements for the design, installation, alteration, repair, and maintenance of plumbing systems, including gas piping, sanitary and storm drainage, industrial and special wastes, sanitary facilities, water supplies and storm water and sewage disposal, except where specific exemptions are made in the code. All installation, alteration, repair, and maintenance work shall be performed by or under the direct supervision of a licensed master plumber, except as follows:

(a) Minor alterations and ordinary repairs as defined and delimited in article five of subchapter one of this chapter.

(b) Installation of gas service piping and gas meter piping may be performed by a utility corporation that is subject to the jurisdiction of the public service commission, provided that the corporation maintains and services such piping.

(c) Emergency repairs to alleviate hazardous conditions in gas distribution piping may be performed by a utility corporation which is subject to the jurisdiction of the Public Service Commission, subject to the requirements of section 27-176 of article fifteen of subchapter one of this chapter.

§[1600.2] 27-897 Standard.-The provisions of reference standard RS-16 shall be a part of this subchapter.

§[1600.3] 27-898 Definitions.- For definitions to be used in the interpretation of this subchapter, see subchapter two of this chapter.

§[1600.4] 27-899 Plans.- For the requirements governing the filing of plans and the work to be shown on plans, see subchapter one of this chapter.

§[1600.5] 27-900 Permits.-For the requirements governing application for building permits and plumbing permits, see subchapter one of this chapter.

§[1600.6] 27-901 General requirements.-Plumbing and gas piping shall be designed and installed so as to satisfy the following conditions and the requirements of reference standard RS-16:

(a) All occupied premises shall have potable water.- Every building intended for human habitation, occupancy, or use shall be provided with a supply of potable water.

(b) Sufficient water required.-Plumbing fixtures, devices, and appurtenances shall be supplied with water in sufficient volume and at pressures adequate to enable them to function properly. The pipes conveying the water shall be of sufficient size to provide the water required without undue pressure reduction and without undue noise under all normal conditions of use.

(c) Water conservation.-Plumbing shall be designed and adjusted to use the minimum quantity of water

consistent with proper performance and cleansing of the fixture or plumbing appurtenance.

(d) Safeguarding against explosion.-Devices for heating and storing water shall be designed, installed, and maintained to guard against rupture of the containing vessel through overheating.

*** (e) Connection to public water supply systems and to sanitary or combined sewer systems.**

**** Local Law 65-1996; For Excerpts from Local Law 7 of 1974, see end of Subchapter 1.***

(1) GENERAL.-

a. The water distribution system and system for conveying sewage from any building in which plumbing fixtures are installed shall be connected, respectively, to a public water main and a sanitary or combined sewer if either or both are available and, regarding the sewer, if the department determines that connection thereto is feasible. The department shall determine that connection is feasible if :

1. the sewer is of adequate capacity to receive all sewage flowing from the building;

2. the sewer is in adequate physical condition to receive such sewage;

3. no physical obstacles exist between the boundaries of the lot or tract of land on which the building is located and the sewer, which would make connection to the sewer impracticable;

4. the elevation of the sewer in relation to the lot or tract of land on which the building is located is such that conveyance of the sewage from the building to the sewer is not impracticable;

5. the sewer is located in the same drainage area as all or most of the lot or tract of land on which the building is located; and

6. no other factor reasonably related to the conveyance of sewage from the building to the sewer would make such connection impracticable or undesirable as a proper means of sewage disposal.

b. Where a public water main is not available, an individual potable water supply shall be provided, and where neither a sanitary nor a combined sewer is available to which the department determines that connection is feasible, a private sewer or private sewage disposal system shall be provided. All such private systems shall be provided subject to the approval of the commissioner and of any other agency or agencies having jurisdiction, and constructed in accordance with the requirements of reference standard RS-16 and, with respect to the construction of individual on site private sewage disposal systems, in accordance with the specifications and standards prescribed by the commissioner, in consultation with the commissioner of environmental protection, pursuant to section six hundred forty three of the charter.

c. Extensions of public sewers and water mains shall be made in accordance with the regulations of the department of environmental protection.

(2) SYSTEMS AVAILABLE.-

a. A public water main, and a sanitary or combined sewer for the purpose of conveying sewage, shall be deemed available to a building in which plumbing fixtures are installed, except to a one- or two-family dwelling, if a property line of such building is within five hundred feet (measured along a street, alley, or right-of-way) of the public water supply system or the sewer. The connection shall be made in accordance with the applicable standards of the department of environmental protection.

b. A public water supply system, and a sanitary or combined sewer for the purpose of conveying sewage, shall be deemed available to a one- and two-family dwelling if a property line of such dwelling is within one hundred feet (measured along a street, alley, or right-of-way) of the public water supply system or the sewer. The connection shall be made in accordance with the applicable standards of the department of environmental protection.

c. Where two or more one- or two-family dwellings are to be constructed on a tract of land, or where a substantial improvement of any other type of building or buildings is contemplated on a tract of land, the public water supply system and/or the sanitary or combined sewer may be declared available thereto by the agencies having jurisdiction thereon even though the distances specified in subparagraphs (a) and (b) of this paragraph are exceeded.

(f) Well water systems.-No well or individual water supply may be installed for any purpose without the approval of the commissioner and of the department of health and the department of environmental protection.

(g) Design and maintenance of system for conveying sewage from building.-The system for conveying sewage from the building shall be designed, constructed and maintained to guard against fouling, deposit of solids, and clogging, and shall be provided with adequate cleanouts so arranged that the pipes may be readily cleaned.

(h) Exclusion of certain substances from the plumbing system.-

(1) DETRIMENTAL OR DANGEROUS MATERIAL.-No person shall deposit, by any means, any of the following into the building drainage system or sewer: ashes, cinders, rags, flammable, poisonous, or explosive liquids, gases, oils, grease, or any other material that could obstruct, damage, or overload such system, or that could interfere with the normal operation of the sewage treatment processes.

(2) INDUSTRIAL WASTES.-Wastes from hospitals, chemical plants, laundries, abattoirs, or any other industrial wastes that could be detrimental to the public sewer or public health, shall be treated before such

wastes are discharged into the public sewer. At the time of the filing of plumbing plans for any hospital, chemical plant, laundry, abattoir, or any other industrial structure, a statement shall be filed with the commissioner indicating the substances, ingredients, or matter, that will be discharged into the sewer, together with written approval of the department of environmental protection for the method of treatment of said substance, ingredient or matter, before it is discharged into the public sewer.

(i) Prevention of Contamination.-Plumbing fixtures, devices, and appliances shall be provided with adequate protection to prevent contamination of food, water, sterile goods, and similar materials by backflow of sewage. The fixture, device, or appliance shall be connected indirectly with the building drainage system when necessary.

(j) Drainage below street level.-The drainage of all sanitary and storm water below the crown level of the street sewer, or below a level where backflow from the street sewer is possible, shall be conveyed to a sewage ejector and/or sump through a system of sub-house drains, and lifted into the street sewer or disposal system.

****(k) Disposal of storm water**.-Storm water falling or coming to rest on property on which new buildings or substantial horizontal enlargements are to be constructed, and on all streets and other paved areas constructed or altered in connection with the construction of such new buildings or substantial horizontal enlargements, shall be disposed of in accordance with the requirements of reference standard RS-16 and the rules and regulations of the department of environmental protection. No person providing a system for disposing of storm water, as required by this subdivision, shall in any way alter, relocate or affect any existing drainage system on the property, except in accordance with the provisions of section 19-146 of title nineteen of the administrative code. Except as otherwise permitted by this code, no person shall perform land contour work, as defined in section 19-146 of this code, which work causes storm water to flow across sidewalks or onto an adjacent property. For purposes of this subdivision, the term "substantial horizontal enlargement" shall have the meaning given such term in subdivision (a) of section P110.2 of reference standard RS-16.

** ***Local Law 103-1989.***

(l) Required plumbing fixtures.-Every dwelling unit in buildings classified in occupancy groups J-2 and J-3 shall have at least one water closet, one lavatory, one kitchen-type sink, and one bathtub or shower. All other buildings shall be equipped with the number and types of plumbing fixtures required by reference standard RS-16.

(m) Smooth surfaces required.-Plumbing fixtures shall be made of smooth, nonabsorbent material and shall be free from fouling surfaces.

(n) Location of fixtures.-

(1) LIGHT AND VENTILATION.-For light and ventilation requirements of rooms or spaces containing plumbing fixtures, see subchapter twelve of this chapter.

(2) LOCATION.-Piping, fixtures, or equipment shall be located so as not to interfere with the normal operation of windows, or doors and other exit openings.

(3) ACCESSIBILITY.-Plumbing fixtures shall be located so that they are readily accessible to the users.

(o) Liquid-seal traps required.-Each fixture directly connected to the drainage system shall be equipped with a liquid-seal trap, except as otherwise provided in this subchapter. The drainage system shall be designed to provide adequate air circulation in all pipes with no danger of siphonage, aspiration, or forcing of trap seals under conditions of ordinary use.

(p) Exhausting of foul air to outside.-Each vent terminal shall extend to the outdoor air and be located and installed so as to minimize the possibility of clogging and the return of foul air to the building.

(q) Materials and workmanship.-All materials and equipment used in the plumbing and gas systems shall be free from defects, and shall be designed, constructed, and installed so as to give satisfactory service for their expected life.

(r) Condemned equipment.-Any plumbing materials or equipment condemned by the commissioner because of wear, damage, defects, or sanitary hazards shall not be used or re-used for plumbing purposes.

(s) Prevention of sewer flooding.-Where a plumbing drainage system is subject to backflow of sewage from the public sewer, suitable provision shall be made to prevent its overflow in the building.

(t) Test of plumbing system.-The plumbing system shall be subjected to such tests as will readily disclose all leaks and defects in the work or in the material used.

(u) Proper maintenance.-Plumbing systems shall be maintained in a safe and serviceable condition from the standpoint of both operation and health.

(v) Protection of ground and surface water.-Sewage or other waste shall not be discharged into surface or subsurface water unless it has been discharged by a method subject to the approval of the commissioner and of the department of health and the department of environmental protection.

(w) Weather protection.-Water service piping shall be installed at least four feet below exterior grade, and building house sewers shall be installed at least three feet below exterior grade. Plumbing piping in exterior building walls shall be adequately protected against freezing by insulation or heat, or by both.

(x) Structural safety.-The structural safety of a

building shall not be affected or impaired in any way as a result of the installation, alteration, renovation, or replacement of a plumbing system or any part thereof. See subchapters nine, ten, eleven and nineteen of this chapter.

(y) Strains and stresses in pipes.-Piping shall be installed so as to prevent strains and stresses that would exceed the structural limitations of the pipe and so as to prevent deflection or deformation that would cause the system to malfunction. Provision shall be made for expansion and contraction and for structural settlement that might affect the piping.

(z) Installation limitations.-

(1) ELEVATOR SHAFTS.-No piping shall be installed in any elevator or counterweight hoistway.

(2) FIRE RATED CONSTRUCTION.-No plumbing or gas piping shall be installed in any construction required to have a fire resistance rating except in accordance with the provisions of subchapter five of this chapter.

(3) STAIR ENCLOSURES.-No piping of any kind, with the exception of piping required or permitted under subchapter seventeen of this chapter, shall be permitted within a stair enclosure.

(aa) Special flood hazard restrictions.-Within special flood areas and below the regulatory flood datum as described in article ten of subchapter four of this chapter, plumbing installations shall comply with the applicable provisions of reference standard RS 4-5.

***§[1600.7] 27-902 Use of nonconforming material or equipment**.-

(a) No person shall use or install any new or used plumbing material or equipment, unless it complies with the requirements set forth in this subchapter and reference standard RS-16.

(b) No person shall use any portable equipment that utilizes mercury to test the pressure of gas piping, drainage or vent systems.

****Local Law 17-2001.***

§[1600.8] 27-903 Fire protection.-Where pipes pass through construction required to have a fire-resistance rating, they shall comply with the requirement of section 27-343 of article five of subchapter five of this chapter.

§[1600.9] 27-904 Establishing gas supply.-It shall be unlawful for any utility company to supply gas to a building, place or premises in which new meters other than replacement are required until a certificate of approval of gas installation from the department of buildings is filed with such utility company. When new gas service piping has been installed it shall be locked-off by the utility either by locking the gas service line valve or by installing a locking device on the outside gas service line valve. The lock shall not be removed until the gas meter piping (other than utility owned) and gas distribution piping has been inspected and certified as required by the department of buildings as being ready for service.

§[1600.10] 27-905 Alterations to gas piping systems.-When alterations, extensions or repairs to existing gas meter piping or gas distribution piping requires the shut-off of gas flow to a building, the utility shall be notified by the owner or his or her authorized representative.

ARTICLE 2 WATER SUPPLY SYSTEMS

§[1601.1] 27-906 Public water supply.-

(a) Required capacity.-Where the required capacity of potable water supply is available from street water mains at the site, every building shall be supplied from such mains.

(b) Power pumps.-When power pumps are required in the water supply system of a building, they shall take their supply from the street water mains in the manner prescribed in reference standard RS-16.

§[1601.2] 27-907 Private water supply.-Every private source of potable water supply, other than a water supply company franchised by the city of New York, shall be subject to the approval of the commissioner; and every private source of non potable water supply shall be submitted to the commissioner for approval and recording.

§[1601.3] 27-908 Cross-connection of supplies and identification.-

(a) Cross-connection.-No person shall connect water piping supplied directly from street water mains to other sources; and no cross-connection shall be made between the potable water distribution system and any portion of waste or soil systems, or between the potable water distribution system and fixtures or devices that may contaminate, pollute, or otherwise render the water nonpotable.

(b) Identification.-Water supply systems not approved as potable shall be identified at each outlet with a warning sign stating that the water is unfit, and its use prohibited, for drinking purposes. Piping carrying potable water shall be identified and distinguished from water piping carrying nonpotable water by distinctive painting or markings as prescribed in reference standard RS-16.

(c) Construction.-The construction of water supply systems shall be in accordance with the requirements of reference standard RS-16.

ARTICLE 3 DRAINAGE SYSTEMS

***§[1602.1] 27-909 Permits**.-In addition to the permits required under provisions of subchapter one of this chapter, the following permits shall also be required.

(a) Permits for the installation of the building house sewer from the street line to, and including, the spur connection at the street sewer shall be obtained from the department of environmental protection, except that, in conjunction with the issuance of a permit for the construction or alteration of a structure within the curbline, the commissioner may issue a permit for connection with a sewer or drain.

(b) Permits for sidewalk and street openings shall be obtained from the department of transportation.

***Local Law 65-1996.**

***§[1602.2] 27-910 Individual sewage systems**. -[*sic*] (a) Where public sewers are deemed not available according to subdivision (e) of section 27-901 of article one of this subchapter, an individual on site private sewage disposal system shall be installed in accordance with the requirements of this subchapter. When public sewers are made available, the individual on site private sewage disposal system shall be abandoned in a manner prescribed by the commissioner, and the building house sewer shall be connected to the available public sewer within six months of the date of notification that the sewer has been accepted to receive flow by the agency or agencies having jurisdiction**.**

***Local Law 65-1996.**

§[1602.3] 27-911 Construction.-The construction of drainage systems shall be in accordance with the requirements of reference standard RS-16.

ARTICLE 4 HOSPITAL AND INSTITUTIONAL PLUMBING

§[1603.1] 27-912 Requirements.- Hospital and institutional plumbing shall be installed in accordance with all of the applicable requirements for plumbing and gas piping of this subchapter and in accordance with the specific modifications of reference standard RS-16.

ARTICLE 5 SWIMMING POOLS

§[1604.1] 27-913 Requirements.-All plumbing for swimming pools, including display pools and fountains, shall be installed in accordance with the requirements of this subchapter, the requirements of reference standard RS-16, and the requirements of the New York City health code.

§[1604.2] 27-914 Construction.-For requirements covering the general construction of swimming pools, the provisions of article sixteen* of subchapter seven of this chapter shall apply.

*_As enacted; "fifteen" probably intended._

§[1604.3] 27-915 Operation.-
No swimming pool regulated by the provisions of this code shall be operated without a permit from the department of health.

ARTICLE 6 EXISTING BUILDINGS AND INSTALLATIONS

§[1605.1] 27-916 General.-When alterations are made requiring the addition of two or more plumbing fixtures in an existing building, or when a building is remodeled for an extension in size or change in use in which plumbing, drainage, or gas piping work is involved, all the new work shall be made to conform to all the applicable sanitary requirements of this code and the affected portions of the system made adequate for the added load.

§[1605.2] 27-917 Existing soil and vent stacks.-

(a) When a new building is erected higher than an existing building, no operable windows or other wall openings shall be located closer than ten feet to an existing stack vent or vent stack on the lower building. Wherever necessary, the owner of the new building shall at his or her own expense and with the approval of the adjoining owner, offset the stack vent or vent stack to a distance ten feet or more from such windows or wall opening, or shall extend such stack vents or vent stacks to a height of at least three feet above the topmost opening.

(b) When the existing adjoining building is higher than the new building, all new soil, waste, or vent stacks of the new building shall be located at least ten feet from the common lot line, or shall be carried to a level above the higher existing roof, adequately supported and with the consent of the owners of both the new and existing structures.

§[1605.3] 27-918 Existing gas meter rooms.-Existing gas meter rooms shall comply with the provisions of section P 115.5(c) of the reference standard RS-16 no later than December first, nineteen hundred seventy-two.

ARTICLE 7 INSPECTION AND TESTS

***§[1606.1] 27-919 Inspection**.-Every new plumbing and gas piping system and every part of an existing system that has been altered, except for ordinary repairs, shall be inspected and tested to determine compliance with code requirements except that the

commissioner may promulgate rules authorizing a certification from a master plumber for minor work that was performed in accordance with applicable codes in lieu of the two day inspection notification requirement of section 27-920 of this article and the inspection reporting requirements of subdivision a of section 27-922 of this article. In no event shall such certification be allowed for any new installation, or any alteration to an existing gas piping system.

* ***Local Law 51-2001.***

§[1606.2] 27-920 Notification.-The holder of the plumbing permit shall give at least two days prior written notice to the commissioner that the plumbing work covered by the permit is ready for inspections and test.

§[1606.3] 27-921 Testing of plumbing and gas piping systems.-

(a) New, altered, extended, or repaired systems.-Every new plumbing and gas piping system and every part of an existing system that has been altered or repaired except for minor alterations and ordinary repairs, shall be tested as hereinafter prescribed to disclose leaks and defects. However, testing may be waived in the following cases:

(1) In any case that does not involve replacement, alteration, or relocation of any water supply, drainage, or vent piping.

(2) In any case where plumbing equipment may be set up temporarily for exhibition purposes.

(b) Representation at test.-

(1) Tests required by section 27-922 of this article shall be conducted in the presence of the commissioner or an authorized plumbing inspector of the department.

(2) The commissioner may also authorize such test to be witnessed by architects, engineers, master plumbers or representatives of utility companies, each of whom must be acceptable to the commissioner. Persons performing this function shall have had at least five (5) years experience in inspection and testing of gas piping systems, or hold a current master plumber's license. Such tests may be conducted without any verifying inspection or tests by members of the department, provided that verified statements and supporting inspectional and test reports are filed with the department within one working day of such tests.

(c) Exposure of work.-If any plumbing system or part thereof is enclosed before it has been inspected, tested, and accepted as prescribed in this subchapter, such system or part thereof shall be uncovered upon the direction of the commissioner.

(d) Retesting.-If, upon inspection and tests, any of the work fails to meet the test requirements, the necessary corrections shall be made before any reinspections or retests are conducted.

§[1606.4] 27-922 Requirements.-

(a) Drainage and vent systems.-

(1) ROUGH PLUMBING.-Except for outside leaders and perforated or open jointed drain tile (subsoil drains), the piping of plumbing drainage and venting systems shall be verified as to materials and shall be tested upon completion of the rough piping installation and proven to be watertight. The commissioner may require the removal of any cleanout plugs to ascertain that the prescribed pressure has been reached in all parts of the system.

a. Water Test.-A water test shall be applied to the drainage system either in its entirety or in sections after rough piping has been installed. If applied to the entire system, all openings in the piping, except the highest opening, shall be tightly closed and the system filled with water to the point of overflow. If the system is tested in sections, each opening, except the highest opening of the section under test, shall be tightly plugged and each section filled with water. No section shall be tested with less than a ten foot head of water. In testing successive sections, at least the upper ten feet of the following section shall be tested, so that no joint or pipe in the building (except the uppermost ten feet of the system) shall have been submitted to a test of less than ten foot head of water. The water shall be kept in the system or in the portion under test for a least fifteen minutes before inspection starts; the system shall then be tight at all points.

b. Air test.-An air test may be used only when permission for this type of test is obtained from the commissioner. The air test shall be made by attaching an air compressor testing apparatus to any suitable opening and, after closing all other inlets and outlets of the system, forcing air into the system until there is a uniform gauge pressure of * five psi. This pressure shall be held, without introducing additional air, for a period of at least fifteen minutes.

* ***Corrected by Local Law 17-2001.***

(2) FINISHED PLUMBING.-After the plumbing fixtures have been set and their traps filled with water, the entire drainage system shall be verified as to materials and shall be tested and proven gastight by either a smoke test or a peppermint test.

a. Smoke test.-The smoke test shall be made by filling all traps with water and then introducing into the entire system a pungent, thick smoke produced by one or more smoke machines. When the smoke appears at stack openings on the roof, these openings shall be closed and a pressure equivalent to a one inch water column shall be maintained for the period of the inspection.

b. Peppermint test.-The peppermint test shall be made by introducing two ounces of oil of peppermint into the roof vent terminal of every line or stack to be

tested. The oil of peppermint shall be followed at once by ten quarts of hot water (one hundred sixty degrees Fahrenheit or higher), whereupon all roof vent terminals shall be sealed. The detection of the odor of peppermint at any trap or other point in the system shall determine the location of any leaks. Persons who have come in contact with oil of peppermint shall be excluded from the test area.

(b) Building house sewer.-The building house sewer shall be tested by inserting a test plug at the point of connection with the street sewer before such connection is made. The building house sewer shall then be filled with water under a head of at least ten feet. The water level at the top of the test head of water shall not drop for at least fifteen minutes.

(c) Water systems.-Upon completion of a section of a water system or of the entire water system, the completed section or system shall be verified as to materials, and shall be tested and proven tight under a water pressure of at least twenty-five percent greater than the working pressure under which it is to be used. The water used for tests shall be obtained from a potable source of supply.

* **(d) Gas piping systems**.-Upon completion of the installation of a section of a gas system or of the entire gas system, and before appliances are connected thereto, the completed section or system shall be verified as to materials, and tested and proven tight as follows:

(1) Gas distribution piping:-

**a. Distribution pressures up to one-half psig. The completed piping is to be tested with a non-mercury gauge at a pressure of three pounds per square inch gauge (psig) for a minimum of thirty minutes.

b. Distribution pressures over one-half psig through three psig. The completed piping is to be tested at fifty psig for a minimum of thirty minutes.

c. Distribution pressures over three psig through fifteen psig. The completed piping is to be tested at one hundred psig for a minimum of one hour.

d. Distribution pressures above fifteen psig. The completed piping is to be tested to twice the maximum allowable operating pressure, but not less than one hundred psig, for a minimum of one hour.

(2) Meter piping shall be pressure tested in accordance with the requirements of the serving utility. These requirements shall be either the same as those for testing distribution piping in paragraph one of this subdivision, or if different, the piping shall be certified by the local utility as being tested in compliance with their requirements.

(3) Notwithstanding the above, all coated or wrapped pipe shall be pressure tested at a minimum of ninety psig.

For testing, the piping shall be filled with air or an inert gas, and the source of pressure shall be isolated before the pressure readings are made. All test duration time periods are to be measured after stabilization of testing medium. Fresh water may be used as the test medium only where the required test pressure exceeds one hundred psig.

**(4) The commissioner shall publish a list of non-mercury gauges certified by a nationally recognized testing lab or promulgate rules with standards for non-mercury gauges within one hundred and twenty days of the effective date of this paragraph.

Local Law 18-1992.

****Local Law 17-2001 .***

(e) Other piping systems.-All other piping systems shall be tested in accordance with the requirements prescribed in reference standard RS-16.

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SUBCHAPTER 17
FIRE ALARM, DETECTION AND EXTINGUISHING EQUIPMENT

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ARTICLE 1 GENERAL

§[1700.1] 27-923 Scope.-The provisions of this subchapter shall establish and control the minimum requirements for the design and installation of standpipe, sprinkler, fire alarm, and fire detection systems except for fire alarm systems in factory and mercantile buildings and where specific exemption is made in this code. Alterations or additions to existing systems shall comply with the requirements of this subchapter regardless of magnitude or cost.

§[1700.2] 27-924 Standards.-The provisions of reference standard RS-17 shall be part of this subchapter.

§[1700.3] 27-925 Definitions.-For definitions to be used in the interpretation of this subchapter, see subchapter two of this chapter.

§[1700.4] 27-926 Plans.-For the requirements governing the filing of plans and the work to be shown on plans, see subchapter one of this chapter.

§[1700.5] 27-927 Permits.- For the requirements governing equipment work permits, equipment use permits, see subchapter one of this chapter.

§[1700.6] 27-928 General requirements.-All systems of standpipes, sprinklers, fire alarms, and fire detectors and all component devices thereof, as required by this subchapter specifically and by subchapters four, five, seven and eight of this chapter shall be installed in accordance with the provisions of this subchapter.

§[1700.7] *27-929 Retroactive requirements.-The provisions of this subchapter shall apply retroactively for the specific occupancies indicated in subdivisions (j) and (s) of section 27-954 and paragraph ten of subdivision (a) of section 27-968 of this subchapter. An application noting compliance shall be required to be filed on or before April thirteenth, nineteen hundred seventy-nine; and installation shall be required on or before January thirteenth, nineteen hundred eighty, except as otherwise provided in this code.
Local Law 16-1987.

(a) The provisions of this article shall apply retroactively for the specific occupancies and spaces indicated in subdivisions (v), (w), and (y) of section 27-954 and subdivision (j) of section 27-972. Installation of all systems required by these sections shall be completed on or before April first, nineteen hundred eighty-seven.

*(b) Notwithstanding the provisions in subdivision a of this section, an application for a permit and approval of plans for the installation of fire alarm and signal systems as required under the provisions of article five of this subchapter in buildings classified in occupancy group J-1 shall be filed with the department on or before June thirtieth, nineteen hundred eighty-seven and such installation shall be completed on or before December thirty-first, nineteen hundred eighty-seven.

*(c) Notwithstanding any other provision of this subchapter, the requirement to install a system of automatic sprinklers shall apply retroactively to any space in a basement, cellar or other location below grade subject to the provisions of subdivision aa of section 27-954 of this code. Installation of such system of automatic spriklers shall be completed on or before April thirtienth, two thousand four.
Local Law 16-1987.

****§27-929.1 Retroactive requirements for office buildings one hundred feet or more in height.- (a) General requirements.- (1) Notwithstanding any other provision of this subchapter,** all office buildings one hundred feet or more in height and buildings classified in occupancy group E one hundred feet or more in height in existence on the effective date of this subdivision shall have a full system of automatic sprinklers installed in accordance with this subchapter. Reports relating to the installation of such sprinkler systems shall be filed in accordance with subdivision (b) of section 27-228.5 of this code and installation of such sprinkler systems shall be completed on or before July 1, 2019 or, if applicable, on or before a date specified by the commissioner pursuant to paragraph (2) of subdivision (b) of section 27-228.5 of this code.
(2) Exception.- Where an owner of a building or portion thereof subject to such retroactive requirement demonstrates to the satisfaction of the commissioner that the installation of sprinklers in a particular, limited portion of such building is not practicable, either due to structural conditions or because of designation as an interior landmark by the New York city landmarks preservation commission, the commissioner may waive such limited portions from the requirements of this section but may require additional fire safety measures to protect the health, safety and welfare of the public.
(3) Application to buildings with a full system of automatic sprinklers.- The provisions of this subdivision shall not apply to buildings in existence on the October 22, 2004 in which a full system of automatic sprinklers was installed or required to be installed pursuant to any other provision of law. Nothing in this subdivision shall be construed to limit the applicability of any other provision of this code requiring sprinklers in the buildings referred to herein.

(b) Converted buildings.- Notwithstanding the foregoing provisions, on and after October 22, 2004, no building

one hundred feet or more in height shall be converted to an office building or to a building classified in occupancy group E, whether or not application for such conversion is required to be filed with the department, unless a full system of automatic sprinklers is installed in such building in accordance with this subchapter prior to such conversion.

****Local Law 26-2004.***

ARTICLE 2 EXISTING BUILDINGS-FIRE EXTINGUISHING EQUIPMENT

§[1701.1] 27-930 Existing standpipes.-Standpipe systems existing on December sixth, nineteen hundred sixty-eight, shall not be required to be altered to conform to the provisions of this subchapter, except as follows:

(a) The existing installation shall meet the following minimum requirements:

(1) WATER SUPPLIES.-There shall be a reserve of at least two thousand five hundred gallons of water in a gravity or pressure tank for exclusive use of the standpipe; or there shall be a direct connection to a city main meeting the requirements of section 27-945 of article three of this subchapter.

(2) GRAVITY TANKS.-The gravity tank or tanks shall be filled by direct city water connection or by an automatic fill pump at a rate of at least forty-five gpm; and the bottom of the tank shall be located at least eleven feet six inches above the highest hose outlet under the main roof.

(3) HOSE AND HOSE VALVES.-Hose and hose valves shall be in good serviceable condition. Hose valve wheel handles shall be within six feet six inches of the floors or stair landings or the wheel handle may be within two feet horizontally from a stair tread and no more than six feet six inches vertically above the tread. Such hose may be omitted from hose racks in existing buildings in occupancy group J-2 provided that the provisions of paragraph five of subdivision (c) of section 27-942 of article three of this subchapter are complied with.

(4) FIRE DEPARTMENT CONNECTIONS.-
There shall be a three inch by three inch siamese hose connection with approved caps, painted red. The word "Standpipe" shall be cast in the body of the siamese connection or on metal plates that are secured to the riser or to the face of the building behind the siamese connection.

(5) NOZZLES.-A five-eighths inch smooth bore nozzle with two and one-half inch hose shall be provided where the hydrostatic pressure at the hose valve is less than ten psig.

(6) PROTECTION FROM FREEZING.-All parts

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of the standpipe system that are exposed to freezing shall be protected in accordance with the requirements of subdivision (a) of section 27-949 of article three of this subchapter.

(7) PRESSURE REDUCING VALVES.-Pressure reducing valves shall be provided as required by section 27-944 of article three of this subchapter.

(8) DRIP VALVES.-Drip valves shall be provided between the siamese connection and the check valve.

(b) When the building requires additional standpipe protection because of extension in height or in area, or the occupancy is changed to a use requiring additional protection, the new or altered part of the system shall comply with this subchapter.

§[1701.2] 27-931 Existing Sprinklers.-

(a) Required sprinklers.-Sprinkler systems and devices existing on December sixth, nineteen hundred sixty-eight shall not be required to be altered to conform to the provisions of this subchapter, except that when additional protection is required for a change in occupancy or for a building addition, the new or altered part of the system shall comply with this subchapter. Sprinklers in any extension or alteration shall be connected to, or extended from, the existing system or a separate water supply as provided in section 27-962 of article four of this subchapter. Additional heads shall not be connected to existing undersized piping.

(b) Voluntary sprinklers.-Sprinkler systems and devices existing on December sixth, nineteen hundred sixty-eight, but which are not required by this code, need not conform to the provisions of this subchapter, except that when a siamese hose connection is installed in the system, the siamese connection shall be installed and the entire system pressure tested as required by this subchapter.

ARTICLE 3 STANDPIPE REQUIREMENTS

§[1702.1] 27-932 When required.-

(a) Wet standpipe systems shall be installed:

(1) In all buildings or portions thereof exceeding six stories or seventy-five feet in height, except that open parking structures shall not require installation of a wet standpipe system unless they exceed ten parking levels or seventy-five feet in height.

(2) In all portions of buildings two or more stories in height that have a floor area of ten thousand square feet or more on any floor.

(b) Where standpipes are required by the height and area limitations of (a) of this section, a non-automatic or automatic dry standpipe system may be installed in lieu of the wet standpipe in all buildings classified in occupancy group G not over six stories or seventy-five feet in height. A dry standpipe system shall be installed in all open parking structures which exceed three parking levels and contain not more than ten parking levels.

(c) A standpipe system shall be installed in all buildings exceeding three stories in height that have an area exceeding seven thousand five hundred square feet on any floor and where a standpipe system is not otherwise required by the provisions of this subchapter. A non-automatic or automatic dry system may be used in lieu of the wet standpipe.

(d) The following buildings shall be exempt from the provisions of subdivisions (a), (b) and (c) of this section:

(1) Buildings classified in occupancy groups F, G, H, and J that do not exceed two stories or thirty feet in height and an area of twenty thousand square feet on any floor and are provided with hand or portable fire extinguishers as required by the fire department.

(2) Buildings classified in occupancy groups E, F, G, H, and J that require a wet standpipe as provided in paragraph two of subdivision (a) and subdivision (c) of this section but not exceeding six stories or seventy-five feet in height and that are equipped throughout with an automatic wet or dry sprinkler system connected to a central supervisory station, and such system complies with the provision of this subchapter.

§[1702.2] 27-933 Yard hydrant systems required.-Outdoor amusement and exhibition places, oil storage plants, lumber yards, trailer camps, industrial parks, and similar occupancies shall have yard hydrants installed so that the entire area may be reached by two hundred fifty feet of hose from a yard hydrant or a street hydrant. Single hydrant connection shall be at least in six inch I.P.S. Such hydrants shall be directly connected with city water main or private water main, or supplied from gravity tanks or pressure tanks, as provided in this subchapter.

(a) Where the area of such enclosure is more than forty thousand square feet and where the available city water service is less than that specified in paragraph one of subdivision (b) of section 27-945 of this article, the yard hydrant system shall be supplied as follows:

(1) A gravity tank of at least fifty thousand gallon capacity shall be provided and elevated so that the bottom of the tank is at least seventy-five feet above the highest grade elevation and at least twenty-five feet above the highest building in the area supplied by this tank.

(2) In lieu of paragraph one of this subdivision, there shall be provided a manual fire pump with a capacity of at least one thousand gpm, and a suction tank of at least fifty thousand gallon capacity. The suction tank shall be supplied through a six inch connection to the city water main controlled by an automatic ball float valve in the suction tank. A bypass shall be provided so that the pump may be fed directly from the city water main.

(3) The pump shall be located in a pump house at the street main side of the area or enclosure.

(4) Suction from a river or well may be permitted by the commissioner if the required quantity of reasonably clean fresh water may be obtained thereby, subject to the approvals of such other authorities as may have jurisdiction over the primary source of supply.

(b) The maximum distance between hydrants shall be two hundred fifty feet. At each yard hydrant, two hundred fifty feet of rubber lined hose, with a smooth bore of one and one-eighth inch approved play-pipe, shall be placed in a hose house painted red, and the words "Fire Hose" in six inch white letters shall be painted on the door.

(c) The approval of the fire department shall be obtained for location of any monitor nozzles that may be required in addition to yard hydrants. Not more than one monitor nozzle with remote control will be required for each forty thousand square feet of area or fraction thereof unless, in the fire department's opinion, an unusual hazard exists.

(d) Standpipes and sprinkler systems may be connected to a yard hydrant system in accordance with the requirements of this subchapter.

(e) Yard hydrant systems connected to city water mains shall be provided with post indicator valves located in an accessible position. Post indicator valves shall be locked open and be painted red.

(f) Fire extinguishing equipment, in addition to that prescribed by this section, shall be provided in accordance with requirements of chapter four of this title for oil storage plants, oil refineries, and other plants deemed by the fire commissioner to present unusual fire hazards, and also in rooms or spaces housing electrical equipment when such fire extinguishing equipment is deemed necessary.

§[1702.3] 27-934 Standpipe systems in structures being erected or demolished.-

(a) During construction or demolition of any structure for which a standpipe system is required, provision shall be made for the use of such standpipe by the fire department in accordance with the provisions of section 27-1014 of article one of subchapter nineteen and this subchapter.

(b) Temporary risers shall be at least four inches in diameter for structures less than four hundred fifty feet high and at least six inches in diameter for structures four hundred fifty feet high or more. There shall be as many risers as will be, or were, required for the permanent system. Each such riser shall be connected to a cross connection that is supplied through siamese hose connections at the street level, and shall be equipped on each floor with a two and one-half inch hose outlet valve. The installations shall be made so that each riser, cross-connection, and branch line can be plugged or capped when work is not being done on the system. The location of the siamese hose connection shall be placarded, kept free from obstruction, and identified by a red light.

§[1702.4] 27-935 Number of standpipe risers required.- The number of standpipe risers shall be such that every point of every floor can be reached by a twenty foot stream from a nozzle attached to not more than one hundred twenty-five feet of hose connected to a riser outlet valve.

§[1702.5] 27-936 Location of standpipe risers.-

(a) Standpipe risers and two and one-half inch angle hose valves shall be located within stairway enclosures. For additional requirements see section 27-343 of article five of subchapter five and subdivision (j) of section 27-375 of article five of subchapter six of this chapter. When stairway enclosures are not available within the distance limitations of section 27-935 of this article, the standpipe risers and two and one-half inch angle hose valves shall be located as near to the enclosure as practicable, subject to the approval of the commissioner. A metal sign with one inch lettering indicating the location of the outlet shall be provided in the stair enclosure on each floor where the riser is not located in the enclosure.

(b) No standpipe riser shall be placed in any shaft containing a gas or fuel pipeline.

§[1702.6] 27-937 Omission of standpipe service.-

(a) Standpipe outlets may be omitted in portions of first floors or basements that are completely separated from the entrance hall or enclosed stairways leading to the upper floors, provided portable fire extinguishers are installed, subject to the approval of the commissioner.

(b) Standpipe protection shall be omitted from transformer vaults, high-tension switchboard rooms, and other locations where the use of hose streams would be hazardous. Any space or room that houses equipment of such nature that the use of water would be ineffective in fighting the fire, or would be hazardous, shall have a conspicuous metal sign on each door opening on such space or room stating the nature of the use and the warning: "Use Npo Water."

§[1702.7] 27-938 Size of standpipe risers.-The size of standpipe risers shall be in accordance with Table 17-1.

TABLE 17-1 SIZE OF STANDPIPE RISERS

Height[1]	Minimum Riser Size Required (I.P.S.)
150 ft. or less……..	4 in.
Greater than 150 ft……..	6 in.

Note for Table 17-1:

[1] The height shall be that of the individual riser to the highest hose outlet (not including manifold outlets) from the level of the entrance floor at street level at which the riser begins.

§[1702.8] 27-939 Devices used in system.-No device, valve, pipe, or fitting may be used in a standpipe system unless such device, valve, pipe, or fitting has been accepted or approved in accordance with the provisions of section 27-135 of article eight of subchapter one of this chapter.

§[1702.9] 27-940 Siamese connections required.-Siamese connections shall be provided as follows:

(a) One siamese connection shall be provided for each three hundred feet of exterior building wall or fraction thereof facing upon each street or public space.

(b) Where buildings face upon two parallel streets or public spaces without an intersecting street or public space, one siamese shall be provided for each three hundred feet of exterior building wall or fraction thereof facing upon each such parallel street or public space.

(c) Where a building faces upon two intersecting streets or public spaces and the total length of the exterior building walls facing upon such streets or public spaces does not exceed three hundred feet only one siamese connection need be installed provided the siamese connection is located within fifteen feet of the corner and on the longer street.

(d) Where a building faces on three streets or public spaces, one siamese connection shall be provided for each three hundred feet of building wall or fraction thereof facing upon such streets or public spaces provided that at least one siamese connection is installed on each of the parallel streets or public spaces, and further provided that the siamese connections shall be located so that the distance between them does not exceed three hundred feet.

(e) Where a building faces upon four streets or public spaces, at least one siamese connection shall be provided on each street front or public space; however, only one siamese connection need be provided at the corner of two intersecting streets or public spaces if the siamese connection is located within fifteen feet of the corner and on the longer street or public space, and if the distances between siamese connections, in all cases, does not exceed three hundred feet.

(f) In any case where the exterior building walls of a building facing a street or public space is obstructed in part by another building, one siamese connection shall be provided for each clear three hundred feet of exterior building wall or fraction thereof facing upon such street or public space.

§[1702.10] 27-941 Cross connections.-

(a) Standpipe systems that include more than one riser shall have all risers cross-connected at, or below, the street entrance floor level, except as otherwise provided in this section.

(b) Standpipe systems in buildings required by the provisions of section 27-943 of this article to have one or more zones shall be so designed and installed that the risers supplied from each zone will be cross-connected below, or in, the story of the lowest hose outlets from the water source in each zone. Horizontal intermediate check valves shall be installed in the run of each riser continuing into a higher zone in such manner as to permit all upper zones of the system to be fed through one riser from the zone below and to prevent any lower zone of the system from being supplied from a zone above.

(c) Risers supplied by an upper level cross connection shall be provided with manual control valves or remote control valves, so arranged that risers supplied by the upper level cross connections may independently be shut off from the tank supplies.

(d) Cross connections shall be at least as large as the largest riser supplied by the cross connection. However, when supplying two, but not more than four four inch risers, the cross connection shall not be less than five inches. The cross connection shall not be less than six inches for all other riser combinations.

(e) Where there is no cellar, cross connections may be hung from the ceiling of the lowest story.

(f) Each siamese connection shall be connected to a riser or to a cross connection connecting other siamese hose connections or risers. The pipe from the siamese connection to the riser or cross connection shall be five inch I.P.S., except that a four inch pipe shall be sufficient when such pipe supplies a single four inch riser system. The pipe from the siamese connection shall be run as directly as practicable to the riser or cross connection.

§[1702.11] 27-942 Hose stations.-

(a) Hose outlet valves.-

(1) At the riser on each floor served by the riser and on the entrance floor above the riser control valve, a two and one-half inch hose outlet valve shall be provided for fire department use. Such hose outlet valve shall be readily accessible from a stairway landing or from a floor, and shall be located between five feet and six feet above the landing or floor.

(2) At the top of the highest riser, there shall be provided above the main roof level, a three-way manifold equipped with three two and one-half inch hose valves with hose valve caps. Where the manifold is located other than within a heated stair enclosure or bulkhead, the control valve shall be located in a horizontal run of piping below the roof.

(b) Location.-Hose stations shall be located at the standpipe risers located either within a stair enclosure or adjacent to the entrance to such enclosure as provided in section 27-936 of this article. When the

hose station is located outside the stair enclosure and the riser is within the stair enclosure, it shall be known as and referred to as "Auxiliary Hose Station."

(1) Hose stations shall be located so that every point in the floor area served by the hose station is within twenty feet of the end of the hose nozzle with the hose in its extended position. The maximum length of hose that shall be permitted at any hose station is one hundred twenty-five feet.

(c) Size, type and quality of hose.-Hose shall be provided on hose racks at each hose station as follows:

(1) Hose shall be one and one-half inch "flax-line" unlined linen hose or equivalent, factory coupled, in occupancy groups C, E, F, G, H, and J.

(2) Hose shall be two and one-half inch cotton rubber-line, or rubber hose or equivalent, factory coupled, in occupancy group A.

(3) Hose shall be two and one-half inch "flax-line" unlined linen hose or equivalent, factory coupled, for occupancy groups other than those in paragraphs one and two of this subdivision.

(4) Hose for auxiliary hose stations shall be one and one-half inch "flax-line" unlined hose or equivalent.

(5) Hose lines shall be made up of fifty foot factory coupled hose except that required hose lengths of less than fifty feet shall be in one section of the required length. Only one length less than fifty feet will be permitted where hose length is not of equal fifty foot increments, and no length shall be less than twenty-five feet.

(6) Hose may be omitted from hose racks in occupancy groups J-1 and J-2 whenever at least three open nozzles, two one and one-half inch, and two two and one-half inch spanner wrenches, two two and one-half by one and one-half inch non-swivel reducing couplings and three hundred seventy-five feet of one and one-half inch hose are stored and maintained in a locked cabinet located on the main entrance floor in a location near the standpipe riser enclosure subject to the approval of the commissioner, and hose valves are capped with a hose valve cap fastened to the valve with a chain. The person responsible for the maintenance of the standpipe system shall maintain on the premises a key for unlocking the storage cabinet. The key shall be kept in a location where it is readily available to authorized persons, but not available to the general public. A sign shall be placed on the storage cabinet indicating the location of the key. An additional labelled key shall be kept in a locked receptacle near the storage cabinet openable by a fire department standard key. Such receptacle shall be marked "For Fire Department Use Only." A metal sign shall be placed in each stair enclosure on the main entrance floor stating clearly where the storage cabinet is located.

(7) Hose may be omitted from hose racks for non-automatic dry standpipe systems provided that the hose outlet valves are capped with hose valve caps which are chained to the valves.

(d) Auxiliary hose stations.-

(1) Auxiliary hose stations may be installed in those occupancies where one and one-half inch hose is permitted as specified in subdivision (c) of this section.

(2) When auxiliary hose stations are installed, the required two and one-half inch hose valve at the riser shall be installed and the valve shall be equipped with a cap fastened to the valve with a chain.

§[1702.12] 27-943 Maximum pressures.-The standpipe system shall be zoned by the use of gravity tanks, automatic fire pumps, pressure tanks, and street pressure so that the maximum pressure at the inlet of any hose valve in the zone does not exceed one hundred sixty psig.

§[1702.13] 27-944 Pressure reducing valves.-

(a) When the normal hydrostatic pressure at a two and one-half inch hose outlet valve exceeds fifty-five psig, each valve shall be equipped with an adjustable type pressure reducer so that the pressure on the down-stream side will not exceed fifty psig when the discharge is at the rate of two hundred gpm from a one inch orifice nozzle attached to one hundred feet of two and one-half inch unlined hose.

(b) At one and one-half inch hose stations, an adjustable type of pressure reducer shall be provided on each hose outlet valve where the hydrostatic pressure exceeds eighty-five psig and shall be so adjusted that the pressure on the downstream side will not exceed eighty psig when seventy gpm is discharged from a one-half inch orifice nozzle attached to the length of hose to be provided at the hose station.

(c) The pressure reducing valve shall be permanently marked with the address of the premises in which it is installed and with the floor location and the setting for the location at which it is to be used.

§[1702.14] 27-945 Water supply for standpipe systems.-

(a) Primary water supply for standpipe systems.-Every standpipe system except nonautomatic dry standpipe systems shall have a primary water supply available at all times at every hose outlet, or made available automatically when the hose valve at any outlet is opened. Such primary water supply may be from one or more gravity tanks, from a pressure tank or tanks, from a direct connection to a city water main, from a connection to a private water main, or from an automatic fire pump.

(b) Method of providing water supply for standpipe systems.-Combinations of two or more of the following methods shall be used; in using such

combinations, the siamese connections shall be considered as a source of supply.

(1) Direct connections of standpipes to the city water system provided one of the following conditions is met:

a. A statement furnished by the bureau of water supply of the department of environmental protection indicates a pressure in the street main that is capable of maintaining a static pressure of at least fifteen psig. at the highest hose outlet between the hours of eight a.m. and five p.m. on a normal working day when a street level fire hydrant within two hundred fifty feet of the building is supplied from the same street main and is discharging at least five hundred gpm through a two and one-half inch hydrant butt.

b. For buildings forty feet or less in height with an area of not more than twenty thousand square feet per floor, there is a four inch direct connection to the street main that is fed two ways or there is a four inch direct connection to each of two street mains on two street fronts so installed that shutting off one service will not interfere with the supply of the other, and there is sufficient pressure in the street main to maintain a minimum static pressure of twenty-five psig. at the highest required hose outlet and the department of environmental protection states that the required street pressure is available.

(2) A private yard main when meeting the conditions of a direct water connection to the city water system.

(3) Gravity tanks provided:

a. The minimum quantity of water reserved for standpipe service is thirty-five hundred gallons in each standpipe zone.

b. The bottom of the tank shall be at least twenty-five feet above the highest hose outlet that such tank supplies, (except the roof manifold) and those hose outlets in a penthouse enclosing mechanical equipment, except as otherwise provided in subparagraph e of this paragraph.

c. Each zone of the standpipe system having three risers or more shall have a total fire reserve capacity of five thousand gallons or more from one or more gravity tanks for each zone.

d. Where a group of two or more buildings, connected or separated, is operated under a single control, a single gravity tank having a fire reserve capacity of at least five thousand gallons may be accepted as the primary water supply for the several standpipe systems of such group, provided a dead riser is carried from the bottom of the tank to an underground header or cross connection system and provided each building unit has a post indicator type control valve outside or an o.s. and y. control valve inside the building at a readily accessible location. The underground cross connection may not cross any public street without the approval of the city departments having jurisdiction.

e. Usable [*sic*] storage or office space on penthouse floors shall be provided with a riser outlet valve within the distances stated in section 27-935 of this article. In lieu of elevating the bottom of the gravity tank twenty-five feet above these outlets, an automatic fire pump with local supervisory alarms may be installed. The pump shall be capable of delivering two hundred fifty gpm. at a pressure of twenty-five psig. above the normal static pressure at the highest outlet supplied by the pump. The pump shall take suction from the gravity tank and be so arranged as to permit the siamese connection and any required manual fire pump to supply these outlets. No more than three stories of any penthouse or of penthouse and building stories combined, may be supplied by this method.

(4) Pressure tanks shall be acceptable as the primary supply to the system provided all of the following conditions are met:

a. A pressure tank, or tanks, so proportioned and located that a pressure of at least fifteen psig will be available at the nozzle of the highest required hose station, exclusive of roof outlets, when all the water has been discharged from the pressure tank.

b. The storage quantities stated for gravity tanks in subparagraphs a, c, and d of paragraph three of this subdivision are met and an additional volume equivalent to one-half of the required water storage space is provided for the required air.

c. An air compressor is provided with suitable automatic control and of sufficient capacity to build up air pressure of at least seventy-five psig. in the tank within three hours and to maintain thereafter an air pressure between seventy and eighty psig. The automatic control shall also maintain the proper air-to-water ratio in the pressure tank.

d. Pressure tanks shall be supplied with water through a fixed pipe, independent of the standpipe riser and at least two inches in size. The water supply and connection shall be capable of supplying the tank at a rate of at least sixty-five gpm without reducing the pressure in the tank. The tank shall have a fixed water level plate on the end opposite the gauge glass, or other equivalent indicating device.

(5) An automatic fire pump shall be acceptable as the primary supply to the system provided:

a. The building is three hundred feet high or less, or if the building is higher than three hundred feet, the automatic fire pump is used only for the lower three hundred feet. The zones above three hundred feet shall be supplied by either a gravity tank conforming to paragraph three of subdivision (b) of this section or a pressure tank conforming to paragraph four of

subdivision (b) of this section and in addition shall be supplied by the manual fire pump required by section 27-946 of this article.

b. The automatic fire pump supplying the system or section has a capacity of at least five hundred gpm with a discharge pressure of at least twenty-five but not exceeding seventy psig (above the normal) static pressure at the highest hose outlet within the zone supplied by the pump plus the frictional resistance from the pump to the outlet at a flow of five hundred gpm.

c. The electrical power to the pump is connected to the street side of the building service switch.

(c) High and low risers and cross connections in standpipe systems.-When tanks are used for the primary water supply, the standpipe systems may use separate riser systems serving, respectively, low and high parts of the building. Separate gravity tanks or pressure tanks may supply each zone, but in every case the standpipe system shall be so designed that every hose outlet of the entire system can be supplied through the required cross connections from every siamese connection and from every manually operated fire pump located at or below the street level.

(d) Use of standpipe riser for sprinkler system water supply.-Standpipe risers may be used to supply water to sprinklers in buildings classified in occupancy group E, one hundred feet or more in height, and in existing office buildings, one hundred feet or more in height, in accordance with applicable provisions of this subchapter and reference standards RS 17-1 and RS 17-2.

§[1702.15] 27-946 Fire pumps.-

(a) Additional water supply.-Additional water supply shall be provided for standpipes in buildings over three hundred feet high. The primary water supply to the standpipe system shall be supplemented by one or more manually operated fire pumps as follows:

(1) Standpipe systems in buildings more than three hundred feet high shall have at least one seven hundred fifty gpm pump or two five hundred gpm pumps. Pumps shall be capable of delivering their rated capacity at a pressure of fifty psig above the normal static pressure determined from the highest hose outlet (except the roof manifold) in the building plus the frictional resistance through the pipe from the pump to the outlet.

(2) Where a group of two or more buildings, whether connected or separated, are operated under a single ownership and one or more buildings exceed three hundred feet in height, one fire pump shall be accepted as the supplemental supply for the group. The pump shall be installed in the building where the maintenance personnel are located, and a metal sign with one inch lettering shall be installed in each building at all of the hose outlets on the entrance floor indicating the location of the fire pump.

(b) Standpipe pump rooms and location.-

(1) Fire pumps shall be installed at the entrance floor level or below, in rooms enclosed by noncombustible construction having a two hour fire-resistance rating and that are adequately heated, ventilated, lighted, and drained. The pump room shall have access to the street level by a direct opening to a street or a court, or by a passageway or stairway having a fire-resistance rating of at least two hours.

(2) No person shall install other machinery or mechanical equipment in a fire pump room, unless the building is of construction class IA, IB, or IC.

**(3) No person shall place or install any equipment containing a refrigerant classified in groups A1, A2, A3, B1, B2 or B3 in subchapter thirteen of this chapter, or place or install gas piping or gas consuming devices or any other equipment within any space housing a fire pump that would create a hazardous condition.

(c) Power supply for standpipe fire pumps.-The type of fire pump and prime mover used in a standpipe system shall be suitable for the required service in a standpipe system provided for fire department use. If the prime mover employs any form of power other than an electric current supplied by a public utility, the use thereof shall be subject to the approval of the commissioner. Electrical power to the motor shall be taken from the street side of the house service switch.

(d) Combined use of fire pumps for standpipe and automatic sprinkler systems.-A fire pump that furnishes the required auxiliary water supply either to a standpipe system or to an automatic sprinkler system shall be accepted as furnishing the corresponding water supply to the other system if such pump is in the same premises, provided that in every such case of combined use, suitable relief and shutoff valves shall be installed so as to prevent the water pressure on the automatic sprinkler system resulting from any required operation of the pump for the standpipe system from becoming greater than one hundred seventy-five psig.

****Local Law 32-2004.***

§[1702.16] *27-947 Direct connections of standpipes to the public water system.-

(a) Control valve.-Each service directly supplying a standpipe system or a fire pump shall be equipped with a control valve located under the sidewalk in a flush sidewalk box located within two feet of the street line, or in such other locations as may be approved by the department of environmental protection. The purpose of each such control valve shall be clearly indicated by the words "Standpipe Supply Control," cast in the cover of such flush sidewalk box or, in lieu thereof, a metal sign with one inch lettering shall be located on the exterior building wall indicating the use and location of the valve.

(b) Water supply to standpipe fire pumps.-

(1) Any required manual or automatic fire pump shall draw from two independent street water mains in different streets, except that: (i) any manual or automatic fire pump serving a building classified in occupancy group J-2 that is fully protected by a system of automatic sprinklers may draw from a single water main; and (ii) an automatic fire pump may draw from a single water main if augmented by a suction tank or tanks, and if the valves at the meter and pump are provided with tamper switches that are wired to an approved central station of an operating fire alarm company. Where two services are installed, one service from the street water main shall be run directly to the pump, and the other service may be used for domestic water supply. The connection from water to the mains to the pumps shall be at least six inch pipe size and shall be flushed before connection is made to the system. Connections shall be in accordance with subchapter sixteen of this chapter.

(2) In the event that two separate and distinct water mains are not available as a supply or the street mains cannot produce the required supply, there shall be provided a suction tank, or tanks, suitably located and of sufficient capacity to furnish the fire pump with at least a one-half hour supply at the rated capacity of such pump. Suction tanks shall be filled by a six inch connection to the water main, controlled by an automatic ball float valve in the suction tank. A six inch bypass shall be provided so that pumps may be fed directly from the street water main.

(3) When a water service supplies both the domestic service and the manual fire pump, a remote control valve shall be placed on the domestic service connection at the point where such connection is taken from the city supply or service main. Such remote control valve shall be controlled from a point near the pump control panel. In lieu of a remote control valve, a manually operated valve may be installed to shut off the entire domestic water supply to the building, provided such valve is located in the fire pump room and is properly tagged for identification.

Local Law 10-1999.

§[1702.17] 27-948 Installation of private fire hydrants.-

(a) When buildings are not required to be provided with a standpipe system, at least one entrance to the building shall be located within two hundred fifty feet of a street hydrant; or, a private hydrant of the same type as the city hydrant connected to the street water main shall be provided within two hundred fifty feet of entrance. The private hydrant shall be supplied by at least an eight inch pipe, and the domestic water supply may be connected to this private supply provided a shut-off valve is installed in a curb box in the domestic supply within six feet of the hydrant shutoff valve.

§[1702.18] 27-949 Protection of standpipe system.-

(a) All parts of the standpipe systems that may be exposed to frost shall be protected from freezing by any one of the following methods:

(1) The piping shall be frostproofed with insulation having a thermal conductance of 0.1 Btu/hr. per square foot of surface per degree F at a mean temperature of seventy to seventy-five degrees F. Insulation shall be protected to prevent water infiltration, and when exposed to the weather the insulation shall be covered with a forty-five pound roofing felt jacket or equivalent.

(2) Steam or electric tracers may be used in conjunction with the insulation.

(b) Tanks subject to freezing temperatures shall be protected.

§[1702.19] 27-950 Standards for installation.- Details for installation, components, sizing valves, fittings, protection against freezing, etc., for standpipe systems and related equipment shall be in accordance with reference standard RS 17-1.

§[1702.20] 27-951 Inspections and tests.-

(a) Inspections.-Every new system and every part of an existing system that is altered, extended, renovated, or repaired, except for ordinary repairs, shall comply with the applicable requirements of this subchapter.

(b) Notification.-Advance notification of tests and inspections required by this section shall be given to the commissioner.

(c) Representation at test.-Tests required by this section shall be conducted in the presence of the commissioner or his or her authorized representative, or in lieu thereof, the commissioner may accept a signed statement of an architect or engineer, whose name is submitted with the notification in subdivision (b) of this section, declaring that he or she has witnessed the tests and that the standpipe system meets the requirements of this code. If a representative of the commissioner does not appear within two days after receipt of such report by the commissioner, the report shall be deemed to be accepted by the commissioner.

(d) Testing equipment required.-All equipment, material, and labor required for testing a system or part thereof shall be furnished by, and at the expense of, the person responsible for installing the work.

(e) Testing of system.-Systems may be tested in sections, or parts, in accordance with the requirements of this subchapter.

(f) Acceptance.-Before the acceptance of such system, each system shall be subjected to the tests required by this section.

(g) Standpipe system tests.-

(1) PRESSURE TESTS.-

a. The test shall demonstrate that the system will sustain a hydrostatic pressure of at least one hundred psig, and at least three hundred psig at the siamese connection, for a period of at least one hour at the topmost hose outlet and at the lowest fire pump supply connection to the system. In buildings not exceeding three stories or forty feet in height, the test pressures need not be more than fifty psig. in excess of the normal hydrostatic pressures at the topmost hose outlet, and this pressure must be maintained for a period of at least one hour.

b. Pressure tanks shall be tested to demonstrate that they will sustain a hydrostatic pressure of at least one hundred fifty percent of the normal maximum required operating pressure for a period of at least one hour.

(2) FLOW TEST.-The system shall be flow tested to determine that water is available at the top outlet of each riser, the lowest outlet in each riser, and through each siamese connection. The system shall be flushed to remove all foreign matter from the system. Flow shall be through at least a two and one-half inch hose without nozzle at each one of the above mentioned locations at separate times.

(3) ALTERATION TESTS.-When alterations, additions, or repairs are made to a standpipe system, the entire system shall be subjected to a hydrostatic test pressure of at least fifty psig at the highest hose outlet, and in addition, a flow test shall be made as stated in paragraph two of this subdivision through the new or altered portion of the system.

(h) Pump tests.-

(1) Fire pumps shall be tested at the factory, and a certified test curve shall be furnished with each pump.

(2) Pumps shall be tested after installation to ascertain that the pump is supplying its rated capacity at the highest required hose outlet or through the roof manifold. The test shall be performed as follows:

a. At least fifty feet of approved two and one-half inch rubber lined hose equipped with a one and one-eighth inch nozzle shall be connected to the highest two and one-half inch hose outlet valve. One of these assemblies shall be connected in parallel for each two hundred fifty gpm of rated pump capacity.

b. The nozzle or nozzles of the hose assembly shall discharge at, or above, the highest required hose outlet or through a manifold.

c. Pilot tube gauge readings shall be taken at each nozzle to determine that the required pump capacity is being discharged.

d. For manually operated fire pumps, the suction and discharge pressures shall be recorded for each step or pump speed. The pump rpm electrical current, and voltage readings shall be recorded with the specific discharge pressure for each supply condition.

e. Automatic fire pumps shall be tested to ascertain that all of the automatic controls are in good working order.

f. All of the above readings shall be noted on the required standpipe diagram or a framed chart, which shall be mounted in a visible location near the pump control panel.

g. When pumps are supplied by two independent services, the test shall be conducted from each service independent of the other and, in addition, with both services supplying the pump.

(i) Test equipment for fire pumps.-

(1) For every fire pump installation, there shall be provided for test purposes at least three fifty foot lengths of approved two and one-half inch rubber lined fire hose. Hose shall be hung in the pump room or other convenient location.

(2) Three two and one-half inch by one and one-eighth inch nozzles, three spanner wrenches, and twelve washers shall be stored with the required hose.

§[1702.21] 27-952 Standpipe signal systems.-
Standpipe signal systems shall be provided in accordance with section 27-974 of article five of this subchapter.

§[1702.22] 27-953 Elevators for fire department use.-
Elevators for fire department use shall be provided as required by section 27-989 of article one of subchapter eighteen.

ARTICLE 4 AUTOMATIC SPRINKLER REQUIREMENTS

§[1703.1] * 27-954 Required sprinklers.-A system of automatic sprinklers shall be provided in the areas listed in this section and as required in subchapters four through eight of this chapter. A summary of sprinkler requirements is given in Table 17-2.

(a) Buildings classified in high hazard occupancy group A.

(b) Spaces classified in high hazard occupancy group A.

(c) Buildings classified in storage occupancy group B-1 exceeding one thousand square feet in floor area or seventy-five feet or more in height, except as modified under subdivisions a, b, and c of section 27-455 of article ten of subchapter seven of this code.

(d) Spaces classified in storage occupancy group B-1 exceeding five hundred square feet in floor area, except as modified under subdivisions a, b, and c of section 27-455 of article ten of subchapter seven of this code.

(1) Such storage spaces less than five hundred square feet in area shall install a system of automatic sprinklers, when required by the commissioner or the fire commissioner.

(e) Buildings and spaces classified in storage occupancy group B-2 exceeding five thousand square feet in floor area, or seventy-five feet or more in height, except as modified under subdivisions a, b, and c of section 27-455 of article ten of subchapter seven of this code.

(f) Spaces in high rise buildings classified in mercantile occupancy group C, spaces classified in mercantile occupancy group C exceeding seventy-five hundred square feet in floor area or with an unenclosed stair or escalator between any two or more floors.

(g) Buildings classified in industrial occupancy group D when required by section two hundred eighty of the labor law or when seventy-five feet or more in height.

(h) Spaces classified in industrial occupancy group D-1 exceeding seventy-five hundred square feet, in floor area excluding heliports.

(i) Buildings classified in occupancy group E, one hundred feet or more in height having air-conditioning and/or mechanical ventilation systems that serve more than the floor in which the equipment is located, and on or before January eighteenth, nineteen hundred seventy-six, in existing office buildings one hundred feet or more in height having such systems, showroom spaces exceeding seventy-five hundred square feet in area located more than forty feet above curb level. The sprinkler system may be connected to the domestic water supply and/or the standpipe risers. Where connected to a standpipe riser, provision shall be made to prevent excessive pressure on the sprinkler heads. If such work is not completed within on or before July eighteenth, nineteen hundred seventy-four, the owner shall submit a statement to the commissioner, with a copy to the fire commissioner, setting forth a plan and time schedule for the performance of the work and completion within the prescribed time. Such plan and schedule shall be subject to the approval of the commissioner. Failure to comply with the provisions of this subdivision, or to perform the work in accordance with the time schedule, as approved by the commissioner, shall constitute a violation.

(j) Dressing rooms and property rooms used in conjunction with all places of assembly, except for F-1B places of assembly not providing live entertainment.

(k) Corridors and exit passageways of buildings classified in institutional occupancy group H where the building or building section is not otherwise required to be fully sprinklered as provided in subchapter four. Patient rooms in H-2 occupancies shall be protected with smoke detectors complying with provisions of section 27-955 of this article when not required to be sprinklered by the provisions of subchapters four through seven.

(l) Regardless of occupancy group classification, any story above grade that cannot be ventilated by at least twenty square feet of free openable area and the first story below grade when it cannot be ventilated by at least thirty-five square feet of openable area per ten thousand cubic feet of volume. Such ventilation shall be provided by operable* windows or other natural ventilation sources complying with section 27-749 of article six of subchapter twelve of this chapter. All other stories below grade shall be sprinklered. Sprinklers may be omitted in toilets, shower rooms, stairs, and mechanical and electrical equipment rooms.

As enacted but "openable" probably intended.

For purposes of this subdivision fixed windows may be considered as "openable" (may be broken inward) if they are not more than one hundred feet above grade, or fifteen feet below grade; or if they are located within six feet of an accessible roof or setback; or if they are located within six feet of an operable window having at least three foot by three foot openings.

(1) Buildings classified in occupancy group J-2 with not more than three dwelling units and buildings classified in occupancy group J-3 shall be exempt from this provision provided all spaces classified in storage occupancy group B-2 exceeding one thousand square feet have been sprinklered in accordance with the requirements of this subchapter.

*(m) Rubbish chutes, laundry chutes, and chutes for similar uses. Sprinklers, protected from damage, shall be provided in accordance with reference standard RS 17-2, RS 17-2A, or RS 17-2B, as applicable.

Local Law 10-1999.

(n) Soiled linen collection and sorting areas.

(o) Workshops exceeding one hundred square feet except in one-and two-family dwellings.

(p) Refuse collection and disposal areas.

(q) Drying area of laundries or similar spaces in which two or more clothes drying machines are installed. Sprinklers to be spaced to cover area five feet in front, rear, and sides of machines.

(r) Sprinklers for cooling towers, where required by subchapter five of this chapter, shall be either a dry pipe or deluge system designed in accordance with the provisions of reference standard RS 17-4.

(s) (1) F-4 places of assembly used as cabarets.

(2) Stages within F-1a, F-1b, F-3 or F-4 occupancies providing live entertainment at anytime as set forth in subchapter eight of this chapter.

*(t) Buildings classified in occupancy group J-1, buildings classified in occupancy group J-2 with four or more dwelling units, spaces classified in occupancy group J-1, and spaces classified in occupancy group J-2 with four or more dwelling units.

(u) Places of assembly located within a building classified in occupancy group J-1.

*TABLE 17-2 SUMMARY OF SPRINKLER REQUIREMENTS

	Automatic Sources Required	Partial System Permit-ted	Connection to Domestic Permitted	Alternate Permitted (§27-955)	Siamese Required (§27-959)	Central[a] Station Required (§27-955) (§27-967)	Water[b] Flow Alarm Required (§27-957)	Automatic Dry Sprinkler Permitted (§5212 of RS-17)	Dry Non-automatic Sprinkler Permitted[c]
High Hazard Bldg. — Group A (§27-954(a))	2	No	No §27-961(c)	No	Yes	None[a]	Yes	Yes	No
High Hazard Spaces — Group A (§27-954(b))[b]	1	Yes	No §27-961(c)	No	§27-959 (a)(3) If over 36 heads in a fire section	None[a]	Yes If over 36 heads in a fire section	Yes	No
Storage Occupancy Bldg. — Group B1 (§27-954(c))	1	No	No §27-961(c)	No	Yes	None[a]	Yes	Yes	No
**Storage Occupancy Spaces — Group B1 (§27-954(d)) And Permitted Below Grade Flammable/Combustible Storage Spaces in Mercantile Establishments (§27-954(aa)	1	Yes	Yes [§27-961(c)] §27-962(c)	No	§27-959 (a)(3) If over 36 heads in a fire section	None[a]	Yes[b] If over 36 heads in a fire section	Yes	No
Storage Occupancy Spaces — Group B2 (§27-954(e))	1	Yes	No	No	§27-959 (a)(3) If over 36 heads in a fire section	None[a]	Yes[b], If over 36 heads in a fire section	Yes	No
Mercantile Occupancy Spaces — Groups C Exceeding 7,500 sq. ft. (§27-954(f))	2 sources if exceeding 20,000 sq. ft. 1 source if not more than 20,000 sq. ft.	No	No	No	Yes	None[a]	Yes	Yes	No
Industrial Occupancy Bldg.— Group D-1, When required by Labor Law (§27-954(g))	1 source if not hazardous occupancy	No	No	No	Yes	None[a]	Yes	Yes	No
Industrial Occupancy Spaces—Group D-1, exceeding 7,500 sq. ft. (§27-954(h))	1	No	No	No	Yes	None[a]	Yes	Yes	No
Business Occupancy Spaces— Group E Showrooms when Required by (§27-954(i))	1	Yes	Yes and/ or Stand-pipe Riser	No	Yes	None[a]	Yes	Yes	No
Assembly Occupancy Spaces— Group F-1[a] (§27-954(j))	1	Yes	Yes	No	§27-959 (a)(3) If over 36 heads in a fire section	None[a]	Yes[b]	No	No

Table 17-2 SUMMARY OF SPRINKLER REQUIREMENTS (continued)

Institutional Occupancy Group H — Corridors and Exit Passageway (§27-954(k))	1	Yes	Yes	No	§27-959 (a)(3) If over 36 heads in a fire section	None[a]	Yes	No	No
Unventilated Areas Above or Below Grade (§27-954(l))[d]	1	Yes	Yes	No	§27-959 (a)(3) If over 36 heads in a fire section	None[a]	§27-962(e)(8)	Yes	No
Rubbish—Laundry and Similar Chutes (§27-954(m))[d,e]	1	Yes	Yes	No	No	Yes[a]	None	Yes	No
Soiled Linen—Collection and Sorting Area (§27-954(n))	1	Yes	Yes	No	§27-959 (a)(3) If over 36 heads in a fire section	None[a]	Yes §27-962(e)(8)	Yes	No
Workshops (§27-954(o))[d]	1	Yes	Yes	Yes	§27-959 (a)(3) If over 36 heads in a fire section	Yes If smoke detector [*sic*] is used in lieu of sprinkler	Yes §27-962(e)(8)	Yes	No
Refuse Collection and Disposal Areas (§27-954(p))	1	Yes	Yes in Occupancy Groups E, G, J	No	§27-959 (a)(3) If over 36 heads in a fire section	None[a]	Yes §27-962(e)(8)	Yes	No
Drying Areas—Laundries or Similar Spaces (§27-954(q))[d]	1	Yes	Yes in Occupancy Groups E,G, J	Yes	§27-959 (a)(3) If over 36 heads in a fire section	Yes If smoke detector [*sic*] is used in lieu of sprinkler	Yes §27-962(e)(8)	No	No
Cooling Towers (§27-954(r))	1	No	Yes	No	No	None[a]	Yes	Yes	No
Building and Spaces in Residential Occupancy Group J-1 (§27-954(t))	1	No	No[f]	No	Yes, exept as provided in §27-959(a)(3)	No	Yes	No	No
Buildings and Spaces in Residential Occupancy Group J-2 with 4 or more Dwelling Units and not exceeding Six Stories or 75 Feet in Height (§27-954(t))	1	No	Yes[g]	No	Yes, exept as provided in §27-959(a)(1) and §27-959(a)(5)	No	Yes	No	No
Buildings and Spaces in Residential Occupancy Group J-2 with 4 or more Dwelling Units and Exceeding Six Stories or 75 Feet in Height (§27-954(t))	1	No	No[h]	No	Yes, exept as provided in §27-959(a)(3)	No	Yes if over 36 heads	No	No

Notes for Table 17-2:

a. Central Station Supervision required only when booster pump is provided under §27-964 or when non automatic sprinkler [*sic*] is permitted by the commissioner.

b. Water flow alarms required when more than 36 heads are installed in a fire section or fire area.

c. Only when permitted by the commissioner (§27-967(c)).

d. See §27-954(w) for requirements pertaining to these spaces located in a building classified in occupancy group J-1.

e. See section 4-4.8 of reference standard RS 17-2.

f. Except as provided in reference standard RS 17-2A.

g. Notwithstanding section 27-962(i) of this chapter.

h. Except as provided in section 27-962(i) of this chapter.

Amended by Local Law 10-1999.

****Amended by Local Law 26-2002***

(v) Catering establishments and banquet halls with an occupant load of three hundred or more persons.

*(w) In all existing buildings classified in occupancy group J-1 (except for "residential hotels," as such term is defined by the commissioner pursuant to rules,) all spaces listed in subdivisions (c), (d), (l), (m), (n), (o), (p) and (q) of this section, except that an approved smoke detection alarm system may be installed in those locations described under subdivisions (o) and (q) in lieu of sprinklers other than in those locations where sprinklers are required pursuant to section 27-123.2 of this chapter. Such smoke detection system shall be of the supervisory type connected to an approved central station.

(x) High rise buildings classified in occupancy group F-1, F-3, F-4, or G, or any spaces classified in such occupancy groups located within a high rise building or building section more than seventy-five feet above curb level.

(y) Spaces in existing high rise buildings classified in occupancy group C and any space in an existing building classified in occupancy group C with an unenclosed stair or escalator between any two or more floors.

(z) Notwithstanding the provisions of subdivision i of this section, high rise buildings classified in occupancy group E and low rise buildings classified in occupancy group E with a total gross floor area of one hundred thousand square feet or more.

**(aa) Regardless of occupancy group classification, in each basement, cellar or other location below grade, regardless of the floor area of such space, in a ny mercantile establishment in which the fire commissioner permits the storage of flammable or combustible mixtures pursuant to sections 27-4066, 27-4070 or 27-4094 of this code, except that, where such flammable or combustible mixtures are stored in such basement, cellar or other location below grade, in a room or other area that is segregated, vertically and horizontally, from surrounding spaces by a fire separation of not less than a two-hour fire-resistance rating, such system of automatic sprinklers shall be required only within such room or other area. Such system of automatic sprinklers shall conform only within such room or other area. Such system of automatic sprinklers shall conform to the requirements for automatic sprinklers for spaces classified in storage occupancy group B-1 pursuant to subdivision d of this section.

Local Law 10-1999.

****Local Law 16-1987***

§[1703.2] *27-955 Smoke detector alternate.-An approved smoke detection alarm system may be used in lieu of sprinklers in those locations described under in subdivisions (o) and (q) of section 27-954 of this article, except in buildings or spaces classified in occupancy group J-1 or J-2. Such smoke detection system shall be of the supervisory type connected to an approved central station.

Local Law 10-1999.

§[1703.3] *27-956 Standard for installation of sprinklers. (a) Except as herein provided in subdivision (b) of this section, the installation, components, sizing, spacing, location, clearances, position, and type of systems shall be in accordance with reference standard RS 17-2, except that sprinkler systems in one and two family dwellings may in the alternative be in accordance with reference standard RS 17-2B, and sprinkler systems in other residential buildings not exceeding six stories or seventy-five feet in height and in other residential spaces in buildings not exceeding six stories or seventy-five feet in height may in the alternative be in accordance with reference standard RS 17-2A.

(b) Notwithstanding any provision to the contrary contained in reference standards RS 17-2, RS 17-2A or RS 17-2B sprinklers may be omitted from clothes closets, linen closets, pantries, water closets, water closet compartments, bathrooms, general toilet rooms and shower rooms in buildings and spaces classified in occupancy group J-2 and J-3.

Local Law 10-1999.

§[1703. 4] 27-957 Sprinkler alarm system.-

*(a) A sprinkler alarm system shall be provided in accordance with the applicable provisions of reference standards RS 17-2, RS 17-2A, RS 17-2B and RS 17-3. Where the building is provided with a class E or modified class E fire alarm signal system, compliance with the applicable provisions of reference standard RS 17-3A or

RS 17-3B shall be acceptable in lieu of compliance with the provisions of reference standard RS 17-3.

(b) A sprinkler alarm system shall be required when more than thirty-six heads are installed in any fire area or section. See table 17-2 for general requirements. ***Local Law 10-1999.***

§[1703.5] 27-958 Approved devices.-
No device, valve, pipe, or fitting may be used in a sprinkler system unless such device, valve, pipe, or fitting is of a type approved for such use.

§[1703.6] 27-959 Siamese connections required.-

(a) Where required.-

(1) Siamese connections shall be provided in accordance with section 27-940 of article three of this subchapter, except as modified hereinafter.

(2) In below grade sprinkler systems for garage occupancies involving the storage or repair of motor vehicles, a siamese connection shall be provided within fifty feet of every exit or entrance used by motor vehicles.

(3) Where partial sprinkler protection is required for storage spaces, one siamese connection shall be provided when more than thirty-six heads are installed in one fire section. Areas subdivided, when the subdivisions are totally enclosed by noncombustible construction having at least a two hour fire-resistance rating, shall be considered separate fire sections and the number of heads in the largest section shall determine the necessity for siamese connections.

When partial sprinkler systems are installed to protect entire floor areas, siamese connections shall be provided in accordance with section 27-940 of article three of this subchapter.

In all cases where partial sprinkler protection is provided and siamese connections installed, metal signs shall be securely fastened to, or above, the siamese connection indicating the area protected. Where the building has two or more frontages, additional metal signs shall be installed indicating the location of the siamese connection.

(4) When a sprinkler system supplies a group of buildings, siamese connections shall be provided for each building as required by paragraphs one, two and three of this subdivision.

(5) A single three-inch (seventy-six millimeter) inlet fire department connection acceptable to the fire commissioner may be provided for the sprinkler system in lieu of each required siamese connection in buildings classified in occupancy group J-2 not exceeding six stories or seventy-five feet in height and in spaces classified in occupancy group J-2 in buildings not exceeding six stories or seventy-five feet in height.

(b) Installation and construction.-The installation and construction of siamese connections shall be the same as required for fire standpipe systems, except that the caps of each automatic sprinkler siamese connection shall be painted green and the entire siamese connection of a nonautomatic sprinkler system shall be painted with aluminum paint, and except that caps of each siamese connection used for combination standpipe and sprinkler systems shall be painted yellow and signs provided as required in subdivision (b) of section two of reference standard RS 17-1.

(c)** A siamese connection need not be provided for a sprinkler system in one and two family dwellings. ***Local Law 10-1999.

§[1703.7] 27-960 Piping from siamese connection.-
Piping from the siamese connection shall be the same size as the riser or trunk main to which it is connected, except that it need not be more than five inches in diameter when supplying larger riser or feed mains. When more than one siamese connection is required, the piping from each siamese connection need not exceed four inches in diameter.

§[1703.8] 27-961 Classification of water supplies.-

(a) Automatic sources of water supply for sprinkler systems.-Automatic sources of water supply for sprinkler systems shall include a gravity tank, pressure tank, automatic fire pump, or direct connection to the public water systems. Automatic fire pumps where used for sprinkler supply shall comply with the applicable provisions of sections 27-946 and 27-947 except that no enclosures shall be required, and provided that when an emergency power system is provided, the electric power to the motor shall be connected to the emergency power source.

(b) Auxiliary sources of water supply for sprinkler systems.-Auxiliary sources of water supply for sprinkler systems shall include a manually actuated fire pump or siamese connection.

(c) Combination sprinkler and standpipe tank sources of water supply.-Tanks used to provide the required primary water supply to a standpipe system may also be used as a supply for an automatic sprinkler system.

(d) Nonautomatic sources of water supply for sprinkler systems.-Nonautomatic sources of supply for sprinkler systems shall include siamese connections.

§[1703.9] 27-962 Sources of water supply for sprinkler systems.-Sprinkler systems shall be provided with water from the following sources:

(a) Two automatic sources of water supply shall be provided for sprinklers in:

(1) Buildings classified in occupancy group A.

(2) Buildings classified in occupancy group C when the area on one floor exceeds twenty thousand square feet.

(3) Buildings classified in occupancy group F-1a when open heads are required for stages of unlimited size.

(b) At least one automatic source of water supply shall be provided for sprinklers installed in all occupancy groups, except those listed in subdivision (a) and except as provided in subdivision (c) of this section.

**(c) The domestic water supply may be used to supply any sprinklers required under section 27-954 of this article when installed in buildings classified in occupancy groups E, G, H and J, or to supply any

sprinklers required under subdivision (aa) of said section, regardless of occupancy group classification, provided that all the requirements stated in subdivision e of section 27-962 of this article are met.

(d) The domestic water supply may be used to supply water to sprinklers in cooling towers if provision is made to automatically stop the use of water through the domestic supply lines and provided that all of the requirements stated in subdivision (e) of this section are met.

(e) When the domestic water is used to supply sprinklers as permitted in subdivisions (c) and (d) of this section, all of the following conditions shall be met:

(1) The domestic water supply line from the tank or street supply is at least the size of the sprinkler line and that the capacity available is at least equal to the capacity required for the sprinklers.

(2) The domestic water supply line from the tank or street has the required pressure as provided in section 27-963 of this article.

(3) The domestic water supply line is of nonferrous material except when the domestic water supply is four inches or over.

*(4) An o.s. and y. valve or an approved valve having visual indication, sealed open, is installed in the sprinkler supply branch, or such other valve arrangement as may be provided for in reference standard RS 17-2A or RS 17-2B, as applicable.

(5) The pipe connecting the domestic water supply and the sprinkler control valve is of nonferrous material and not less than twelve inches long.

*(6) The number of heads in each fire section does not exceed twenty, except that the number of heads in each fire section may exceed twenty in buildings classified in occupancy group J-2 or J-3 not exceeding six stories or seventy-five feet in height and in spaces classified in occupancy group J-2 or J-3 in buildings not exceeding six stories or seventy-five feet in height, and no more than ten heads are supplied from any one domestic water riser.

(7) The connection is made at the supply or riser side of any domestic branch control valves.

*(8) In connection with the above conditions, the number of fire sections having twenty or less heads may be unlimited; and the installation of alarms in branches supplying fire sections shall be at the option of the owner, except that such alarms shall be provided where required by reference standard RS 17-2A or RS 17-2B.

*(9) A check valve is installed on the sprinkler supply branch.

(f) Nonautomatic sprinkler systems shall be provided with:

(1) Siamese connections in accordance with section 27-940 of article three of this subchapter.

(2) Malleable iron fittings approved for sprinkler installations.

(3) An approved automatic fire alarm with direct connection to a central station of an approved operating fire alarm company shall be installed in the area protected by the sprinkler system.

*(g) There shall be no more than ten sprinkler heads connected to a plumbing riser supplying anything other than sprinkler heads, and no more than twenty sprinkler heads connected to a riser supplying only sprinkler heads in any fire section separated by two hour enclosures from adjoining fire sections.The number of sprinkler heads connected to a riser supplying only sprinkler heads may exceed twenty in buildings classified in occupancy group J-2 or J-3 that do not exceed six stories or seventy-five feet in height and in residential spaces classified in occupancy group J-2 or J-3 in buildings not exceeding six stories or seventy-five feet in height.

(h) Standpipe risers may be used to supply water to sprinklers in high rise buildings classified in occupancy groups E, G, H and J and in existing office buildings one hundred feet or more in height, in accordance with applicable provisions of this subchapter and reference standards RS 17-1 and RS 17-2.

(i) The domestic water supply in buildings classified in occupancy group J-1 or J-2 may be used for sprinklers in corridors, in refuse chutes and in other similar areas, as approved by the commissioner. The domestic water may be supplied by direct public water connection or equipment and pumps approved for water supply in accordance with reference standard RS-16.

Local Law 10-1999.

****Local Law 26-2002***

§[1703.10] * 27-963 Direct connection of sprinklers to the public water system.-Direct connection of sprinklers to a city water main shall be acceptable as an automatic water supply, provided the main is capable of maintaining a pressure of at least fifteen psig at the top of the highest sprinkler riser, with five hundred gpm of water flowing from a two and one-half inch hydrant outlet located at the street level within two hundred fifty feet of the building. The hydrant test shall be made between the hours of eight a.m. and five p.m. on a working day. If the pressure found in this test is insufficient to comply with the above requirement, a minimum of twelve psig at the top of the highest sprinkler riser shall be acceptable, provided that all piping in the affected area and supply piping thereto that is four inches and under is increased one pipe size above those sizes required by reference standard RS 17-2, RS 17-2A or RS 17-2B, as applicable. In addition to the fifteen psig or twelve psig requirements, the following requirements shall be met:

(a) The size of each connection shall be as large as that of the main riser and, except in sprinkler systems in multiple dwellings, shall be at least three inches and shall be controlled by an accessible shutoff valve.

(b) The service pipe shall be flushed out thoroughly before connecting to the sprinkler system. A flow sufficient to produce a water velocity of at least five fps shall be used.

(c) Each service shall be equipped, under the sidewalk, with a control valve in a flush sidewalk box located within two feet of the front wall of the building

or street line as required by the department of environmental protection. The location of the control valve shall be indicated by a sign placed on the structure directly opposite the sidewalk flush box, and such sign shall have a white background with one inch red letters reading: "Automatic Sprinkler Shutoff Valve ...Feet Opposite this Sign." Alternatively, brass, bronze, or other metal sign with one inch letters, raised or countersunk one-eighth of an inch may be used.

(d) The plans submitted in connection with the permit application shall be accompanied by a statement from the bureau of water supply of the department of environmental protection, stating the size of street main or mains, distance to and size of mains from which it or they are fed, the location of control valves, the static pressure on the hydrant nearest the premises, and the residual pressure in the street main taken on a hydrant near the premises when the flow from the nearest hydrant is equal to the flow required to meet the requirements of this section. A letter from the bureau of water supply of the department of environmental protection estimating available flow and residual pressure shall be acceptable to the borough superintendent when a hydrant test cannot be conducted.
Local Law 10-1999.

§[1703.11] 27-964 Sprinkler booster pumps.-Where the pressure from the city water main is insufficient to comply with the requirements of section 27-963 of this article but is sufficient to give at least five psig at the highest line of sprinklers as determined by test, an automatic, electrically driven pump installed for the purpose of boosting or increasing the city water pressure in the sprinkler system may be accepted subject to the following requirements:

(a) Pumps shall be of approved centrifugal type, capable of delivering at least two hundred gpm, and shall be capable of supplying twenty-five percent of the heads, in the largest area supplied, at twenty gpm, at a pressure of at least twenty-five psig at the top of the highest sprinkler riser.

(b) Pumps shall be maintained under approved automatic control with closed circuit supervisory attachment. The supervisory attachments shall be directly connected to an office where maintenance personnel are in attendance twenty-four hours a day; or, in lieu thereof, the supervisory attachment may be directly connected to the central station of an approved operating fire alarm company. The supervisory alarm services shall be arranged so as to provide positive indication at an approved central office or sprinkler alarm panel board that the pump has operated or that the source of electrical supply has failed.

(c) Such pumps shall also comply with the applicable provisions of sections 27-946 and 27-947 of article three of this subchapter, except that only one supply shall be required and no enclosure shall be required.

§[1703.12] *27-965 Gravity and pressure tanks.- When the requirements of sections 27-963 and 27-964 of this article are not met, a pressure or gravity tank or other device shall be used, complying with the provisions of subchapter sixteen of this chapter and reference standard RS 17-2, RS 17-2A or RS 17-2B.
Local Law 10-1999.

§[1703.13] 27-966 Protection of sprinkler system.-

(a) All parts of an automatic sprinkler system exposed to freezing temperatures shall be protected from freezing in accordance with the provisions of section 27-949 of article three of this subchapter, or in lieu thereof, an automatic drypipe system or a system filled with a nonfreezing, noncombustible solution shall be used, and when a system filled with nonfreezing solution is used and the system is connected to a potable water supply, it shall be subject to the requirements of the health department and the bureau of water supply of the department of environmental protection.

*(b) Sprinkler heads subject to damage shall be protected in accordance with the applicable provisions of reference standard RS 17-2, RS 17-2A or RS 17-2B.
Local Law 10-1999.

§[1703.14] 27-967 Inspection and tests.-

All inspections and tests of sprinkler systems shall be conducted in accordance with the provisions of subdivisions a through f of section 27-951 of article three of this subchapter and the requirements of this article.

(a) Automatic wet and dry systems.-Automatic wet and dry sprinkler systems shall be subjected to a hydrostatic pressure test for a period of one hour at a pressure of at least one hundred psig at the topmost sprinkler head and at least two hundred psig at the lowest cross connection to the siamese connections.

(b) Automatic dry pipe systems.-In addition to the hydrostatic test in subdivision (a) of this section, the automatic dry pipe systems shall also be tested to forty psig air pressure for a twenty-four hour period with the pressure loss not to exceed one and one-half psig.

(c) Nonautomatic sprinkler systems.-Nonautomatic sprinkler systems shall be subjected to a hydrostatic pressure test of fifty psig at the topmost sprinkler head, with the test pressure maintained for a period of at least one hour.

(d) Pressure tanks.-Pressure tanks shall be hydrostatically tested to a pressure of at least one and one-half times the working pressure for a period of one hour.

(e) Sprinkler branches and heads supplied from domestic water.-Sprinkler branches and heads shall be tested at the pressure required by this section or at the pressure of the domestic water supply as required by subchapter sixteen of this chapter, whichever is greater.

(f) System performance.-A performance or operation test shall be made on each completed system to determine that all alarms, valves, indicators, pumps, deluge valves, dry pipe valves, and other appurtenances are in good working order.

(g) Supervisory service.-All components connected to a central station of an approved operating fire alarm company shall be tested to determine that they are in good working order. The test report shall be accompanied by a statement from the central supervisory agency stating that the agency has been retained to provide the required supervision; and when the services of the agency have been terminated it shall notify the commissioner in writing.

(h) Altered systems.-When additions, alterations, or repairs are made to a sprinkler system, the entire system shall be tested as stated in subdivisions (a), (b), (c), (e), and (g) of this section, except that the pressure at the top of the system need not exceed one hundred psig. In addition, a flow test of at least twenty gpm shall be made from a test connection at the end of the sprinkler header or the section altered or repaired.

(i) Pump test.-Pumps shall be tested in accordance with the applicable provisions of subdivisions (h) and (i) of section 27-951 of article three of this subchapter.

ARTICLE 5 INTERIOR FIRE ALARM AND SIGNAL SYSTEM

§[1704.1] 27-968 Where required.-

(a) A closed circuit electrically supervised fire alarm signal system shall be installed in the following types of buildings:

(1) Hotels, motels, lodging houses, dormitories, and single room occupancies having more than fifteen sleeping rooms or accommodating more than fifteen lodgers above the first or ground story.

(2) Buildings classified in occupancy group H-1 or H-2. Systems installed in buildings where persons are restrained under the jurisdiction of an agency of the city or the state of New York may be modified to comply with the regulations of such agency, when such modification is approved by the commissioner.

(3) Day care agencies having a board of health permit for the accommodation of more than thirty children. If such day care agency is located at the grade level of the building, the fire alarm system is required only in the premises of the day care agency. If the day care agency is located at other than grade level of the building, an approved fire alarm system shall be provided throughout the building.

(4) Health clubs and turkish or other special treatment bath houses where there are sleeping accommodations for more than fifteen persons on the premises.

(5) Department stores or retail sales establishments having one or more floors above the street floor to which the public is admitted or with a total floor area of twenty thousand or more gross square feet.

(6) All public schools; also all private schools and university teaching buildings more than one story in height. If a school premise is located at other than a grade level of a building, an approved fire alarm system shall be provided throughout the building.

(7) Single and multi-tenant factory buildings more than two stories in height in which more than twenty-five persons are employed above the ground floor, as provided by section two hundred seventy-nine of the labor law. In buildings where more than ten percent of the building occupancy is engaged in manufacturing, the building shall have an approved fire alarm system throughout.

(8) Buildings housing a motion picture studio.

(9) Buildings classified in occupancy group E, seventy-five feet or more in height and buildings classified in such occupancy group occupied or arranged to be occupied by an occupant load of more than one hundred persons above or below the street level or more than a total of five hundred persons in the building.

(10) a. Stages, dressing rooms and property rooms used in conjunction with all places of assembly used as cabarets.

b. Places of assembly used as a cabaret.

(b) Areas containing gas distribution piping operating at levels above fifteen psig shall have a combustible gas detection-alarm system, and a suitable fire protection system as approved by the commissioner with the concurrence of the fire commissioner.

§[1704.2] 27-969 Approvals.-

(a) Equipment and systems shall be made of approved materials, and shall be free from defective workmanship. The requirements of reference standard RS 17-5 shall apply except as specifically qualified herein.

(b) Before any fire alarm system is installed or extended, approval shall be obtained from the commissioner.

(c) All devices and equipment that have been approved shall have securely fastened thereon a manufacturer's label indicating compliance with the requirements of section 27-135 of article eight of subchapter one of this chapter.

§[1704.3] 27-970 Existing installations.-Except as provided in subdivisions (g) and (j) of section 27-972 of this article, fire alarm systems heretofore installed in buildings in accordance with rules then in force shall be accepted for use as long as they are maintained in good working order.

§[1704.4] 27-971 Classification and general requirements of fire alarm systems.-Fire alarms shall be classified as follows and shall meet the following general requirements:

(a) Uncoded closed circuit fire alarm system.-Consisting of manually operated [pull-lever type]* sending stations and audible signaling devices, so arranged that the operation of any station will automatically sound continuously the signaling devices throughout all portions of the building.

Copy in brackets not enacted but probably intended.

(b) Master coded closed circuit fire alarm systems.-Consisting of manually operated pull-lever type sending stations and audible signaling devices, so

arranged that the operation of any station will automatically sound the signaling devices giving a common code of signals throughout all portions of the building. The code shall consist of four rounds of a series of single strokes of the signaling devices, each round consisting of "3-3-3-3".

(c) Individually coded closed circuit general fire alarm systems.-Consisting of manually operated pull-level type sending stations and audible signaling devices, so arranged that the operation of any station will automatically sound the signaling devices, throughout all portions of the building, for a minimum of four rounds of a distinctive code of signals particular to the station at which the signal has been initiated. The code numbers that are used shall be subject to the approval of the fire commissioner.

(d) Individually coded closed circuit presignal fire alarm systems.-Consisting of manually operated pull-lever type sending stations and signal devices so arranged that the operation of any station will cause the sound of only the signal devices located in the engine room and basement and other places in the building where the members of a fire brigade work or assemble. The signaling device shall give four rounds of the particular code signal of the station at which the signal has been initiated. Approved equipment shall be provided at each station so that the operation of any station performed with the aid of a key or plug will sound all of the signal devices located in the building with four rounds of the particular coded signal of the station initiated. The code numbers used shall be subject to the approval of the fire commissioner. The presignal key or plug shall be so designed that it can be readily identified. Presignal type systems will not generally be approved; however, approval may be obtained from the fire commissioner where special type occupancies may warrant such a system.

(e) Combination unit or zone, and general alarm coded closed circuit fire alarm systems.-Consisting of manually operated pull-lever type sending stations and signal devices so arranged that the operation of any station will cause all of the signaling devices in that unit or zone to sound four rounds of the particular coded signal of the station initiated, and simultaneously will cause all of the signaling devices on the general alarm circuit to sound four rounds of the coded signal designating the unit or zone in which the station is located. An approved register and time stamp may be used in connection with this system when approved by the fire commissioner. The register, if of the closed circuit type, shall be operated from a separate closed circuit control board or panel isolated by a barrier from the main control panel in the main fire alarm control cabinet. An approved closed circuit unit annunciator with trouble alarm circuit shall be installed as part of this system when required by the fire commissioner.

(f) Special systems.-Consisting of the above systems as required, supplemented by special circuits for the operation of other fire alarm or detection devices in the systems, or electric control systems for stopping machinery, closing doors or ventilators, or shutting down fans as may be required by the commissioner or the code, or to call the central station of a private operating company of the fire department. Automatic fire detecting systems may be connected to operate an interior fire alarm system when connected thereto by an approved coded transmitter. In no case shall the transmitter be considered to replace the standard approved interior fire alarm station, except where a transmitter has been approved for both purposes. The special control circuits and devices shall be separate and distinct from the fire alarm system but shall be brought into action whenever the fire alarm system is set in operation.

***(g) Class E system**.-Consisting of a class E fire alarm signal system as described in subdivision (f) of section 27-972 of article five of this subchapter and reference standard RS 17-3A. Such systems shall be exempt from the provisions of section 27-973 of article five of this subchapter, except that compliance with paragraph two of subdivision (a) and subdivision (e) of such section shall be required.

***(h) Modified class E system.-**Consisting of a modified class E fire alarm signal system as described in subdivision (g) of section 27-972 of article five of this subchapter and reference standard RS 17-3B. Such systems shall be exempt from the provisions of section 27-973 of article five of this subchapter, except that compliance with paragraph two of subdivision (a) and subdivision (e) of such section shall be required.

***(i) Class C system.-**Consisting of a class C fire alarm signal system as described in subdivision (k) of section 27-972 and reference standard RS 17-3A. Such systems shall be exempt from the provisions of section 27-973 of article five of this subchapter, except that compliance with paragraph two of subdivision (a) and subdivision (e) of such section shall be required**.**

***(j) Class J system**.-Consisting of a class J fire alarm signal system as described in subdivision (l) of section 27-972 of article five of this subchapter and reference standard RS 17-3A. Such systems shall be exempt from the provisions of section 27-973 of article five of this subchapter, except that compliance with paragraph two of subdivision (a) and subdivision (e) of such section shall be required.

***(k) Modified class J system**.-Consisting of a modified class J fire alarm signal system as described in subdivision (m) of section 27-972 of article five of this subchapter and reference standard RS 17-3B. Such systems shall be exempt from the provisions of section 27-973 of article five of this subchapter, except that compliance with paragraph two of subdivision (a) and subdivision (e) of such section shall be required.

***(l) Modified class J-1 system**.- Consisting of a modified class J-1 fire alarm signal system as described in paragraph two of subdivision (j) of section 27-972 of

article five of this subchapter.
Local Law 16-1987.

§[1704.5] 27-972 Systems required for specific occupancies.-

(a) In any type of one-story building where a fire alarm system is required and where the floor area is not more than twenty-five hundred square feet, an uncoded closed circuit fire alarm system may be used.

(b) Private and public schools.-Master coded systems shall be used in all schools, except that schools having more than fifteen hundred students shall have an individually coded system.

(**c) Single and multi-tenant factory buildings**.-

(1) In factory buildings, an individually coded closed circuit fire alarm system shall be installed except as hereinafter provided. An uncoded circuit fire alarm system may be used in buildings not exceeding two stories in height, having not more than twenty-five hundred square feet in area in any one story, and having not more than one hundred persons in a single factory nor more than fifty persons in a multiple tenant factory above the first or ground floor.

(2) Special fire alarm signal systems may be designed for use in buildings subject to the approval of the commissioner.

(d) **A common coded closed circuit system may be used in a motion picture studio**, and in addition, an approved rate-of-rise or other approved thermostatic fire alarm system, with direct connections to a central office of an approved operating fire alarm company or the fire alarm telegraph central station, shall be provided for protecting the open studio door. Also there shall be one or more manual fire alarm boxes, which shall be located so as to be readily accessible from the open studio door.

(e) Hospitals, asylums, and nursing homes.- Buildings classified in occupancy group H-2 shall meet the following requirements:

(1) An individually coded closed circuit fire alarm system shall be provided in accordance with subdivision (c) of section 27-971 except where the fire commissioner shall have approved an individually coded closed circuit presignal fire alarm system as described in subdivision (d) of section 27-971. All fire alarm systems shall be activated by sprinkler waterflow and by all other fire detection devices installed in the building.

(2) Alarm systems shall be installed in zones of a maximum size of twenty thousand square feet.

(3) Manual fire alarm sending stations shall be at staff locations only.

(4) Where two or more buildings are served by one fire brigade, a combination unit or zone and a general alarm coded closed circuit fire alarm system shall be provided and an approved indicating annunciator installed in each building. Upon initiation of a station signal, general alarm signaling devices shall sound in engine rooms and subgrade areas of each building, and unit or zoned alarm signaling devices shall sound throughout all areas in only the building wherein the station signal was initiated. In the building where the station signal has been initiated, an approved annunciator shall indicate the station at which the signal is initiated.

(f) Buildings classified in occupancy group E- One hundred feet or more in height, and existing office buildings one hundred feet or more in height except as provided in subdivision (g) of this section shall be provided with a class E fire alarm signal system as follows:

(1) It shall be special electrically supervised approved direct wire, radio or combination thereof fire alarm signal system consisting of an interior fire alarm and voice communicating system so arranged that the operation of any station will identify its location at the fire command station as required by section 27-975 of this article, at the mechanical control center and at the regularly assigned location of the fire safety director. This identification signal shall be accomplished by means of an information display system which shall be manually resettable from the fire command station only.

(2) The nomenclature used for the location identification system shall be subject to the approval of the fire commissioner.

(3) In addition to the visual devices required above, audible signal devices indicating operation of the fire alarm signal system shall be provided at the fire command station, mechanical control center and the regularly assigned location of the fire safety director. Provisions shall be made for silencing the audible signal and transferring this signal to lamp indication.

(4) Operation of a manual station shall automatically transmit a fire alarm signal to the fire department via a central office of an operating company franchised by the board of estimate, and cause the fire alarm signal system to sound continuously throughout the floor where activated and the floor above.

(5) The fire alarm signal may be sounded over loudspeakers [*sic*]as provided in reference standard RS 17-3A so located that their operation will be heard clearly above any ambient noise, and shall be controlled from the fire command station in such a manner that the fire alarm signal can be sounded on the individual floors or throughout the building.

(6) Provision shall be made whereby the fire command station may permit the floor station to make announcements over the loudspeaker [*sic*] system.

(7) The loudspeaker [*sic*] amplifier system shall be so designed and installed that approximately fifty (50) percent of the system shall remain operable for the transmission and audibility of signals and intelligibility of voice communication over the loudspeaker [*sic*] system throughout the building, in the event the other fifty (50) percent become inoperable. The electrical supply for this fire alarm system, including the amplifiers, shall be in accordance with applicable laws, rules and regulations.

(8) An approved product of combustion ionization detecting device or a combination of an approved smoke detecting device and an approved fixed temperature thermostatic device shall be installed at each elevator landing. The device shall be located in the ceiling immediately above a call button. The activation of this device shall have the same effect as specified in subparagraphs a through e of paragraph nine of this subdivision and in addition cause the overriding of the programming for car stops of all automatic elevators serving the floor where activated and bring them non-stop to the floor levels designated by section 210.13C of reference standard RS 18-1.

(9) In buildings which are approved with air-conditioning and/or mechanical ventilation systems that serve more than the floor on which the equipment is located, the activation of any of the detectors installed in such air-conditioning and/or mechanical ventilation systems in accordance with the provisions of RS 13-1 of the reference standards shall:

a. cause the fire alarm signal system to sound continuously throughout the floor where activated and the floor above.

b. cause a fire alarm signal to be transmitted to the fire department via a central station of a franchised operating company.

c. cause the fire alarm signal system to sound at the fire command station required by section 27-975 of this article and to sound an alarm in the mechanical control center and at the regularly assigned location of the fire safety director, and to operate an information display system as provided in paragraph one of this subdivision.

d. stop the air supply into and the air return from the floor where activated by actuation of approved remote control reversible fire shutters or by automatically shutting down the air supply fans and the air return fans of the floor where activated, notwithstanding the provisions of sections 1001 through 1005 of RS 13-1 of the reference standards relating to air supply and air return controls in case of fire.

e. cause the activation of the air exhaust fans and dampers in smoke shafts and/or the pressurizing fans in stair enclosures.

(10) A building equipped throughout with an automatic sprinkler system including a water flow alarm shall be exempt from the installation of any detectors pursuant to paragraph eight of this subdivision and section 1006 of reference standard RS 13-1 provided the activation of the sprinkler water flow alarm shall have the same effect as specified in subparagraphs a through e of paragraph nine of this subdivision and in addition cause the overriding of the programming for car stops of all automatic elevators serving the floor where activated and bring them non-stop to the floor levels designated by section 210.13C of reference standard RS 18-1.

(11) In existing office buildings one hundred feet or more in height where compliance would cause practical difficulty or undue hardship, the commissioner may waive or modify the requirements of paragraphs one through nine of this subdivision (f) and accept alternatives fulfilling the intent of these requirements.

(12) Existing office buildings one hundred feet or more in height shall comply with the requirements of this subdivision on or before September thirteenth, nineteen hundred eighty-one. Complete plans of the installation shall be filed with the commissioner on or before June thirteenth, nineteen hundred eighty. A permit shall be secured from the commissioner on or before September thirteenth, nineteen hundred eighty. Where compliance with the time requirements of this paragraph would cause undue hardship, the commissioner, with the approval of the fire commissioner, may extend the time for compliance, in accordance with rules and regulations to be promulgated. Before such application for a time extension shall be considered all required applications and plans must be filed and approved permits obtained and a good faith effort towards completion of the work shall have been made.

(g) Fire alarm or communication systems installed prior to December thirteenth, nineteen hundred eighty in existing office buildings one hundred feet or more in height, may be incorporated or installed in a modified class E fire alarm signal system provided they comply with the following:

(1) It shall be a special electrically supervised approved direct wire, radio or combination thereof fire alarm signal system consisting of an interior fire alarm and voice communicating system so arranged that the operation of any station will identify its location at the fire command station as required by section 27-975 of this article, at the mechanical control center and at the regularly assigned location of the fire safety director. This identification signal shall be accomplished by means of an information display system which shall be manually resettable from the fire command station only.

(2) The nomenclature used for the location identification system shall be subject to the approval of the fire commissioner.

(3) In addition to the visual devices required above, audible signal devices indicating operation of the fire alarm signal system shall be provided in the fire command station, mechanical control center and the regularly assigned location of the fire safety director. Provisions shall be made for silencing the audible signal and transferring this signal to lamp indication.

(4) Operation of a manual station shall automatically transmit a fire alarm signal to the fire department via a central office of an operating company franchised by the board of estimate, and cause the fire alarm signal system to sound continuously throughout the floor where activated and the floor above.

(5) The fire alarm signal may be sounded over loudspeakers [*sic*]as provided in reference standard RS 17-3B so located that their operation will be heard clearly above any ambient noise, and shall be controlled

from the fire command station in such a manner that the fire alarm signal can be sounded on the individual floors or throughout the building.

(6) The electrical supply for this modified fire alarm system, including the amplifiers, shall be in accordance with applicable laws, rules and regulations.

(7) An approved product of combustion ionization detecting device or a combination of an approved smoke detecting device and an approved fixed temperature thermostatic device shall be installed at each elevator landing. The device shall be located in the ceiling immediately above a call button. The activation of this device shall have the same effect as specified in subparagraphs a through e of paragraph eight of this subdivision and in addition cause the overriding of the programming for car stops of all automatic elevators serving the floor where activated and bring them non-stop to the floor levels designated by section 210.13C of reference standard RS 18-1.

(8) In buildings which are provided with air-conditioning and/or mechanical ventilation systems that serve more than the floor on which the equipment is located, the activation of any of the detectors installed in such air-conditioning and/or mechanical ventilation systems in accordance with the provisions of RS 13-1 of the reference standards shall:

a. cause the fire alarm signal system to sound continuously throughout the floor where activated and the floor above.

b. cause a fire alarm signal to be transmitted to the fire department via a central station of a franchised operating company.

c. cause the fire alarm signal system to sound at the fire command station required by section 27-975 of this article and to sound an alarm in the mechanical control center and at the regularly assigned location of the fire safety director, and to operate an information display system as provided in paragraph one of this subdivision.

d. stop the air supply into and the air return from the floor where activated by actuation of approved remote control reversible fire shutters or by automatically shutting down the air supply fans and the air return fans of the floor where activated, notwithstanding the provisions of sections 1001 through 1005 of RS 13-1 of the reference standards relating to air supply and air return controls in case of fire.

e. cause the activation of the air exhaust fans and dampers in smoke shafts and/or the pressurizing fans in stair enclosures.

(9) A building equipped throughout with an automatic sprinkler system including a water flow alarm shall be exempt from the installation of any detectors pursuant to paragraph seven of this subdivision and section 1006 of reference standard RS 13-1 provided the activation of the sprinkler water flow alarm shall have the same effect as specified in subparagraphs a through e of paragraph eight of this subdivision and in addition cause the overriding of the programming for car stops of all automatic elevators serving the floor where activated and bring them non-stop to the floor levels designated by section 210.13C of reference standard RS 18-1.

(10) Existing office buildings one hundred feet or more in height shall comply with the requirements of this subdivision on or before September thirteenth, nineteen hundred eighty-one. Complete plans of the installation shall be filed with the commissioner on or before June thirteenth, nineteen hundred eighty. A permit shall be secured from the commissioner on or before September thirteenth, nineteen hundred eighty. Where compliance with the time requirements of this paragraph would cause undue hardship, the commissioner, with the approval of the fire commissioner may extend the time for compliance, in accordance with rules and regulations to be promulgated. Before such application for a time extension shall be considered all required applications and plans must be filed and approved, permits obtained and a good faith effort towards completion of the work shall have been made.

(11) In existing office buildings one hundred feet or more in height where compliance would cause practical difficulty or undue hardship, the commissioner may waive or modify the requirements of paragraphs one through nine of this subdivision (g) and accept alternatives fulfilling the intent of these requirements.

(h) Buildings classified in occupancy group E, less than one hundred feet in height occupied or arranged to be occupied for an occupant load of more than one hundred persons above or below the street level or more than a total of five hundred persons in the entire building, and on or before January eighteenth, nineteen hundred seventy-five, existing office buildings less than one hundred feet in height, occupied or arranged to be occupied, as hereinabove specified, shall be provided with a system acceptable to the commissioner, which shall:

(1) consist of equipment which shall have the capability of two-way voice communication from a fire command station to the warden on each floor of the building and the mechanical control center, to be used for fire emergencies and fire drills.

(2) have the capability of transmitting a fire alarm signal from the fire command station to the fire department via a central station of a franchised operating company.

***(i) (1) High rise buildings classified in occupancy group C** shall be provided with a fire alarm and communication system meeting the requirements of subdivision (k) of this section and reference standard RS 17-3A.

2. Buildings classifed in occupancy group J-1, either seventy-five feet or more in height or containing thirty or more sleeping rooms (except "residential hotels" as such term is defined by the commissioner pursuant to rules and regulations) shall be provided

with a fire alarm and communication system meeting the requirements of subdivision (l) of this section and reference standard RS 17-3A. In lieu of fire warden stations, either of the following are acceptable as a two-way voice communications system:

Local Law 16-1987.

1. A closed circuit supervised fire department telephone system meeting the following conditions in complying with requirements of RS 17-3 as applicable to standpipe fireline telephone and signaling system:

a. Means on every floor to communicate by telephone with the fire command station. A permanent telephone shall be located at the fire command station. All other floors near the main riser shall be provided with telephones or telephone jacks. Telephones or jacks shall be installed in locked cabinets capable of being opened with a fire department standard key.

b. At least six portable telephones with jack connections shall be provided unless permanent telephones are installed at every required location. The portable telephones shall be kept in a cabinet located near the fire command station and shall be provided with a lock capable of being opened with a fire department standard key. Such cabinet shall be locked at all times and marked portable telephones for fire department use.

c. A pilot light shall be provided at the fire command station to indicate that the telephone is in use or that its receiver is off the hook; or

2. A fire communication slotted coaxial cable radio system installed to provide adequate communication capability throughout the building. Adequate communication is defined as the capability for clear two-way communication between a fire department portable radio at the lobby command post and another fire department portable radio at any other point in the building.

Such system shall be acceptable to the fire department.

***(j) (1) Existing buildings** seventy-five feet or more in height, classified in occupancy group J-1 (except "residential hotels" as such term is defined by the commissioner pursuant to rules and regulations) shall be provided with a fire alarm and communication system meeting all the applicable requirements of subdivision (m) of this section and reference standard RS 17-3B. In lieu of fire warden stations, either of the following is acceptable as a two-way voice communication system:

1. A closed circuit supervised fire department telephone system meeting the following conditions in complying with requirements of RS 17-3 as applicable to standpipe fireline telephone and signaling system:

a. Means on every floor to communicate by telephone with the fire command station. A permanent telephone shall be located at the fire command station. All other floors near the main riser shall be provided with telephones or telephone jacks. Telephones or jacks shall be installed in locked cabinets capable of being opened with a fire department standard key.

b. At least six portable telephones with jack connections shall be provided unless permanent telephones are installed at every required location. The portable telephones shall be kept in a cabinet located near the fire command station and shall be provided with a lock capable of being opened with a fire department standard key. Such cabinet shall be locked at all times and marked portable telephones for fire department use.

c. A pilot light shall be provided at the fire command station to indicate that the telephone is in use or that its receiver is off the hook; or

2. A fire communication slotted coaxial cable radio system installed to provide adequate communication capability throughout the building. Adequate communication is defined as the capability for clear two-way communication between a fire department portable radio at the lobby command post and another fire department portable radio at any other point in the building.

Such system shall be acceptable to the fire department.

(2) Existing buildings less than seventy-five feet in height and containing thirty or more sleeping rooms, classified in occupancy group J-1, shall be provided with a modified Class J-1 fire alarm and communications system as follows:

(a) A fire command station shall be provided at the entry floor level in accordance with the requirements of the fire commissioner.

(b) A public address system shall be provided acceptable to the fire commissioner capable of being easily heard (80 dbs at sixty feet) in all existing corridors, hallways, passageways and stairs.

(c) The approved existing interior fire alarm system shall be acceptable provided that it shall automatically transmit a fire alarm signal (when activated) to the fire department via a central station connection of an operating company which is franchised where applicable and which is acceptable to the fire department.

***(k) Buildings classified in occupancy group C**, seventy-five feet or more in height, shall be provided with a class C fire alarm and communications system which shall meet the criteria contained in paragraphs one through ten of subdivision (f) of this section and the criteria contained in subdivisions (a) and (b) of section 27-975 of this article.

***(l) Buildings classified in occupancy group J-1**, seventy-five feet or more in height or containing thirty or more sleeping rooms, shall be provided with a class J fire alarm and communication system which shall meet the criteria contained in paragraphs one through ten of subdivision (f) of this section and the criteria contained in subdivisions (a) and (b) of section 27-975 of this article**.**

***(m) Existing buildings classified in occupancy group J-1**, seventy-five feet or more in height, shall be provided with a modified class J fire alarm and communication system which shall meet the criteria contained in paragraphs one through nine of subdivision (g) of this section and the criteria contained in subdivisions

(a) and (b) of section 27-975 of this article.

***(n) All other occupancies** shall be provided with an individually coded closed circuit general fire alarm system when a fire alarm system is required.

Local Law 16-1987.

§[1704.6] 27-973 Location and identification of sending stations and sounding devices.-

(a) Location of sending stations.-

(1) There shall be at least one fire alarm sending station in each story of any building at all natural paths of egress to the street. The station shall be installed at a readily accessible location meeting the approval of the fire commissioner. The sending station shall be kept unobstructed at all times. Additional sending stations shall be installed so that no point on any floor is more than one hundred fifty feet from the nearest sending station in buildings of Group I construction and one hundred feet in buildings of Group II construction.

(2) All fire alarm stations installed or relocated after April first, nineteen hundred eighty-four, shall be installed so that the handle is approximately four feet from the floor.

(b) Location of sounding devices.-

(1) Sounding devices shall be of sufficient number so that the alarm shall be clearly audible to all the occupants of the building.

(2) The centerline of all gongs and signaling devices shall be located at least eight feet above the floor except that in locations where ceilings prevent the installation at this height, the centerline of the device shall be located six inches below the ceiling.

(3) Approved gongs shall be provided as the sounding devices. Where gongs are not audible, approved horns, chimes, or whistles may be installed subject to the approval of the fire commissioner.

(c) Location of instructions.-An approved instruction card, properly marked and framed under glass, shall be installed at each fire alarm station. Instruction cards for individually coded systems shall indicate the code designation and location of each sending station in the building.

(d) Fastening for devices.-All materials and devices used in fire alarm signal systems shall be securely fastened in position. The locations shall be selected by an architect or engineer, subject to the approval of the commissioner.

(e) Identification of equipment.-Fire alarm sending stations for all systems shall be painted red. A diagonal white stripe one inch wide from the upper left hand corner to lower right hand corner shall be painted or applied to sending stations which transmit a fire alarm signal to the fire department via a central station of a franchised operating company. The stripe shall not render any lettering illegible or obliterate the station number.

(f) Mixed occupancy buildings.-Where a building is subdivided by fire divisions, each building section may be treated as a separate building for the purpose of fire alarm signal system installations. One control board may be used, if so arranged as to operate the signaling devices in each building section independently.

(g) Subdivided occupancy.-In buildings requiring fire alarm signal systems, and in which parts are occupied by other than factory tenants and in which the fire department has approved the use of a local fire brigade, the commissioner may accept dual operation systems.

§[1704.7] 27-974 Standpipe fireline telephone and signaling systems.-

(a) In every building more than three hundred feet high, a telephone and signaling system shall be provided for fire department use in operating the standpipe system.

(b) Such system shall permit communication by permanent telephones in the pump rooms, on the entrance floor, and in gravity tank rooms communicating with floors, and by means of permanent or portable telephones on each floor near the main standpipe riser. The system shall be a selective ringing, common talking system supplied by a twenty-four volt direct current power source.

(c) Permanent wall telephones shall be provided with six inch gongs at each instrument. The telephones in the pump room shall be equipped with a loudspeaking receiver so that a voice can be distinctly heard at a distance of at least fifteen feet from the receiver. All other floors shall be provided with jacks protected by break-glass boxes, or with permanent telephones.

(d) At least three portable telephones with jack connections shall be provided for each standpipe installation, unless permanent telephones are installed at every required location. The portable telephones shall be kept in a cabinet located in the main hall of the entrance floor and shall be provided with a lock capable of being opened with a fire department standard key. Such cabinet shall be locked at all times. The panel of the cabinet door shall be conspicuously marked "portable telephone for fire department use."

(e) A pilot light shall be provided over the standpipe telephone cabinet in the entrance floor to indicate if the telephone is in use or a receiver is off the hook.

(f) Standpipe signaling devices.-

(1) Manual type individually coded sending stations shall be located in the main corridor of the building or other location meeting the approval of the commissioner. This system shall be so arranged that a coded signal will be transmitted to the alarm sounding devices. An eight inch gong shall be provided in the pump rooms, in elevator shafts at intervals not exceeding ten floors, and at such other locations selected by the architect or engineer, subject to the approval of the commissioner. All apparatus used in connection with the signaling system shall be of an approved type and installed as required by the provisions of reference standard RS 17-3 governing the installation of interior fire alarm

systems.

(2) Adjacent to each telephone station and near the main standpipe riser, there shall be provided an approved closed circuit strap key enclosed in a sheet metal box equipped with a paracentric fire department lock and approved hinges. The strap key shall be connected in series with the box circuit of the signal sending station.

(3) A card of instructions shall be placed in the pump room giving code numbers of signaling stations, the pressure obtainable at various speeds of the fire pumping motor, and such other information as the commissioner may direct.

(g) Where the building is subject to the provisions of subdivision (f) or (g) of section 27-972 of this article with respect to the requirement for a modified class E fire alarm signal system, the standpipe fireline telephone and signaling system may be combined with such fire alarm system provided:

(1) the alarms and two-way voice communication with the fire command station include the pump room and gravity tank or pressure tank room, and

(2) a designated floor station of the modified class E fire alarm signal system is located at or near the main standpipe riser on every floor.

§[1704.8] 27-975 Communication system and fire command station.-Buildings classified in occupancy group E, seventy-five feet or more in height, or, if less than seventy-five feet in height, with a total gross area of two hundred thousand square feet or more and existing office buildings one hundred feet or more in height, shall be provided with the following:

(a) a communication system acceptable to the commissioner consisting of:

(1) loud speakers on each floor of the building, in each elevator and each stair enclosure, which shall be capable of being operated from the fire command station.

(2) a two-way voice communication capability between the fire command station and the following locations:

a. a designated floor warden station on each floor
b. mechanical control center
c. elevators
d. air-handling control rooms
e. elevator machine rooms

(b) The fire command station shall be located in the lobby of the building on the entrance floor as part of the elevator control panel or immediately adjacent thereto. Such command station shall be adequately illuminated and shall contain the following:

(1) the loud speaker and communication capability described in subdivision (a) of this section.

(2) the audible alarm signal required in subdivision (f) and (g) of section 27-972 of this article.

(3) manually reset information display system to indicate the floor where the alarm was activated.

(4) means to control the sounding devices on any floor or throughout the building.

(5) means to manually transmit a fire alarm signal to the fire department via a central station of a franchised operating company.

(6) means for silencing the audible alarm signals when the loud speakers are in use and for activating the audible alarm systems automatically when use of the loud speakers are terminated. Switches used for this purpose shall be of the self-restoring type.

(7) display lamps to include on/off condition of air-handling systems unless such lamps are provided in the mechanical control center.

(8) means for testing the display lamps, local alarms and the connection to the central station of franchised operating company.

(c) Existing office buildings one hundred feet or more in height shall comply with the requirements of this section on or before September thirteenth, nineteen hundred eighty-one. Complete plans of the installation shall be filed with the commissioner on or before June thirteenth, nineteen hundred eighty. A permit shall be secured from the commissioner on or before September thirteenth, nineteen hundred eighty. Where compliance with the time requirements of this subdivision would cause undue hardship, the commissioner, with the approval of the fire commissioner, may extend the time for compliance, in accordance with rules and regulations to be promulgated. Before such application for a time extension shall be considered all required applications and plans must be filed and approved, permits obtained and a good faith effort towards completion of the work shall have been made.

§[1704.9] 27-976 Installation.-Installation, source of energy, wiring, and other requirements shall comply with reference standard RS 17-3, RS 17-3A or RS 17-3B as applicable.

§[1704.10] 27-977 Fire systems electrical tests.-Upon completion of a fire alarm system, and other electrical systems, the installation shall be subject to a test to demonstrate the efficiency of operation of all the components in the system and to an acceptance test by the fire department.

ARTICLE 6
SMOKE DETECTING DEVICES

***§[1705.1] 27-978 Definitions.-For the purposes of this article:**

a. an existing building is one which is within occupancy group J-1, occupancy group J-2 or occupancy group J-3 and for which plans have been approved by the department on or prior to December thirty-first, nineteen hundred eighty-one.

b. an improvement or alteration is a physical change in an existing structure other than painting, repairs and normal replacement of maintenance items.

c. a building shall be deemed to have been substantially improved or altered if:

1. the cost of improvement or alteration exceeds the sum of one hundred fifty thousand dollars, or

2. in either occupancy group J-1 or occupancy group J-2, fifty percent or more of the dwelling units or square feet of the structure are improved or altered and the cost of such improvement or alteration exceeds the sum of fifteen thousand dollars per dwelling unit, or

3. there has been a change in the occupancy or use of the structure.

Local Law 81-1989.

***§[1705.2] 27-979 Smoke detecting devices; where required.-**

(a) On and after January first, nineteen hundred eighty-two, all dwelling units within occupancy group J-1 and occupancy group J-2, except such units which contain operational automatic wet sprinkler systems pursuant to article four of this subchapter, and dwelling units in buildings within occupancy group J-3 shall be equipped with approved and operational smoke detecting devices as hereinafter provided. Buildings within occupancy group J-1 may, in the alternative, be equipped with a line-operated zoned smoke detecting system with central annunciation and central office tie-in for all public corridors and public spaces, pursuant to rules and regulations promulgated by the commissioner. The commissioner may, upon good cause shown, extend the period of compliance for occupancy groups J-1 and J-2 to June thirtieth, nineteen hundred eighty-two.

(b) Approved and operational smoke detecting devices shall be installed in mechanical rooms, electrical switch gear rooms and electric and telephone closets over seventy-five square feet in gross floor area in all buildings in all occupancy groups.

Local Law 81-1989.

§[1705.3] 27-980 Power sources of smoke detecting devices.-Dwelling units shall be equipped with smoke detecting devices receiving their primary power from the building wiring and there shall be no switches in the circuit other than the over-current device protecting the branch circuit; provided, however, that dwelling units in existing buildings may, in the alternative, be equipped with battery-operated smoke detecting devices except where such buildings are substantially improved or altered on or after January first, nineteen hundred eighty-two.

****§[1705.4] 27-981 General requirements for smoke detecting devices.-**

a. All smoke detecting devices required to be provided and installed pursuant to this article shall either be accepted pursuant to rules and regulations promulgated by the commissioner or be listed by a nationally recognized independent laboratory that maintains periodic inspections of production of listed equipment and whose listing states that the equipment meets nationally recognized standards. To meet the requirements of this article, such laboratory shall be one which maintains a periodic follow-up service of the devices to ensure compliance with the original listing.

b. No device shall be deemed to be in compliance with the provisions of this article unless it is of either the ionization chamber or photo-electric type. Such devices shall be in compliance with the requirements of reference standard RS 17-11 and shall be installed in a manner consistent with the requirements of reference standard RS 17-12 except that device within occupancy group J-1 shall be installed pursuant to rules and regulations promulgated by the commissioner.

*****Local Law 49-1991.***

***ARTICLE 7
CARBON MONOXIDE DETECTING DEVICES

*****§27-981.1 Definitions.-** For the purpose of this article: a. "Fossil fuel" shall mean coal, kerosene, oil, wood, fuel gases and other petroleum products.

b. "Fuel gases" shall include, but not be limited to, methane, natural gas, liquefied natural gas and manufactured fuel gases.

*****§27-981.2 Carbon monoxide detecting devices; where required.-** a. Every dwelling unit in a building within occupancy groups J-1, J-2 or J-3 where a fossil fuel-burning furnace or boiler is located, and every dwelling unit in a building that is in close proximity to a source of carbon monoxide, as such proximity is established by the rules promulgated by the commissioner in consultation with the fire department and the department of health and mental hygiene, shall be equipped with an operational carbon monoxide detecting device approved in accordance with the rules promulgated by the commissioner in consultation with the fire department and the department of health and mental hygiene, provided that there shall be installed at least one approved and operational carbon monoxide detecting device within fifteen feet of each room lawfully used for sleeping purposes. Such carbon monoxide detecting device may be combined with a smoke detecting device that complies with the provisions of this title and any applicable rules promulgated thereunder.

b. In every building classified in occupancy group G or occupancy group H-2, at least one approved and operational carbon monoxide detecting device shall be installed in accordance with rules promulgated by the commissioner in consultation with the fire department and the department of health and mental hygiene.

c. The provisions of this article shall apply retroactively to every building, in accordance with the provisions of subdivision a or subdivision b of this section, irrespective of when such building was constructed or a certificate of occupancy for such building was issued.

d. The provisions of this article may be enforced by the department, the fire department, the department of health and mental hygiene and the department of housing preservation and development.

*****§27-981.3 General requirements for carbon monoxide detecting devices.-** All carbon monoxide detecting devices required to be provided and installed pursuant to this article shall be of a type authorized by rules promulgated by the commissioner.

******Local Law 7-2004.***

SUBCHAPTER 18
ELEVATORS AND CONVEYORS

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ARTICLE 1 GENERAL

§[C26-1800.1] 27-982 Scope.-This subchapter shall establish the minimum safety requirements for, and control the design, construction, installation, alteration, maintenance, inspection, test and operation of, all elevators, dumbwaiters, escalators, moving walks, industrial lifts and loading ramps, automotive lifts, mechanical parking garage equipment, console or stage lifts, power operated scaffolds, amusement devices, and special hoisting and conveying equipment.

§[C26-1800.2] 27-983 Standards.-The provisions of reference standard RS-18 shall be a part of this subchapter.

§[C26-1800.3] 27-984 Definitions.-For definitions to be used in the interpretation of this subchapter, see subchapter two of this chapter.

§[C26-1800.4] 27-985 Plans.-For the requirements governing the filing of plans and the work to be shown on plans, see subchapter one of this chapter**.**

§[C26-1800.5] 27-986 Permits.-For the requirements governing equipment work permits and equipment use permits, see subchapter one of this chapter.

§[C26-1800.6] 27-987 General requirements.-All of the equipment listed in section 27-982 of this article shall be designed, constructed, altered and maintained as required by the provisions of this subchapter and reference standard RS-18. No piping or ductwork of any kind shall be permitted within hoistway or elevator enclosures except (i) as may be required for the elevator installation and (ii) low voltage wiring required or permitted by subchapter seventeen of this chapter provided that such wiring shall be protected within the hoistway or elevator enclosures in accordance therewith.

(a) Construction equipment.-Except for workers' hoists the provisions of this subchapter shall not apply to materials hoisting equipment for temporary construction use. For such equipment, the requirements of subchapter nineteen of this chapter shall apply.

(b) Portable equipment.-The provisions of this subchapter shall not apply to portable elevating devices used to handle materials only except as specifically provided in reference standard RS 18-5.

***** (c) Fire protection and impact resistance.-**

(1) Fire protection.- The fire resistance rating of hoistway enclosures shall be two hours and for hoistway doors and door assemblies the fire protection shall be one and one-half hours subject to the test procedures of subchapter five of this chapter.

(a) vertical conveyors passing through floors shall be fire protected as required for shafts in subchapter five of this chapter.

(b) inclined conveyors passing through floors shall be fire protected as required in reference standard 18-1 for escalators which are not a required means of egress.

(c) horizontal conveyors passing through vertical fire divisions shall be fire protected as required in subchapter five of this chapter.

(2) Impact resistance.- Elevator enclosures serving occupancy group E spaces (office spaces) in high rise buildings constructed pursuant to applications filed on or after July 1, 2006, shall comply with rules to be promulgated by the commissioner establishing minimum impact resistance standards. Such rules shall permit compliance with assemblies comprising approved reinforced construction boards affixed onto stud framing. The commissioner shall promulgate such rules on or before January 1, 2006.

(d) Elevators required.-For provisions designating buildings in which elevators are required, see subdivision (c) of section 27-372 of article five of subchapter six of this chapter.

(e) Elevator mirrors.-In all multiple dwellings in which there are one or more self-service passenger elevators, there shall, pursuant to such regulations as the commissioner shall prescribe, be affixed and maintained in each such elevator a mirror which will enable persons prior to entering into such elevator to view the inside thereof to determine whether any person is in such elevator.

(f) Emergency signal equipment.-Elevators, other than private residence elevators, that are operated at any time without a designated operator in the car, shall be provided with emergency signal equipment in accordance with the requirements of reference standard RS 18-1.

(g) Elevators and escalators as exits.-Elevators shall not be accepted as a required means of egress. Elevators shall not be installed in a common enclosure with a stairway. Escalators shall be accepted as equivalent to stairs when they comply with the requirements of section 27-378 of article five of subchapter six of this chapter.

(h) Car switch operation.-Elevators with car switch operation shall be provided with a signal system by means of which signals can be given from any landing whenever the elevator is desired at that landing.

(i) Electrical requirements.-All electric work shall conform to the electrical code of the city of New York.
******Local Law 26-2004.***

§[C26-1800.7] 27-988 Manlifts.-The installation of manlifts is governed by the requirements of reference standard RS 18-9, and such additional safety regulations as may be promulgated by the commissioner.

§[C26-1800.8] 27-989 Elevator in readiness.-

(a) Except as provided in subdivision (b) of this section, in every building seventy-five feet or more in height, all floors shall be served by at least one elevator which shall be kept available for immediate use by the fire department during all hours of the night and day, including holidays, Saturdays and Sundays. There shall be available at all times a person competent to operate the elevator, except that no attendant shall be required for buildings between seventy-five feet and one hundred fifty feet in height having elevators with automatic or continuous pressure operation with keyed switches meeting the requirements of reference standard RS 18-1 so as to permit sole use of the elevators by the fire department.

(b) In high rise buildings classified in occupancy group A, B, C, D, E, F, G or H, in buildings classified in occupancy group E with a gross area of two hundred thousand square feet or more, in buildings classified in occupancy group J-1 or J-2, in existing high rise buildings classified in occupancy groups C, F, G and H, in existing buildings classified in occupancy group J-1 (except "residential hotels," as such term is defined by the commissioner pursuant to rules and regulations) and in existing office buildings one hundred feet or more in height the number of elevators that shall be kept available for immediate use by the fire department as provided for in subdivision (a) of this section, shall be as follows:

(1) Where a floor is serviced by three or less elevator cars, every car shall be kept available.

(2) Where a floor is serviced by more than three elevator cars, at least three elevator cars with a total rated load capacity of not less than six thousand pounds shall be kept available for every floor. Such cars shall include not more than two cars which service all floors and at least one other car in another bank servicing that floor. If the total load capacity of all cars servicing the floor is less than six thousand pounds, all such cars shall be kept available.

(3) Such elevators which have automatic or continuous pressure operation shall be controlled by keyed switches meeting the requirements of reference standard RS 18-1.

(4) In high rise buildings classified in occupancy group A, B, C, D, E, F, G or H, in low rise buildings classified in occupancy group E with a gross area of two hundred thousand square feet or more and in buildings classified in occupancy group J-1 or J-2, all other automatically operated cars shall have manual operation capability.

(c) Notwithstanding the retroactive provisions of section 27-994 of article two of this subchapter:

(1) Existing office buildings one hundred feet or more in height shall comply with the requirements of this section by September thirteenth, nineteen hundred eighty-one. Complete plans of the installation shall be filed with the commissioner by June thirteenth, nineteen hundred eighty. A permit shall be secured from the commissioner by September thirteenth, nineteen hundred eighty.

(2) Existing high-rise buildings classified in occupancy group C, F, G or H and existing buildings classified in occupancy group J-1 subject to the requirements of this section shall comply with the requirements of this section on or before April first, nineteen hundred eighty-seven.

§[C26-1800.9] 27-990 Acceptance of equipment.- All equipment and devices regulated by the provisions of this subchapter shall be accepted or approved for use in accordance with the requirements of article eight of subchapter one of this chapter.

§[C26-1800.10] 27-991 Construction.-The construction, installation and alteration of all elevator and conveyor equipment and devices, shall be subject to the provisions of this subchapter and applicable reference standards as follows:

(a) Elevators, dumbwaiters, escalators and moving walks.-reference standard RS 18-1.

(b) Mechanized parking garage equipment.-reference standard RS 18-2.

(c) Automotive lifts.-reference standard RS 18-3.

(d) Industrial lifts and hinged loading ramps.-reference standard RS 18-4.

(e) Conveyors.-reference standard RS 18-5.

(f) Console or stage lifts.-reference standard RS 18-6.

(g) Workers' hoists.-reference standard RS 18-7.

(h) Power operated scaffolds.-reference standard RS 18-8.

§[C26-1800.11] 27-992 Alterations.-Alterations to elevators, escalators, dumbwaiters and other equipment provided for in this subchapter shall comply with the requirements of article four of subchapter one of this chapter. Minor alterations and ordinary repairs shall comply with the requirements of article five of subchapter one of this chapter except that elevator work shall not constitute a minor alteration or an ordinary repair when it is classified as alteration by the provisions of reference standard RS 18-1.

§[C26-1800.12] 27-993 Prohibited devices.-The installation of sidewalk elevators located outside the street line is prohibited.

ARTICLE 2 EXISTING INSTALLATIONS

§[C26-1801.1] 27-994 Retroactive provisions.-The provisions of this subchapter are not retroactive except that the provisions of this section are retroactive. Existing elevators moved to new hoistways shall conform with all the requirements for new installations. All alteration work on existing installations required by this section must be completed no later than December sixth, nineteen hundred seventy.

(a) Emergency interlock release switch.-Emergency interlock release switches in elevator cars, where provided, shall be of the key-operated, continuous-pressure type and all other types now in use shall be removed or replaced with approved key-operated, continuous-pressure type switches.

(b) Machines-belt and chain-driven.-Single-belted and chain-driven machines shall be permitted only on freight elevators and only when equipped with electrically released, spring applied brakes and with terminal stopping devices and electrical safety devices as required in reference standard RS 18-1.

(c) Machines-drum winding.-Drum winding machines shall be equipped with electrical machine limits as set forth in reference standard RS 18-1.

(d) Car gate switches-additions, replacement, or relocation of.-Car gate electric contacts where such devices are not provided or are found to be tied or blocked so as to render them inoperative shall be added, replaced or relocated as required by the commissioner. Installation or replacement of car gate electric contacts shall conform to the requirements of reference standard RS 18-1.

(e) Elevator hoistway-door interlocks.-All existing elevators not presently equipped with hoistway doors having door interlocks shall be provided with hoistway landing doors equipped with approved type hoistway-door interlocks conforming to the requirements of reference standard RS 18-1. Approved-type interlock switches may be installed in connection with existing hoistway door closers, provided the combination door closers and interlocks conform to all the requirements for approved hoistway-door interlocks. The use of elevator parking devices and hoistway door unlocking devices for opening hoistway doors from the landing side shall conform to the requirements of reference standard RS 18-1.Exceptions:

Interlocks or electric contacts shall not be used on hydraulic elevator landing doors or gates except where such elevators are provided with electric control and operating devices.

(f) Emergency signal or telephone.-Automatic operation elevators or any elevator operated at any time without a designated operator shall be provided with an audible emergency signal, and except in buildings classified in occupancy groups J-1, and J-2, the cars shall be provided with a telephone, in accordance with the requirements of reference standard RS 18-1.

(1) Elevators with car switch operation shall be provided with a signal system by means of which signals can be given from any landing whenever the elevator is desired at the landing.

§[C26-1801.2] 27-995 Existing sidewalk elevators.-Existing sidewalk elevators shall not be subject to the provisions of this section.

§[C26-1801.3] 27-996 Existing hand powered freight elevators.-Existing hand powered freight elevators shall not be subject to the provisions of this article. However, adequate protection of landing openings shall be provided by hinged or sliding doors which shall remain locked at all times except when the freight elevator is in use. Auxiliary gates not less than thirty-six inches in height, substantially constructed and secured in place, of wood or metal, or equivalent metal chains shall be installed. Such gates or chains may be arranged to lift vertically, to slide horizontally, or to swing. No part of any gate or chain may project into the freight elevator shaft. Gates may be operated automatically or manually.

§[C26-1801.4] 27-996.1 Locks on elevators and elevator hoistway doors.-Notwithstanding the retroactive provisions of section 27-994 of this article, in high rise buildings and existing high rise buildings, no switch, lock or device of any kind shall be installed on any floor on or above the street floor on any elevator car or elevator hoistway door, except elevators used exclusively for freight, that shall prevent opening of such doors by anyone not having a key, unless fire department access to cars and hoistways is provided for by a city-wide standard key as described in reference standard RS 18-1.

Existing high rise buildings shall comply with the requirements of this section on or before April first, nineteen hundred eighty-seven.

§[C26-1801.5] 27-996.2 Firemen service operation in existing elevators.-

(a) Notwithstanding the retroactive provisions of section 27-994 of this article, where required by reference standard RS 18-1, firemen service operation shall be installed in all existing elevators serving any of the following:

(1) High rise buildings or building sections classified in occupancy group C.

(2) All buildings or building sections classified in occupancy group F, G, H or J-1 (except for "residential hotels," as such term is defined by the commissioner pursuant to rules and regulations).

(b) All work necessary to meet the requirements of this section shall be completed on or before April first, nineteen hundred eighty-seven.

ARTICLE 3 TESTS AND TEST INTERVAL

§[C26-1802.1] 27-997 Acceptance tests.-No new, relocated or altered equipment shall be placed in operation until it has been tested and an equipment use permit has been issued by the commissioner. Such tests shall be made as required in section 27-999 of this article and shall be conducted by the person or firm installing, relocating or altering the equipment and shall be witnessed by a representative of the commissioner.

***§[C26-1802.2] 27-998 Periodic inspection and test intervals**.-Every new and existing device listed in article one of this subchapter except elevators located, (i) in owner occupied one-family or two-family dwellings provided that the elevator services only the owner occupied dwelling unit and that such dwelling unit is not occupied by boarders, roomers or lodgers, or (ii)within convents or rectories which are not accessible to non-occupants on a regular basis, or (iii) within an owner occupied dwelling unit which is not occupied by boarders, roomers or lodgers shall be inspected and tested at least at the following intervals:

(a) Elevators-five times every two years, or as otherwise provided by the commissioner and except:

(1) Car safeties and counterweight safeties, where provided, shall be inspected at intervals not exceeding one year and shall be tested at intervals not exceeding two years.

(2) Oil buffers and governors shall be periodically inspected and shall be tested at intervals not exceeding one year.

(3) Hydraulic elevator pressure tanks and the piston rods of roped hydraulic elevators every three years.

(b) Escalators-five times every two years.

(c) Amusement devices-every six months except that the commissioner may extend the periodic inspection and test for an additional two months for amusement devices located in premises which are seasonally operated.

(d) Workers' hoists-every three months and immediately following each increase in travel.

(e) All other devices-at such intervals as the commissioner may require.

(f) Additional inspections- in addition to the inspections required by subdivisions (a) through (e) of this section, the commissioner may make such additional inspections as required to enforce the provisions of this code. No fee shall be charged for such additional inspections.

(g) Fees-every owner of elevators and other devices shall pay to the department an inspection fee for each elevator or device in the amount prescribed by subdivision c of section 26-213 of title twenty-six of the administrative code.

Local Law 48-1991; Local Law 96-1985, language juxtaposed per Ch. 907-1985.

§[C26-1802.3] 27-999 Inspection and test requirements.-Every new and existing device listed in article one of this subchapter shall be subjected to inspections and test requirements as follows:

(a) Elevators, dumbwaiters and escalators to the requirements specified in the reference standard RS 18-1 except that:

(1) Governor operated elevator car safeties shall be tested with no load in the car at the lowest operating speed.

(2) Instantaneous type car safeties, without governors, operated only as a result of the breaking or slackening of the hoist ropes shall be tested with no load in the car.

(b) Moving walks to the requirements specified in the reference standard RS 18-1.

(c) Lifts, conveyors, and amusement devices shall be inspected and subjected to the test requirements of the applicable reference standards and shall be tested to confirm the load capacity and safety of operation of the equipment, including tests of all operating protective safety devices,

adequacy of the structural supports, and anchorage to floors, walls, ceilings and foundations.

(**d) All other devices** shall be subject to such inspections and tests as the commission[er]* may require.

Copy in brackets not enacted but probably intended.

§[C26-1802.4] 27-1000 Inspection agencies and elevator repair service.-

**(a) The required periodic inspections shall be made by the department except that two of the five inspections required every two years for elevators and escalators shall be made on behalf of the owner by an insurance company, elevator maintenance company, elevator manufacturer, elevator inspection company, or other person, each of which must be acceptable to the commissioner. The department shall promulgate rules and regulations establishing criteria as to the qualifications of such companies or persons. Such owner shall cause such inspections to be performed between January first and September fifteenth of each year. Reports by private inspection agencies shall be on such forms and in such manner as required by the commissioner. Such reports shall be delivered to the owner of each elevator or escalator inspected listing all violations of any of the provisions of this subchapter within five days of the inspection, and a signed copy of the report of each inspection shall be filed with the commissioner. The failure to have such inspection performed within the prescribed period and to file a copy of the report with the department on or before September thirtieth of each year shall be a violation of this section, which shall be punishable pursuant to the provisions of section 26-125 of title twenty-six of the administrative code. After such violation is placed the owner may file such report and the department shall enter a notation in its records of the date on which such report was received by the department. After the date of receipt by the department, the per diem penalty provided by subdivision c of section 26-125 of title twenty-six of the administrative code shall be stayed. The department shall maintain the violation on its records, with a notation of the date on which such report was received by the department. On or before October fifteenth of each year all defects as found upon such inspection shall be corrected.

(b) In addition to the requirements of subdivision (a) of this section, all reports filed on or after April first, nineteen hundred eighty-seven for existing buildings required to install stair and elevator signs pursuant to section 27-390, elevator in readiness systems pursuant to paragraph two of subdivision (c) of section 27-989 of article one of this subchapter or firemen service operation pursuant to section 27-996.02 of article two of this subchapter, shall contain a certification that the required installation has been made. The reports shall be on such forms and in such manner as the commissioner may require. Failure to file such report by such a date shall be a violation of this section, and shall be punishable pursuant to section 26-125 of title twenty-six of the administrative code.

(c) In multiple dwellings (either J1 or J2 occupancy groups), the owner shall be required to have a contract with an elevator repair person or company authorizing the performance of emergency elevator repair work. Such repair person or company shall be one of the elevator inspection agencies or inspectors employed thereby currently acceptable to the commissioner. The name, address and telephone number of such elevator repair person or company shall be maintained on each premises, in a location readily accessible to employees of this department, and maintenance or custodial staff at the premises.

Local Law 48-1991.

ARTICLE 4 EQUIPMENT PERMITS

§[C26-1803.1] 27-1001 Permit required.-No construction, alteration or removal shall be commenced until a written work permit therefor shall have been issued by the commissioner in accordance with the provisions of article seventeen of subchapter one of this chapter. No equipment shall be placed in operation until an equipment use permit has been obtained in accordance with provisions of article eighteen of subchapter one of this chapter and section 27-997 of article three of this subchapter.

§[C26-1803.2] 27-1002 Temporary use permits.-Temporary use permits may be issued by the commissioner upon request in accordance with the provisions of section 27-188 of article eighteen of subchapter one of this chapter for any equipment or device regulated herein, except power operated scaffolds. Temporary use permits for elevators shall be conditioned further upon compliance with the following:

(a) The class of service to be permitted is designated on the temporary permit.

(b) The hoistway has been enclosed throughout in an enclosure complying with subdivision (b) of section 27-987 of article one of this subchapter or with a temporary enclosure in accordance with the requirements for workers' elevators (temporary elevators) of the industrial code of the state of New York, rule no. 23.

§[C26-1803.3] 27-1003 Posting of temporary use certificate-The temporary operating certificate shall be posted in a conspicuous location on, or adjacent to, the device covered by the certificate and shall state that the device has not been finally approved by the commissioner.

****§[C26-1803.4] 27-1004 Posting of inspection certificate**.-a. At the time the equipment use permit is issued, an inspection certificate issued by the commissioner shall be posted. No such certificate shall be issued for elevators which are not

subject to periodic inspections pursuant to section 27-998. The certificate shall be in such form as determined by the commissioner and shall be posted in the car of every passenger and freight elevator and on or near every escalator and power operated scaffold and in a frame with a transparent cover.

b. In place of posting inspection certificates in those locations specified in subdivision a of this section, certificates may be kept in the on site building manager's office. In a building where this option is elected, there must be a building manager's office open during normal business hours, and there must be posted in each location specified in subdivision a of this section a notice in a frame with a transparent cover, or a plaque with an indelible inscription, stating that the inspection certificate is located in the building manager's office and identifying the location of such office.

******Local Law 39-1993; Local Law 96-1985, language juxtaposed per Ch. 907-1985.***

ARTICLE 5 EQUIPMENT OPERATION

§[C26-1804.1] 27-1005 Operators.-Every power driven passenger elevator and freight elevator with a rise of more than one story, except automatic operation and continuous pressure elevators and sidewalk elevators, shall be in charge of a designated competent operator, who shall be at least eighteen years old, free from serious physical or mental defects, and selected with consideration of his or her abilities to perform his or her duties in a careful and competent manner, and who has been instructed in accordance with the requirements of the commissioner, except as otherwise specifically provided by law. Operators of amusement devices that require the services of a regular operator shall be at least eighteen years of age and shall have secured a certificate of competence from the commissioner. If the commissioner finds that any person engaged in running an elevator or amusement device is not competent to operate the elevator or device, the owner, agent or lessee of such elevator or amusement device shall, upon notice from the commissioner, discontinue the operation of such elevator or amusement device by such operator. Other devices listed in article one of this subchapter shall, when deemed necessary by the commissioner, be in charge of a designated competent operator conforming to such qualifications as the commissioner may prescribe except that operators for workers' hoists shall be assigned as required by the applicable provisions of reference standard RS 18-7.

§[C26-1804.2] 27-1006 Accidents.-The owner or person in charge of the equipment or devices listed in article one of this subchapter shall promptly notify the commissioner of every accident involving injury to any person requiring the services of a physician or damage to property or to apparatus exceeding one hundred dollars on, about, or in connection with such equipment, and shall afford the commissioner every facility for investigating such accident or damage. The commissioner shall make an investigation immediately thereafter, and shall prepare a full and complete report of such investigation. Such report shall give in detail all material facts and information available and the cause or causes as far as they can be determined. Such report shall be open to public inspection at all reasonable hours. When an accident involves the failure or destruction of any part of the construction or operating mechanism of such equipment, no such equipment shall be used until it has been made safe, and re-inspected by the commissioner; and the commissioner may order the discontinuance of such equipment until a new use permit has been issued by him or her for its use. No part shall be removed from the premises of the damaged construction or operating mechanism until permission to do so has been granted by the commissioner.

SUBCHAPTER 19
SAFETY OF PUBLIC AND PROPERTY DURING CONSTRUCTION OPERATIONS

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ARTICLE 1 GENERAL

§[C26-1900.1] 27-1007 Scope.-The provisions of this subchapter shall govern the conduct of all construction operations with regard to the safety of the public and property. For the purposes of this subchapter, construction operations shall include excavation, erection, alteration, repair, removal and demolition as related to buildings. For regulations relating to the safety of persons employed in such construction operations, the provisions of subchapter ten of the labor law as implemented by the industrial code of the state of New York, rule no. 23, shall apply.

§[C26-1900.2] 27-1008 Definitions.-For definitions to be used in the interpretation of this subchapter, see subchapter two of this chapter.

§[C26-1900.3] 27-1009 General requirements.-
(a) A contractor engaged in building work shall institute and maintain safety measures and provide all equipment or temporary construction necessary to safeguard all persons and property affected by such contractor's operations.
(b) No structure, device, or construction equipment, whether permanent or temporary, including all partly or fully completed elements or sections of the building, shall be loaded in excess of its design capacity.
(c) At a height of no more than twelve feet above ground and on each perimeter of a construction site fronting on a public thoroughfare, a sign shall be erected no more than twenty-five square feet in size which shall bear in letters no less than six inches high, the name, address and telephone number of the owner of the property, and the name, address and telephone number of the general contractor.
(d) A construction site safety coordinator must be designated and present on a construction site in accordance with department rules and regulations.

§[C26-1900.4] 27-1010 Inspection.- Except for the installation of underpinning and the construction of temporary retaining structures (see section 27-724 of article thirteen of subchapter eleven of this chapter) and for other operations specifically required by the provisions of this subchapter to be inspected by an engineer or an architect, inspection of operations for compliance with the provisions of this subchapter may be performed by, or under, the authority of the person superintending the work. Unless required by the provisions of this subchapter, inspection and test reports relating to operations within the scope of this subchapter need not be filed.

§[C26-1900.5] 27-1011 Sizes and stresses of materials.-
(a) Sizes.-All sizes and dimensions prescribed in this subchapter are minimum requirements. Lumber sizes are nominal or commercial except where stated otherwise.
(b) Stresses.-Except where sizes are specifically prescribed in this subchapter, temporary equipment and constructions shall be designed so that the allowable stress values prescribed in subchapter ten of this subchapter are not exceeded.

§[C26-1900.6] 27-1012 Inspection.- Any construction equipment or device, except hand tools, that would affect the public safety when operated shall be inspected by the person superintending the work or by his or her designated representative before using the equipment or device on a specific job. Such inspection shall be carefully made, and every defect or unsafe condition shall be corrected before use is permitted. Any unsafe equipment or device shall be made safe immediately or removed from the site. Periodic inspection procedures

shall be instituted during construction operations, and a record of inspections shall be kept at the site for the duration of the work.

§[C26-1900.7] 27-1013 Utilities.-
(a) Existing services.-The location of all existing utilities and service lines shall be determined and adequate measures taken, or devices provided, to safeguard the public and property before such utilities are disturbed. If any utility is to be removed, relocated, or have its service interrupted, the utility company or city agency affected shall be notified at least seventy-two hours in advance.
(b) Maintaining essential services.-Fire preventive, sanitary, or other facilities that have been provided for the protection of life, health, and property shall be continuously maintained and protected unless authorization is obtained from the agency having jurisdiction to temporarily or permanently disconnect such facility.
(c) Electrical work.-All temporary electrical equipment and wiring shall meet the requirements of the electrical code of the city of New York, and shall be maintained to meet such requirements. Portions of permanent electrical installations may be used for temporary operations provided the requirements of the electrical code are met. At least seventy-two hours before work is begun that may affect a power line, above or below ground, the person superintending the work shall notify the utility company affected.

§[C26-1900.8] 27-1014 Fire protection.- Fire fighting equipment at the construction site and the conduct of all construction operations affecting fire prevention and fire fighting shall meet the requirements of the fire department.
(a) Temporary elevator.-Whenever in the course of building construction the work is at a height greater than seventy-five feet, at least one elevator meeting the requirements of subchapter eighteen of this chapter shall be kept in readiness at all times for fire department use.
(b) Standpipe systems.-Standpipe systems during construction operations shall comply with the following:
(1) If in the course of erection or alteration for which a standpipe system will be required the work reaches a height greater than seventy-five feet a permanent or temporary standpipe meeting the requirements of subchapter seventeen of this chapter shall be kept in readiness at all times for fire department use. The system shall be a dry system when freezing conditions may be encountered.
(2) In structures undergoing demolition which have existing standpipe systems, such systems shall be maintained as dry standpipes. When demolition is started, the standpipe risers shall be capped above the outlet on the floor immediately below the floor being demolished so as to maintain the standpipe system on all lower floors for fire department use. Standpipe hose, nozzles and spanners are not required to be maintained and may be removed at any time. Siamese hose connections shall be kept free from obstruction and shall be marked by a metal sign reading, "Standpipe Siamese Connection" and by a red light at night.
(3) The standpipe system may be used for water supply necessary to demolition operations. In freezing weather such standpipe system shall be completely drained after use to prevent freezing. Existing standpipe systems shall not be utilized to convey compressed air unless the standpipe consists of two or more risers in which event one of the risers may be used to convey compressed air to any floor or portion of the premises upon application to and permission from the fire department.
(4) In structures undergoing demolition which have existing sprinkler systems with siamese hose connections, such system shall be maintained as a non-automatic sprinkler system. When demolition starts, the sprinkler risers shall be capped immediately below the floor being demolished so as to maintain the sprinkler system on all lower floors for fire department use. Siamese hose connections shall be kept free from obstruction and shall be marked by a metal sign reading "Sprinkler Siamese Connection" and by a red light at night.

§[C26-1900.9] 27-1015 Design.-Whenever design is required by the provisions of this subchapter, such design shall be executed by, or under, the supervision of an engineer or an architect who shall cause his or her seal and signature to be affixed to any drawings or specifications that may be required for the work. All such documents shall be kept at the site for inspection by the commissioner for the duration of the job.

§[C26-1900.10] 27-1016 Alternate details and procedures.-Whenever "alternate" or "equivalent" details, materials or procedures are specified in this subchapter, they shall be permitted as provided in section 27-133 of article seven of subchapter one of this chapter. In the absence of specific criteria, the degree of structural safety shall be deemed to require a factor of safety against structural failure consistent with the requirements of subchapter ten of this chapter.

ARTICLE 2 MAINTENANCE OF SITE AND ADJACENT AREAS

§[C26-1901.1] 27-1017 Construction equipment.-
(a) Machinery.-All exposed, electrically charged, moving or otherwise dangerous parts of machines and construction equipment shall be located, guarded, shielded, or barricaded so as to prevent contact by the public.
(b) Services* lines and conduits.-Hose lines, wires, ropes, pipes, chains, etc., shall be located so that they

will not constitute a tripping hazard. Where it is necessary to carry such lines across sidewalks, or any public way, either they shall be suspended at least eight feet above the walks or suitable chamfered planks or a pedestrian bridge shall be provided.

(c) Contractors sheds.-Contractors sheds and offices located within thirty-feet of new construction or existing buildings shall be made of metal or other noncombustible material. Fire retardant treated wood may be used when protected from the weather.

*** *As enacted but "Service" probably intended.*

**** §[C26-1901.2] 27-1018 Housekeeping**.-

(a) All areas used by the public shall be maintained free from ice, snow, grease, debris, equipment, materials, projections, tools, or other item, substance, or condition that may constitute a slipping, tripping, or other hazard.

***Local Law 61-1987.*

(b) When not being used, materials, equipment, and tools that might fall from levels above areas used by the public shall be kept away from edges or openings. When exterior walls are not in place, material piles shall be kept at least ten feet back from the perimeter of the building.

(c) Material may be stored within two feet of the edge of a building provided however that such material is stored not more than two stories below the stripping operation on concrete structures or the uppermost concrete floor on steel frame structures. Such material shall be secured against accidental movement. Storage of material on all other floors shall conform to paragraph (b) of this section and shall be secured when not being used.

(d) Waste dumpsters, debris boxes and skip boxes shall be secured and those containing material or debris shall be covered at the end of each work day. Such waste dumpsters, debris,*** boxes and skip boxes shall not be placed at the edge of the building at any time except when being moved from the floor or building.

(e) Sufficient containers of metal or other material acceptable to the commissioner shall be available for the storage of all garbage and debris. The containers shall be of three-quarter cubic yard minimum capacity.

**** *As enacted but comma probably intended to be omitted.*

§[C26-1901.3] 27-1019 Removal and storage of material.-

(a) Removal of waste material.-Combustible waste material or combustible debris shall not be permitted to accumulate, and shall be removed from the site at reasonable intervals, in accordance with the requirements of the fire department. No material shall be dropped or thrown outside the exterior walls of a building. Precautions shall be taken to prevent concrete or mortar washings, sand, grit, or any other material that would cause clogging from entering a sewer or drain. Provisions of the air pollution control code concerning precautions to prevent particulate matter from becoming airborne shall apply.

(b) Chutes.-When chutes are used for removal of material, they shall meet the following requirements:

(1) ENCLOSURE.-

a. Material chutes that are at an angle of more than forty-five degrees with the horizontal shall be entirely enclosed on all sides, except for openings at the floor levels for the receiving of materials. Such openings shall not exceed forty-eight inches in height, measured along the wall of the chute, and all openings, except the top opening, shall be closed and secured when not in use.

b. Chutes at an angle of less than forty-five degrees with the horizontal may be open on the upper side.

(2) CONSTRUCTION.-

a. Every chute used to convey waste material from a building shall be rigidly supported and braced throughout its height. Chutes less than twenty-four inches in maximum dimension shall be constructed of not less than one inch (nominal) wood or one-eighth inch thick steel. Chutes more than twenty-four inches in maximum dimensions shall be constructed of not less than two inch (nominal) wood or three-sixteenths inch thick steel.

b. Chutes shall be provided with a metal impact plate where material is forced to change direction while falling.

c. A gate shall be provided at the lower end of every chute to control the loading of material into trucks and to close the chute at all other times. Splashboards or baffles shall be erected to prevent materials from rebounding into the street or under the sidewalk shed.

d. A bumper or curb at least four inches by four inches in section shall be provided at each chute opening where such opening is level with, or below, the floor or platform. Every space between the chute and the edge of the opening in the floor or platform shall be solidly planked.

(3) FIRE RETARDANT CONSTRUCTION.-All chutes, constructed of combustible material shall be covered on the exterior with corrugated steel sheeting having a minimum thickness of 24 gage [*sic*] through their entire height or shall be constructed of non-combustible material when used in the following applications:

a. Chutes exceeding seventy-five feet in height.

b. Alteration, repair or partial demolition of buildings classified in occupancy groups H1 and H2.

(4) SUPPORTS.-All structural supports of material chutes shall be of noncombustible material.

(c) Storage of combustible material and equipment.-Storage of combustible material and other material and equipment that present a fire hazard shall meet the requirements of the fire department.

§[C26-1901.4] 27-1020 Obstruction of sidewalks and streets.-The requirements of the department of transportation shall apply with regard to the closing of streets or to the obstruction of any part thereof, except as hereinafter provided. Building department personnel are authorized to consider failure to display a current department of transportation permit for any street or sidewalk closing or obstruction not authorized by this code as a violation of this section; and to direct removal thereof**.**

§[C26-1901.5] 27-1021 Protection of sidewalks.- Unless the street is officially closed to the public during construction operations, the following minimum safeguards shall be provided for the protection of the public:

(a) Types of safeguards and when required.-

* (1) a. A sidewalk shed shall be erected when a structure higher than forty feet is to be constructed or a structure higher than twenty-five feet is to be demolished and the horizontal distance from the structure being built or demolished to the inside edge of the permanent or temporary walkway is equal to one-half or less of the height of the structure. No sidewalk shed shall be erected unless and until a special permit therefor has been issued by the department. Each applicant for a sidewalk shed permit shall state the reason the sidewalk shed is needed. The term of the sidewalk shed permit shall be one year, or upon the expiration of the contractor's insurance, if such time period is less than one year. No renewals of shed permits, except for new buildings under construction, will be given unless an architect or engineer conducts a thorough examination of that part of the premises on which work is being conducted and submits a report acceptable to the commissioner, which clearly documents the condition of the applicable part of the premises and the scope of work that has been performed thereon, and estimates the time needed to complete the work. To renew a shed permit for a new building under construction, each applicant shall file an application with the commissioner. All renewal applications shall include the name and address of the owner of the premises.

Local Law 93-1996;Local Law 33-1991.

b. Following the receipt of a permit to erect a sidewalk shed, the permit holder shall post a sign on the sidewalk shed. Such sign shall include the name, address, telephone number, and permit number of the permit holder. The sign shall also include the date that the permit expires. The sign shall measure twenty-five square feet.

(2) A sidewalk shed shall be erected regardless of the height of the structure or the horizontal distance between the structure and the sidewalk when material or debris is to be moved by a hoist, crane, derrick, or chute over a sidewalk or temporary sidewalk that is not closed to the public.

(3) A fence, in lieu of a sidewalk shed, may be constructed along the inside edge of the walkway or temporary walkway when a structure higher than forty feet is to be constructed or a structure higher than twenty-five feet is to be demolished and the horizontal distance from the structure being built or demolished to the inside edge of the permanent or temporary walkway is between one-half and three-quarters of the height of the structure. If permission to close the sidewalk has been obtained from the department of transportation, such fence may be erected along the curb or outside of the curb to such extent as may be approved by the department of transportation. The fence shall be returned at its ends to the extent necessary to effectively close off the site.

(4) For cases that do not fall within the circumstances described in paragraphs one through three of this subdivision, a standard guard rail (section 27-1050 of article eight of subchapter nineteen of this chapter), in lieu of a sidewalk shed or fence, may be constructed along the inside edge of such walkway or temporary walkway. If permission to close the sidewalk has been obtained from the department of transportation, the railing may be constructed along the curb or outside of the curb to such extent as may be approved by the department [*sic*] of transportation. The railing shall be returned at its ends to the extent necessary to effectively close off the site.

*(5) A sidewalk shed shall be erected when a portion of a facade over forty feet above curb level is being altered or repaired and the horizontal distance from the portion of the structure being altered or repaired to the inside edge of the temporary or permanent walkway is less than one-half the height of the structure being altered or repaired. Applications for sidewalk shed permits shall meet the requirements listed in paragraph one of this subdivision. Where a sidewalk shed is erected in conjunction with the repair of an unsafe condition of a facade, or for the repair of any other violation issued by the department, and such repairs have not been made, and the sidewalk shed has not been removed within two years from the date of issuance of the original sidewalk shed permit, in addition to any of the penalties provided for in section 27-129 of this code, the owner of the building shall be liable for a civil penalty in the amount of two hundred fifty dollars per month for every month or part thereof during which such sidewalk shed is not removed, unless such owner has submitted a report in compliance with section 26-252 of this code and the commissioner determines that the unsafe condition could not be repaired within such two-year period. Provided, however, that nothing in this paragraph shall be construed to prevent the commissioner, prior to the end of such two-year period, from taking action against the owner of a building for failure to repair an unsafe

condition pursuant to section 27-129 of this code or any rules and regulations promulgated thereunder.

** **Local Law 33-1991.***

**(6) Horizontal safety netting shall be provided on the sides of a structure more than six stories or seventy-five feet in height above the adjoining ground or adjoining roof level, whichever is applicable, when, while under construction, the facade of such structure is not enclosed and there is exposure to the public or adjacent property as determined in rules and regulations promulgated by the Commissioner. Vertical safety netting or screening shall be provided at the sides of a structure more than six stories or seventy-five feet in height above the adjoining ground or adjoining roof level, whichever is applicable, when, while under construction, the facade of such structure is not enclosed and is exposed to the public or adjacent property as determined by rules and regulations promulgated by the commissioner. In addition, safety netting shall be provided as required by section 27-1022.

*** **Local Law 61-1987.***

(b) Sidewalk sheds.-

(1) Every sidewalk shed deck shall be designed and constructed to carry a live load of at least three hundred psf. However, a live load of one hundred fifty psf may be permitted for buildings less than one hundred feet in height provided there is no storage thereon. The members of the sidewalk shed shall be adequately braced and connected to prevent displacement or distortion of the framework. Where posts supporting the shed deck are placed beyond the curb, such posts shall be protected against displacement by vehicles.

(2) The deck of the sidewalk shed shall consist of planking closely laid, and made tight.

(3) Steel, or other materials having equivalent strength and suitability may be used in lieu of wood to construct sidewalk sheds.

(4) Where deemed necessary by the commissioner, the deck shall cover the entire width of the sidewalk, except for reasonably small clearances at the building line and the curb.

(5) Except as authorized by paragraph seven, sidewalk sheds shall extend at least the entire length of the property line of the structure unless constructed solely to comply with paragraph two of subdivision (a) of this section, and may extend beyond the curb to such extent as may be approved by the department of transportation.

(6) The outer side and ends of the deck of the shed shall be provided with a substantial enclosure at least three feet six inches high. Such enclosure may be vertical or inclined outward at approximately forty-five degrees, and shall consist of boards laid close together and secured to braced uprights, of galvanized wire screen not less than no. 16 steel wire gage with a one-half inch mesh, of corrugated metal, or of solid plywood. Temporary removal of portions of the enclosure shall be permitted for handling material.

(7) a. For all buildings one hundred feet or more in height, the deck and protective guards of the sidewalk shed shall be extended parallel with the curb at least twenty feet beyond the ends of all faces of the structure [regardless of whether such extensions are in front of the property being developed or in front of adjacent]*** property. Extensions of sidewalk sheds complying with the foregoing shall be constructed so as not to unreasonably obstruct, either visually or physically, entrances, egress, driveways and show windows of adjacent properties.

**** **Copy in brackets not enacted but probably intended.***

b. All sidewalk sheds shall provide a protection for the full width of the shed extending upward at an angle of forty-five degrees from the ends of the deck and outward a horizontal distance of at least five feet beyond the ends of the shed. Such sloping end protection shall be constructed to meet the requirements of paragraph one of this subdivision with substantial outriggers bearing on and securely attached to, the deck.

(8) The passageway shall be wide enough to accommodate pedestrian traffic normal for that location without causing congestion; but in no case shall the width be less than four feet. The passageway shall have a minimum clear ceiling height of eight feet.

(9) Unless the top deck of the sidewalk shed is built solidly against the face of the structure in such a manner that no material can fall onto the sidewalk, the side of the shed toward the structure shall be solidly sealed with wood or other suitable material for the full height of the shed. Solid sliding or in swinging [*sic*] gates may be provided as necessary for the proper prosecution of the work.

*(10) The underside of the sidewalk sheds shall be lighted at all times either by natural or artificial light. The level of illumination shall be the equivalent of that produced by two hundred watt, thirty-four hundred lumen minimum, standard incandescent lamps enclosed in vandal-proof fixtures and spaced fifteen feet apart and eight feet above the floor level. Artificial lighting units shall be inspected nightly; and burned out or inoperative units shall be replaced or repaired immediately.

** **Local Law 33-1991.***

(11) When a sidewalk shed is required for the erection of a structure, construction of the structure shall stop at a height of forty feet unless, and until, the sidewalk shed has been completed. Such shed shall remain in place until the structure is enclosed, all exterior work completed and the sash is glazed above the second story, exterior of the facade is cleaned down, and all outside handling of material, equipment and machinery, and all dismantling of a material hoist, or climber or tower crane or the use of a derrick in their removal,

above the second story is completed.
(12) When a sidewalk shed is required for the demolition of a structure, the sidewalk shed shall be completed before any demolition work is performed. Such shed shall remain in place until the structure has been razed to the height of the shed and as long as necessary to meet the requirements of paragraph two of subdivision (a) of this section .
(c) Fences.-Fences shall be at least eight feet high, and constructed of wood or other suitable material. They shall be built solid for their entire length, except for openings with solid sliding or in swinging *sic*] gates as are required for the proper prosecution of the work, and for viewing panels, which shall be blocked with plexiglass or equivalent nonfrangible material.
(d) Openings in sidewalk sheds, fences, and railings.-Openings in sidewalk sheds, fences, and railings for loading purposes shall be kept closed at all times except during actual loading operations.
(e) Temporary walkways.-Where permission has been granted by the department of transportation to locate a temporary walkway beyond the curb line, such temporary walkway shall be provided with a standard guard rail (section 27-1050 of article eight of subchapter nineteen of this chapter) on the traffic side. All temporary walkways shall be illuminated at all times as required in paragraph ten of subdivision (b) of this section.
(f) Foot bridges.-
(1) When a temporary foot bridge is used as a sidewalk in front of a structure during construction work, the bridge shall be wide enough to accommodate normal traffic without congestion; but in no case shall it be less than four feet. The bridge, and steps or ramps, shall be designed and constructed to carry a live load of one hundred fifty psf. The walkway on such bridge shall be provided with standard guard rails for its entire length and shall be provided with steps at both ends or with inclined ramps at a maximum slope of one in four. Ramps shall have cleats to prevent slipping.
(2) Where planks are used to pave the walkway, they shall be laid close and securely fastened to prevent displacement. Planks shall be of uniform thickness, and all exposed ends on ramps shall be provided with beveled fillers to eliminate tripping hazards.
(3) Foot bridges shall be illuminated at all times as required in paragraph ten of subdivision (b) of this section.
****(g) Safety netting.-**
(1) When required to be installed horizontally, safety netting shall include a structural mesh lined with a fine mesh of a size and strength sufficient to catch falling tools and materials.
(2) When required to be installed vertically, safety netting or its equivalent shall include a fine mesh of a size and strength sufficient to contain falling tools and materials. Such netting shall be secured and kept closed at all times except during actual loading operations or perimeter construction operations.
(3) In addition to the requirements set forth in paragraphs one and two of this subdivision, required safety netting and its supports shall comply with reference standard RS 19-4 and all applicable rules and regulations promulgated by the commissioner. Scaffolding, screening or its equivalent shall comply with rules and regulations promulgated by the commissioner.
***Local Law 61-1987.*

**** §[C26-1901.6] 27-1022 Safety netting and scaffolding.-**
(a) When required.-
(1) When demolishing the exterior walls or the roof of a structure more than six stories or seventy-five feet above the adjoining ground or adjoining roof level, whichever is applicable, horizontal safety netting shall be provided on the sides of a structure where there is exposure to the public or adjacent property as determined by rules and regulations promulgated by the Commissioner unless an exterior built-up scaffold providing equivalent protection has been erected. The horizontal safety netting or scaffolding shall be required in addition to the sidewalk sheds, fences, or railing required under section 27-1021 of this article, and shall be constructed and maintained not more than two stories or thirty feet below the story from which the exterior walls and roof are being removed until such demolition has progressed to within six stories or seventy-five feet of the ground level.
(2) When exterior walls are being constructed more than six stories or seventy-five feet above the adjoining ground or adjoining roof level, whichever is applicable horizontal safety netting shall be provided on the sides of the structure where the facade of such structure is not enclosed and is exposed to the public or adjacent property as determined by rules and regulations promulgated by the commissioner. Such safety netting shall be maintained at a level not more than two stories or thirty feet below the stripping operation on concrete structures or the uppermost concrete floor on steel frame structures and in addition, on such lower stories as required pursuant to rules and regulations promulgated by the commissioner.
(b) Debris shall be removed at least daily from safety netting provided in accordance with the requirements of this section.
(c) Storage of material.- Safety netting shall not be used for storing materials.
***Local Law 61-1987.*

§[C26-1901.7] 27-1023 Warning signs and lights.-
(a) Obstructions and openings.-Where a material pile or other obstruction, or an excavation, opening, or other hazard is located in, or adjacent to, a way open for use by persons other than workmen, such hazard shall be indicated by red flags or signs during daylight hours, and by red lanterns, red lights, oil flares, flashing beacons, lighted signs, or equivalent devices from sunset to sunrise. Such warning devices shall be located no more than thirty feet apart.
(b) Dangerous areas.-In areas where special danger to the public exists, such as at vehicle entrances and exits, hoisting areas, points of storage of explosives or highly flammable material, or discharge ends of chutes, descriptive warning signs shall be provided. Such warning signs shall contain the word "danger" in prominent letters and, where in, or adjacent to, a public way, shall be illuminated from sunset to sunrise. Barricades and/or designated personnel shall be provided to the extent necessary to keep the public away from such areas or to guide them around the areas.
(c) Vehicular traffic.-Whenever any work is being performed over, on, or in close proximity to a highway, street, or similar public way, control and protection of traffic shall be provided by barricades, signals, signs, flagmen, or other devices, equipment, and personnel in accordance with the requirements and standards of the department of transportation.

***§[C26-1901.8] 27-1024 Watchmen and flagmen.-**
(a) Watchmen.-Where a building being constructed or demolished occupies a ground area of more than five thousand square feet, and up to forty thousand square feet, a competent watchman shall be on duty at the site during all hours when operations are not in progress. Where the construction or demolition area occupies a ground area of more than forty thousand square feet at least one additional watchman shall be on duty for each additional forty thousand square feet of construction or demolition area, or fraction thereof. Watchmen shall be familiar with the location of street fire alarm boxes and the location and use of fire fighting equipment required to be on the job site.
(b) Flagmen.-A flagman shall be provided whenever intermittent operations are conducted on, or across, areas open to use by persons other than workmen, or when dangerous operations, such as blasting, may affect such areas.
* ***As enacted but nonsexist terms probably intended.***

§[C26-1901.9] 27-1025 Escape hatches required.-
(a) Where salamanders or other heating equipment are used to provide temporary heating during the placing of concrete for a floor, an escape hatch shall be provided from the floor where the concrete is being placed, which shall extend through at least one story immediately below such floor. The escape hatch shall be located as near to the center of the building as shall be practical.
(b) The escape hatch shall be constructed with at least two ladders enclosed in a metal shield. The ladders shall extend from a distance of three feet above the floor under construction to at least two stories below unless such floor is less than two stories above the lowest floor. The metal shield shall enclose the ladders on all sides from the top of the floor where the concrete is being placed to at least the top of the floor next below.
(c) The inside dimensions between faces of the shield shall be not less than three feet eight inches.
(d) The space between the shield and the perimeter of the opening in the floor under construction and also between the shield and the perimeter of the opening in the floor next below, shall be decked over with two inch or heavier planking covered with plywood or sheet metal so as to make the decking smoke tight. At the termination of the ladders the opening in the floor shall be covered completely with two inch planking or other material of equivalent strength.

ARTICLE 3 PROTECTION OF ADJOINING PROPERTY

§[C26-1902.1] 27-1026 General.-
(a) License to enter adjoining premises.-The provisions of chapter one of title twenty-six of the administrative code, as amended, shall apply.
(b) Physical examination.-
(1) When permission to enter upon adjoining property has been obtained, a physical examination of such property shall be conducted by the person initiating the construction or demolition operations prior to the commencement of the operations and at reasonable periods during the progress of the work.
(2) During demolition operations, the provisions of section 27-1037 of article six of this subchapter shall also apply.
(c) Adjoining walls.-When any construction operation exposes or breaches an adjoining wall, the contractor shall maintain the structural integrity of such wall and maintain all required fire exits and passageways or provide substitutions meeting the requirements of this code. Portions of the wall exposed by construction operations shall be protected against the elements, and shall be restored or left permanently protected after completion of operations.
(d) Weatherproof integrity of adjoining buildings.-Where the weatherproof integrity of an adjoining building is impaired by construction operations, the flashing shall be restored, copings replaced, or other necessary measures taken to restore the weatherproof integrity of such adjoining buildings. See paragraph three of subdivision (a) of section 27-1037 of article six of this subchapter.

§[C26-1902.2] 27-1027 Abandoned and discontinued operations.-

(a) Fencing.-If any construction operation is abandoned, discontinued or interrupted, a solid fence at least eight feet high shall be provided to protect the public from potential hazards on the site.

(b) Filing and grading**.-If an excavation has been completed or partly completed and discontinued or interrupted, and the required permit has expired under the provisions of section 27-196 of article nineteen of subchapter one of this chapter and a permit for a proposed building has not been issued within six months after the completion of such operations, the lot shall be filled and graded to eliminate all steep slopes, holes, obstructions, or similar sources of hazard. Fill shall consist of clean, noncombustible material. The final surface shall be graded in such a manner as to drain the lot, eliminate pockets in the fill, and prevent the accumulation of water, without damaging any foundations on the premises or on adjoining property.

** *As enacted but "filling" probably intended.*

§[C26-1902.3] 27-1028 Excavation or filling operations affecting adjoining property.-Whenever an excavation or fill is to be made that will affect safety, stability, or usability of adjoining properties or buildings, the adjoining properties or buildings shall be protected as required by the provisions of article four of this subchapter.

§[C26-1902.4] 27-1029 Foundation operations affecting adjacent properties.-Whenever subsurface operations are conducted that may impose loads or movements on adjoining property, such as driving of piles, compaction of soils, or soil solidification, the effects of such operations on adjoining property and structures shall be considered. The owner of the property that may be affected shall be given forty-eight hours written notice of the intention to perform such operations. Where construction operations will cause changes in the ground water level under adjacent buildings, the effects of such changes on the stability and settlement of the adjacent foundations shall be investigated and provision made to prevent damage to such buildings. When in the opinion of the commissioner a potential hazard exists, elevations of the adjacent buildings shall be recorded by an architect or engineer at intervals of twenty-four hours or less as determined by the commissioner to ascertain if movement has occurred.

§[C26-1902.5] 27-1030 Protection of trees.-No trees outside the street line shall be disturbed or removed without the permission of the commissioner of parks and recreation. Protection meeting the requirements of the department of parks and recreation shall be provided around the trunks of all such trees, and written notification shall also be made to the department of parks and recreation at least forty-eight hours prior to commencement of such work. No deleterious, caustic, or acid materials shall be dumped or mixed within ten feet of any such tree, nor shall salt for the removal of ice or snow be applied when runoff will drain to a tree.

ARTICLE 4 EXCAVATION OPERATIONS

§[C26-1903.1] 27-1031 General requirements.-The provisions of this section shall apply to all excavations, including those made for the purposes of taking earth, sand, gravel, or other material as well as for purposes of construction. The provisions of article three of this subchapter as applicable shall apply. The provisions of subchapter seven of chapter one of title twenty-six of the administrative code, as amended, shall also apply.

(a) Support of adjoining ground.-

(1) RETAINING STRUCTURE REQUIRED.-When the regulation of a lot requires the ground on such lot to be raised or lowered and kept higher than the ground of an adjoining lot, provided the ground of such adjoining lot is not maintained at a grade lower than in conformity with the street or streets on which it is situated, or where an excavation has been made or a fill placed on any lot meeting the curb level requirements, and the adjoining land is maintained at a grade in conformity with or lower than the street or streets on which it is situated, and is without permanent structures other than frame sheds or similar structures, a retaining structure shall be constructed as required for the safe support of the adjoining ground and unless the bank between the adjoining properties is maintained at a safe angle of repose. Any necessary retaining wall shall be built and maintained jointly by the owners on each side, unless otherwise agreed to by both owners.

(2) SURPLUS RETAINING STRUCTURE.-Where any owner shall insist on maintaining his or her ground either higher or lower than the legal regulation prescribed in the administrative code, the surplus retaining structure that may be necessary to support such height or provide for such excavation shall be made and maintained at the sole expense of such owner, and any additional thickness that may be required shall be built on the land of such owner.

(3) REMOVAL OF RETAINING STRUCTURES-Any retaining structure erected as provided under paragraphs one and two of this subdivision, standing partly on the land of each owner, may be removed by either owner when the original reason for the erection of such retaining structure ceases to exist.

(b) Support of adjoining structures.-

(1) EXCAVATION DEPTH MORE THAN TEN FEET.-When an excavation is carried to a depth more than ten feet below the legally established curb level the person who causes such excavation to be made shall, at all times and at his or her own expense, preserve and

protect from injury any adjoining structures, the safety of which may be affected by such part of the excavation as exceeds ten feet below the legally established curb level provided such person in afforded a license to enter and inspect the adjoining buildings and property.

a. Such person shall support the vertical load of the adjoining structure by proper foundations, underpinning, or other equivalent means where the level of the foundations of the adjoining structure is at or above the level of the bottom of the new excavation.

b. Where the existing adjoining structure is below the level of the new construction, provision shall be made to support any increased vertical or lateral load on the existing adjoining structure caused by the new construction.

c. Where the new construction will result in a decrease in the frost protection for an existing foundation below the minimums established in subchapter eleven of this chapter, the existing foundation shall be modified as necessary to restore the required frost protection.

(2) EXCAVATION DEPTH TEN FEET OR LESS.-Where an excavation is carried to a depth of ten feet or less below the legally established curb level, the owner of the adjoining structure shall preserve and protect the safety of his or her structure provided such owner is afforded a license to enter and inspect the property where the excavation is to be made.

(c) Support of party walls.-Where a party wall will be affected by excavation, regardless of the depth, the person who causes the excavation to be made shall preserve such party wall at his or her own expense so that it shall be, and shall remain, in a safe condition.

(d) Drainage.-All excavations shall be drained and the drainage maintained as long as the excavation continues or remains. Where necessary, pumping shall be used. No condition shall be created as a result of construction operations that will interfere with natural surface drainage. Water courses, drainage ditches, etc., shall not be obstructed by refuse, waste building materials, earth, stones, tree stumps, branches, or other debris that may interfere with surface drainage or cause the impoundment of surface waters.

(e) Access.-Every excavation shall be provided with safe means of ingress and egress kept available at all times.

§[C26-1903.2] 27-1032 Protection of sides of excavations.-

(a) Shoring and bracing and sheeting.-With the exception of rock cuts, the sides of all excavations, including related or resulting embankments, five feet or greater in depth or height measured from the level of the adjacent ground surface to the deepest point of the excavation, shall be protected and maintained by shoring, bracing and sheeting, sheet piling, or by other retaining structures. Alternatively, excavated slopes may be inclined not steeper than forty-five degrees or stepped so that the average slope is not steeper than forty-five degrees with no step more than five feet high, provided such slope does not endanger any structure, including subsurface structures. All sides or slopes of excavations or embankments shall be inspected after rainstorms, or any other hazard-increasing event, and safe conditions shall be restored. Sheet piling and bracing used in trench excavations shall be at least equivalent in strength to that specified in tables 19-1 and 19-2.

(b) Guard rail.-In addition to the requirements of section 27-1021 of article two of this subchapter, a standard guard rail or a solid enclosure at least three feet six inches high shall be provided along the open sides of excavations, except that such guard rail or solid enclosure may be omitted from a side or sides when access to the adjoining area is precluded, or where side slopes are one vertical to three horizontal or flatter.

(c) Placing of construction material.-Excavated material and superimposed loads such as equipment, trucks, etc., shall not be placed closer to the edge of the excavation than a distance equal to one and one-half times the depth of such excavation, unless the excavation is in rock or unless the sides of the excavation have been sloped or sheet piled (or sheeted) and shored to withstand the lateral force imposed by such superimposed loads. When sheet piling is used, it shall extend at least six inches above the natural level of the ground. In the case of open excavations with side slopes, the edge of excavation shall be taken as the toe of the slope.

(d) Mechanical diggers.-Where trenching more than five feet in depth is done by a mechanical digger, the required protection shall follow the boom as closely as practical.

ARTICLE 5 ERECTION OPERATIONS

§[C26-1904.1] 27-1033 Protection of sidewalks.-The provisions of section 27-1021 of article two of this subchapter as applicable shall apply.

§[C26-1904.2] 27-1034 Structural steel assembly.-

(a) Placing of structural members.-

(1) During the placing of a structural member, the load shall not be released from the hoisting rope until the member is securely supported.

(2) Open web steel joists that are hoisted singly shall be transferred from their place of storage directly to their permanent location and safely secured. No load shall be placed on open web steel joists until they are permanently fastened in place.

(b) Tag lines.-While structural members or assemblies are being hoisted, tag lines shall be used to prevent uncontrolled movement.

(c) Erection of trusses.-All trusses shall be laterally braced or guyed as necessary for the safety of the structure.

(d) Erection of frames.-All structural frames shall be properly braced with shores or guyed cables and turnbuckles as necessary for the safety of the structure.

TABLE 19-1 MINIMUM SIZES OF TIMBER BRACING AND TIMBER SHEET PILING FOR TRENCHES FOUR FEET WIDE OR LESS[a]

Depth of Trench, (ft.)	Sheet Piling Size (in.)	Sheet Piling Horizontal Spacing (ft.)	Stringers Size (in.)	Stringers Vertical Spacing (ft.)	Cross Bracing Size (in.)	Cross Bracing Horizontal Spacing (ft.)
			Hard and solid soil			
5-10……	2 x 6	6	2 x 6	6	2 x 6	6
10-15……...	2 x 6	4	2 x 6	6	2 x 6	4
More than 15...	2 x 6	tight	4 x 8	4	4 x 8	6
			Soil likely to crack or crumble			
5-10……	2 x 6	3	2 x 6	5	2 x 6	5
10-15……...	2 x 6	2	2 x 6	4	2 x 6	4
More than 15...	2 x 6	tight	4 x 10	4	4 x 10	6
			Soft, sandy filled-in loose soil			
5-10……	2 x 6	tight	4 x 6	6	4 x 6	6
10-15……...	2 x 6	tight	4 x 6	5	4 x 6	6
More than 15...	2 x 6	tight	4 x 12	4	4 x 12	6
			Where hydrostatic pressure exists			
To 10……...	2 x 6	tight	6 x 8	4	6 x 8	6
More than 10...	3 x 6	tight	6 x 10	4	6 x 10	6

Note for Table 19-1:

[a]Steel sheet piling and bracing of equivalent strength may be substituted for wood sheet piling and timber bracing.

TABLE 19-2 MINIMUM SIZES OF TIMBER BRACING AND TIMBER SHEET PILING FOR TRENCHES FOUR TO EIGHT FEET WIDE[a]

Depth of trench, (ft.)	Sheet Piling Size (in.)	Sheet Piling Horizontal Spacing (ft.)	Stringers Size (in.)	Stringers Vertical Spacing (ft.)	Cross Bracing Size (in.)	Cross Bracing Horizontal Spacing (ft.)
			Hard and solid soil			
5-10……	2 X 6	6	4 X 6	4	4 X 6	6
10-20……...	2 X 6	tight	6 X 6	4	6 X 6	6
More than 20...	2 X 6	tight	6 X 8	4	6 X 8	6
			Soil likely to crack or crumble			
5-10……	2 X 6	3	4 X 6	4	4 X 6	6
10-20……...	2 X 6	tight	6 X 6	4	6 X 6	6
More than 20...	2 X 6	tight	6 X 8	4	6 X 8	6
			Soft, sandy filled-in loose soil			
5-10……	2 X 6	tight	4 X 6	4	4 X 6	6
10-20……...	2 X 6	tight	6 X 6	4	6 X 6	6
More than 20...	2 X 6	tight	6 X 8	4	6 X 8	6
			Where hydrostatic pressure exists			
To 10……...	2 X 6	tight	6 X 8	4	6 X 8	6
More than 10...	3 X 6	tight	6 X 10	4	6 X 10	6

Note for Table 19-2:

[a]Steel sheet piling and bracing of equivalent strength may be substituted for wood sheet piling and timber bracing.

§[C26-1904.3] 27-1035 Concrete formwork.-

(a) General requirements.-

(1) Formwork, including all related braces, shoring, framing, and auxiliary construction shall be proportioned, erected, supported, braced, and maintained so that it will safely support all vertical and lateral loads that might be applied until such loads can be supported by the permanent construction.

(2) Vertical and lateral loads shall be carried to the ground by the formwork system, by the new construction after it has attained adequate strength for that purpose, or by existing structures.

(3) Forms shall be properly braced or tied together so as to maintain position and shape, and shall conform to the sizes and shapes of members as shown on the design drawings.
(4) Ramps and runways shall meet the requirements of article nine of this subchapter.
(b) Inspection.-
(1) Formwork, including shores, reshores, braces, and other supports, shall be inspected by an engineer or architect to verify the sizes of the concrete members being formed, as provided in article five of subchapter ten of this chapter. In addition, such forms shall be inspected for conformance with the form design drawings, when such drawings are required by the provisions of subdivision (c) of this section; and/or conformance with the provisions of this section. Such inspections may be made by the person superintending the work. Both such inspections shall be made prior to placement of reinforcing steel. Subsequently, inspections shall be made by the person superintending the work periodically during the placement of concrete to detect incipient problems.
(2) During and after concreting, the elevations, camber, and vertical alignment of formwork systems shall be checked using tell-tale devices.
(3) A record of all such inspections shall be kept at the site available to the commissioner, and the names of the persons doing the inspecting and the name of the foreman in charge of formwork shall be posted in the field office.
(c) Design of concrete formwork.-Wherever the shore height exceeds fourteen feet or the total load on the forms exceeds one hundred fifty psf, or wherever power buggies or two-stage shores are used, the forms, including shoring foundation, shall be designed as provided in section 27-1015 of article one of this subchapter, and shall be constructed in conformance with such design. Formwork drawings shall be prepared. The allowable stresses for design shall meet the requirements of subchapter ten of this chapter. A copy of the design drawings and any construction drawings and specifications shall be kept on the job available to the commissioner.
(1) VERTICAL LOADS.-Vertical loads shall include the total dead and live loads. Dead load shall include the weight of formwork plus the weight of the reinforcement and fresh concrete. Live load shall allow for the weight of workers and equipment, with allowance for impact, but in no case shall less than twenty psf be allowed.
(2) LATERAL CONCRETE PRESSURE.-Design of forms, ties, and bracing shall assume that minimum lateral pressures of fresh concrete are as shown in table 19-3.

TABLE 19-3 MINIMUM LATERAL PRESSURES TO BE ASSUMED FOR FRESH CONCRETE WEIGHING 150 POUNDS PER CUBIC FOOT

Type of Work	Minimum Lateral Pressure Assumed (psf)	Limitations
Columns: Ordinary work with normal internal vibration	$p = 150 + \frac{9000R}{T}$	Maximum 3,000 psf or 150h, whichever is less
Walls: Rate of placement at 7 ft. per hr. or less	$p = 150 + \frac{9000R}{T}$	Maximum 2,000 psf or 150h, whichever is less
Walls: Rate of placement at greater than 7 feet per hr.	$p = 150 + \frac{43400}{T} + \frac{2800R}{T}$	Maximum 2,000 psf or 150h, whichever is less
Slabs	$p = 150h$	None

Where:
R = rate of placement, ft. per hr.
T = temperature of concrete in the forms, deg. F.
h = height of fresh concrete above point considered, ft.

Notes for Table 19-3:

[a]Allowances for change in lateral pressure shall be made for concrete weighing [*sic*] other than one hundred fifty pcf; for concrete containing pozzolanic additions or cements other than type I, for concrete having slumps greater than six in., or for concrete consolidated by revibration or external vibration of forms.

[b]Where retarding admixtures are employed under hot weather conditions an effective value of temperature less than that of the concrete in the forms shall be used in the above formulae.

[c]If retarding admixtures are used in cold weather, the lateral pressure may be assumed as that exerted by a fluid weighing [*sic*] one hundred fifty pcf.

(3) EXTERNAL LATERAL LOADS.-
a. Braces and shores shall be designed to resist all external lateral loads such as wind, cable tensions, inclined supports, dumping of concrete, and starting and stopping of equipment.
b. In no case shall the assumed value of lateral load due to wind, dumping of concrete, and equipment acting in any direction at each floorline be less than one hundred plf edge or two percent of total dead load of the floor, whichever is greater.
c. Except for foundation walls that are poured against a rigid backing, wall forms shall be designed for a minimum lateral load of ten psf, and bracing for wall forms shall be designed for a lateral load of at least one hundred plf of wall, applied at the top. The lateral load acting on walls greater than fourteen feet high shall be determined by analysis of conditions applicable to the site and building.
(4) SPECIAL LOADS.-The formwork shall be designed for any special conditions of construction likely to occur, such as unsymmetrical placement of concrete, impact of machine-delivered concrete, uplift, and concentrated loads.
(5) SHORING AND BRACING.-
a. When patented or commercial devices that are not susceptible to design are used for shoring, bracing, or splicing, they shall be approved.
b. Splices shall develop the full strength of the spliced members.
c. Where shore height exceeds ten feet, or when necessary to provide structural stability, diagonal bracing shall be provided. Struts, anchored into masonry or to panel joints of adjacent braced bays, may be used to prevent buckling of individual members not supported by the diagonal bracing; but, bracing an entire tier of shores with struts without diagonal bracing will not be permitted unless the system can be demonstrated to be braced by other rigid construction.
d. The unbraced length of shores shall not exceed the maximum length determined in accordance with the applicable reference standard in subchapter ten of this chapter for the structural material used.
(6) FOUNDATIONS.-Foundations for shores more than ten feet high and supported on the ground shall be designed.
(7) SETTLEMENT.-Falsework shall be so constructed that vertical adjustments can be made to compensate for take-up and settlements. Wedges, jacks, or other positive means shall be provided for this purpose.
(8) POWER BUGGIES.-For special requirements for runways, ramps, and platforms used by power buggies, see section 27-1053 of article nine of this subchapter.
(**d) Construction.-**
(1) Field constructed lap splices, other than approved devices, shall not be used more often than for every other shore under slabs or for every third shore under beams, and shall develop the full strength of the members. Such spliced shores shall be uniformly distributed throughout the work. Splices shall not be located near the midheight of the shores unless lateral support is provided, nor midway between points of lateral support.
(2) Vertical shores for multifloor forms shall be set plumb and in alignment with lower tiers so that loads from upper tiers are transferred directly to the lower tiers, or adequate transfer members shall be provided. Provision shall be made to transfer the lateral loads to the ground or to completed construction of adequate strength.
(3) Vertical shores shall be so erected that they cannot tilt, and shall have firm bearing. Inclined shores and the bearing ends of all shores shall be braced against slipping or sliding. The bearing surfaces shall be cut square and have a tight fit at splices.
(4) Runways for moving equipment shall be provided with struts or legs as required, and shall be supported directly on the formwork or structural member and not on the reinforcement.
(5) Any unsafe condition or necessary adjustment revealed by inspection shall be remedied immediately. If, during construction, any weakness develops and the falsework shows any undue settlement or distortion, the work shall be stopped, the affected construction removed if permanently damaged, and the falsework strengthened.
(e) Removal of forms and shoring.-
(1) Forms shall be removed in such a manner as to assure the complete safety of the structure.
(2) Where the structure as a whole is supported on shores, then beam and girder sides, columns, and similar vertical forms may be removed after twenty-four hours provided the concrete is sufficiently hard to withstand damage thereby. In no case shall the supporting forms or shoring be removed until the members have acquired sufficient strength to support safely their weight and the load thereon.
(3) The results of control tests, including concrete cylinder specimens prepared in accordance with reference standard RS 10-52, cast-in-place cores, or other device which will produce test specimens representative of the condition of the concrete in place, of suitable size and proportions, and approved by the architect or engineer shall be deemed evidence that the concrete has attained sufficient strength or such strength as may be specified on the drawings. The contractor may submit alternate methods of stripping, reshoring, and strength control for approval by the architect or engineer and subject to review by the commissioner.
(f) Reshoring.-Reshoring shall be provided to support the construction where forms and shores are stripped before the concrete has gained adequate strength to support the superimposed loads due to construction above.

*(1) INSTALLATION LIMITATIONS.-Reshores of wood or metal shall be screw adjusted or jacked and locked or wedged. Wedges shall not be used within ten feet of the facade or at such other locations as determined by rules and regulations promulgated by the commissioner. Reshores shall not be jacked or screwed so tight that they preload the floor below or remove the normal deflection of the slab above. In no case shall shores be so located as to significantly alter the pattern of stresses determined in the original structural analysis or to induce tensile stresses where reinforcing bars are not provided. Reshores within ten feet of the facade shall be secured.

Local Law 61-1987.

(2) BRACING. - Lateral bracing shall be provided during reshoring operations, and reshores shall be located as close as practical to the same position on each floor to provide continuous support from floor to floor.

(3) RESHORING BEAM AND GIRDER CONSTRUCTION.- Where reshoring of beam and girder construction is required, the forms shall not be removed from more than one girder at a time, and the girder shall be reshored before any other supports are removed. After the supporting girders are reshored, the form shall be removed from one beam with its adjacent slabs and the beam shall be reshored before any other supports are removed. Slabs spanning ten feet or more shall be reshored along the center line of the span.

(4) RESHORING FLAT SLABS.-Where reshoring of flat slab construction is required, the shores for the area within the intersection of the middle strips of each panel shall be left in place at all times until the concrete has attained sufficient strength to support the loading to which it will be subjected. After the other shores in each panel have been removed, reshores shall be placed on the column lines at [*sic*] the mid-points between columns, before the next panel is stripped.

(g) Slip form construction.-

(1) The applicable provisions of subdivision (c) of section 27-1035 of this article shall apply.

(2) All slip forms shall be designed, and the construction and sliding operations shall be carried out under the personal supervision of the person superintending the work or his or her designated representative.

(3) Lateral and diagonal bracing for forms shall be provided to insure that the shape of the structure will not be unduly distorted during the sliding operation.

(4) Jacks shall be spaced, anchored, and operated in such a manner that the vertical load on all jacks is approximately equal and does not exceed the capacity of any jack. Jacks shall be provided with automatic holding devices.

(5) Forms shall be leveled before and after they are filled, and shall be maintained level throughout the slide. Drifting of the forms from alignment or designed dimensions, and torsional movement shall be prevented. Horizontal and vertical alignment of structure shall be checked at least once during every twenty-four hours that the slide is in operation.

(h) Lift method construction.-

(1) The casting bed and supporting construction shall be designed to carry the dead load of the stacked slabs and any live load that may be imposed.

(2) Slabs shall not be lifted until the concrete has attained adequate strength to support its own weight and any superimposed loads without exceeding the stress values established in subchapter ten of this chapter.

(3) Lifting of all parts of the slab shall be approximately simultaneous and at a uniform rate. The lifting equipment shall be constantly engaged to prevent slippage or retrogression of the slab during lifting operations.

(4) Care shall be taken to insure that collar keyholes or other lifting attachment openings are in direct vertical alignment for all slabs. Wedges shall be inserted between the collar opening and column to maintain clearance on all sides of the column. Blockouts shall be provided to prevent concrete from entering space between collar and column as well as the lifting attachment openings.

(5) Temporary bracing for lateral support of columns shall be provided during lifting operations and shall remain in place until its function can be assumed by permanent connections of slabs to columns, permanent bracing walls, or other means of lateral support, unless it can be shown that all columns, their base connections to footings, the footings, and soil are adequate as a cantilever system to resist all prescribed lateral forces.

(6) The assumed value of lateral forces in lift slab construction due to unsymmetrical loads, lifting reactions, or wind shall be at least fifty plf of floor edge or one percent of the total load lifted, whichever is greater.

(7) No person shall be allowed to enter the area immediately under slabs during the actual movement of lifting nor shall any construction operations be commenced in this area, other than fixing the connections of slabs to columns or providing other positive supports, until such connections or supports are completed and the load of all lifted slabs has been transferred from lifting equipment thereto.

(i) Prestressed construction.-Solid safety shields shall be provided at end anchorages of prestressing beds, or where necessary, for protection against breakage of prestressing strands, cables, or other assemblies during prestressing or casting operations.

ARTICLE 6 DEMOLITION OPERATIONS

§[C26-1905.1] 27-1036 Preparations.-

(a) Utilities and service lines.-The provisions of section 27-1013 of article one of this subchapter and article fourteen of subchapter one of this chapter shall apply.

(b) Condition of structure.-Where a structure to be demolished has been partially wrecked or weakened by fire, flood, explosion, age, or other causes, it shall be shored or braced to the extent necessary to permit orderly demolition without collapse. The necessary measures shall be determined by the contractor subject to approval by the commissioner.

(c) Hazards to be removed.-

(1) Before commencement of actual demolition, all glass in windows, doors, skylights, and fixtures shall be removed.

(2) In any structure more than twenty-five feet high, any window or other exterior wall opening that is within twenty-feet of a floor opening used for the passage of debris from floors above shall be solidly boarded up or otherwise substantially covered, unless such window or opening is so located as to preclude the possibility of any person being injured by material that may fall from such window or opening. See section 27-1022 of article two of this subchapter.

(3) Before demolition is started, the cellar and all floors shall be thoroughly cleaned of combustible materials and debris. All fixtures and equipment that would cause voids in the fill shall be removed. If the cellar is to be filled to grade, the first floor construction shall be removed and the existing cellar floor shall be broken up to the extent necessary to provide ground drainage and prevent accumulation of water. If the cellar is not to be filled, positive cellar drainage shall be provided.

(d) Examination and procedure.-Before any material is stored on any floor, the existing flooring adjacent to the bearing walls shall be removed and ends of floor beams in the bearing walls shall be carefully examined to ascertain their condition and the amount of bearing on the bearing wall. If they are found to be in poor condition or to have insufficient bearing, no material shall be deposited on the floor until these beams are shored from the cellar floor through each successive floor. No bearing partition shall be removed from any floor until the floor beams on the floor above have been removed and lowered. All header beams and headers at stair openings and chimneys shall be carefully examined, and where required shall be shored from the cellar floor through successive floors. All operations shall be continually inspected as the work progresses to detect any hazards that may develop.

§[C26-1905.2] 27-1037 Protection of adjacent structures.-The applicable provisions of article three of this subchapter shall apply.

(a) Adjoining walls.-

(1) All beams in party walls shall be cut off close to the walls, stub ends removed without weakening existing masonry, and beam pockets cleaned of loose mortar. The owner of the demolished structure shall, at his or her own expense, bend over all wall anchors at the beam ends in the standing wall and shall brick-up all open beam holes with sound brick and cement mortar.

(2) The stability and condition of the remaining walls shall be investigated and all necessary steps taken to protect same. Where the floor beams of the adjacent building bear on the party wall, the person causing the demolition to be made shall ascertain that such beams are anchored into the wall and, where such anchorage is lacking, shall provide anchorage or otherwise brace the standing wall.

(3) Roofing material of adjoining buildings shall be bent over and flashed. All door or other openings in party walls shall be sealed and weatherproofed. Cornices, where cut, shall be properly sealed. Parapets and any walls that have been disturbed shall be pointed up and made weathertight. All exposed furring, lath, and plaster on party walls shall be removed, and any loose wall material shall be firmly anchored or removed and replaced.

(4) All unnecessary chimney breasts, projections and any other debris exposed on party walls shall be removed by the person causing the demolition of the structure and all openings shall be bricked up flush on the exterior side of the party wall. All masonry which is in poor condition shall be pointed and patched.

(b) Party wall exits.-No party wall balcony or horizontal fire exit shall be demolished, removed, or obstructed in any manner that would destroy the full effectiveness of such fire exit as means of egress, unless a substitute means of egress meeting the requirements of this code has been provided.

§[C26-1905.3] 27-1038 Protection of sidewalks.-The provisions of section 27-1021 of article two of this subchapter as applicable shall apply.

§[C26-1905.4] 27-1039 Demolition operations.-

(a) Walls.-

(1) Demolition of walls and partitions shall proceed in a systematic manner, and all work above each tier of floor beams shall be completed before any of the supporting structural members are disturbed.

(2) Sections of masonry walls shall not be loosened or permitted to fall in such masses as to affect the carrying capacity of floors or the stability of structural supports.

(3) No wall, chimney, or other structural part shall be left in such condition that it may collapse or be toppled by wind, vibration or any other cause.

(4) No section of wall with a height more than twenty-two times its thickness shall be permitted to stand without bracing.

(5) Where brick or masonry chimneys cannot be safely toppled or dropped, all materials shall be dropped down on the inside of such chimneys.

(6) All enclosed vertical shafts and stairs shall be maintained enclosed at all floors except the uppermost floor being demolished, and all work on the uppermost floor shall be completed before stair and shaft enclosures on the floor below are disturbed. All hand rails and banisters

shall be left in place until actual demolition of such floor is in progress.

(b) Structural steel and heavy timbers.-

(1) Steel and heavy timber construction shall be demolished column length-by-column length and tier-by-tier. Any structural member that is being dismembered shall not be supporting any load other than its own weight, and such member shall be chained or lashed in place to prevent any uncontrolled swing or drop.

(2) Structural members shall not be thrown or dropped from the building, but shall be slowly and carefully lowered by hoists equipped with adequate brakes and non-reversing safety devices.

(c) Use of derricks.-Where a derrick is used for demolition, an investigation of the floor on which the derrick rests shall be made by an engineer or architect to determine its adequacy for the loading to be imposed; strengthening shall be designed and added as required to limit the imposed stresses to the values permitted by the provisions of subchapter ten of this chapter. A report summarizing such investigation and design shall be prepared and kept at the site available to the commissioner.

(d) Mechanical methods of demolition.-The mechanical method of demolition, whereby the wrecking of a building or part thereof is accomplished by smashing the walls or floors with a heavy weight suspended by a cable, or whereby the walls are collapsed by the use of a power shovel, tractor, or other mechanical contrivance, shall be permitted only upon issuance of a special permit by the department and in accordance with the following requirements:

(1) The building or structure, or remaining portion thereof, shall not be more than eighty feet in height.

(2) A safety zone, as determined by the commissioner, shall be provided around the demolition area. Fences constructed as required in section 27-1021 of article two of this subchapter shall be erected to prevent persons other than workers from entering such safety zone.

(3) Unless permitted by the commissioner, the mechanical method of demolition shall not be used where any building, or portion thereof, occupied by one or more persons is located within the safety zone.

(4) Where a swinging weight is used, two or more separate cable slings shall be used to attach the ball to a safety or moused hook and the supporting cable shall be of such length or so restrained that it is not possible for the weight to swing against any structure other than the structure being demolished.

(5) Where mechanical demolition operations may involve a street, the requirements of the department of transportation shall be met.

(e) Removal and storage of material.-

(1) PHYSICAL REMOVAL.-Debris, bricks, and similar material shall be removed by means of chutes, buckets, or hoists or through openings in the floors of the structure. Openings in any floor shall not aggregate more than twenty-five percent of the area of that floor unless it can be shown to the satisfaction of the commissioner that larger openings will not impair the stability of the structure.

a. Every opening used for the removal of debris in every floor except the top or working floor, shall be provided with a tight enclosure from floor to floor, equivalent to that afforded by planking not less than two inches in thickness. As an alternative in buildings when not more than six stories in height, such openings may be protected by a tight temporary covering equivalent to that afforded by planks not less than two inches in thickness and laid close. Wherever such covering has been temporarily removed to permit debris removal floor openings shall be protected by standard guard rails or railings. Such covering shall be promptly replaced in position upon the ceasing of such work at the end of each work day.

b. Every opening not used for the removal of debris in any floor shall be solidly planked over.

(2) STORAGE OF MATERIAL.-

a. Material shall not be stored on catch platforms, working platforms, floors, or stairways of any structure except that any one floor of a building to be demolished may be used for the temporary storage of material when such floor can be shown to be of adequate strength to support one and one-half times the load to be superimposed.

b. Storage spaces shall not interfere with access to any stairway or passageway, and suitable barricades shall be provided so as to prevent material from sliding or rebounding into any space accessible to the public. All material shall be safely piled in such storage locations in a manner that will not overload any part of the structure or create any hazard.

c. In buildings of noncombustible construction, floor slabs to an elevation of not more than twenty-five feet above the legally established curb level may be removed to provide temporary storage for debris, provided that: (1) the stored debris is piled with sufficient uniformity to prevent lateral displacement of interior walls or columns; (2) the height of the piled material will not burst the exterior walls due to accumulated pressure; and (3) the operation does not otherwise endanger the stability of the structure.

d. Debris stored in the cellar shall not be piled above the level of the adjacent exterior grade unless the contractor provides sheet-piling, shoring, bracing, or such other means necessary to insure the stability of the walls and to prevent any wall from collapsing due to the pressure of accumulated material.

(f) Dust.-Dust producing operations shall be wetted down to the extent necessary to lay the dust.

(g) Use of explosives.-The use of explosives in demolition operations shall conform to the requirements and limitations imposed by the fire department. The toppling of buildings by the use of explosives is prohibited except where such procedure is permitted by the commissioner.

(h) Temporary elevators.-Whenever, in the course of

building demolition, the work is at a height greater than seventy-five feet, at least one elevator meeting the requirements of subchapter eighteen of this chapter shall be kept in readiness at all times for fire department use.

§[C26-1905.5] 27-1040 Completed demolitions.-At the completion of demolition operations, unless new construction is to follow within a period of thirty calendar days, the site shall be graded, drained, or otherwise protected as provided in section 27-1027 of article three of this subchapter.

ARTICLE 7 REPAIR AND ALTERATION OPERATIONS

§[C26-1906.1] 27-1041 General requirements.-Building repair or alteration operations shall be considered as construction operations and shall be governed by the regulations established in this subchapter. Where alterations are conducted in occupied buildings, barricades, signs, drop cloths, etc., shall be erected as required to provide reasonable protection for the occupants against hazard and nuisance.

ARTICLE 8 SCAFFOLDS

§[C26-1907.1] 27-1042 General provisions for all scaffolds.-All scaffolds shall be erected and maintained so that the safety of public and property will not be impaired by falling material, tools or debris or by collapse of the scaffold.

(a) Materials and construction.-

(1) All lumber used in scaffolds or their supports shall be at least equal in strength and quality to construction grade Douglas fir.

TABLE 19-4 SIZE AND NUMBER OF NAILS REQUIRED FOR SCAFFOLD CONSTRUCTION

Thickness of Smaller Member (in.)	Trade Size of Nail	Length of Nail (in.)
1	8d	2 ½
2	20d	4
3	60d	6
4	—	8

Width of Smaller Member (in.)	Minimum Number of Nails Required
4	2
6	3
8	4
10	5
12	5

(b) Loading and design.-

(1) DESIGN REQUIRED.-All exterior pole scaffolds over seventy-five feet high and all multiple-point suspension scaffolds, including all supports, fastenings, connections, and details, shall be designed. Design drawings shall be prepared and kept at the site available to the commissioner. The construction shall be executed in accordance with such design. All other scaffolding shall be constructed of sizes and numbers of members as hereinafter required or, in the absence of such requirements shall be demonstrated to be capable of supporting, without collapse, not less than four times the maximum weight required to be suspended therefrom or placed thereon when in use.

(2) LOADING.-No standard scaffold as defined herein, shall be loaded in excess of the maximum load for which it is designated in paragraph three of this subdivision. Loads shall not be concentrated so as to cause stresses in excess of the allowable values designated in subchapter ten of this chapter.

(3) STANDARD SCAFFOLD DESIGNATIONS.-

a. Light duty scaffold.-The light duty scaffold is to be used for loads up to twenty-five psf, and is intended for use by carpenters, painters, or others of similar trades. It shall not be used to support loads more severe than those imposed by such workers and a minimum amount of lightweight materials.

b. Medium duty scaffold.-The medium [duty]* scaffold is to be used for loads up to fifty psf, and is intended for use by bricklayers or plasterers. It shall not be used to support loads more severe than those imposed by such workers and a moderate amount of their materials.

Copy in brackets not enacted but probably intended.

c. Heavy duty scaffold.-The heavy duty scaffold is to be used for loads up to seventy-five psf, and is intended for use by stone masons. It shall not be used to support loads more severe than those imposed by such workers and a reasonable supply of their materials.

(4) FOOTINGS AND ANCHORAGE.-The footings and anchorage for every scaffold shall be sound and rigid, capable of carrying the maximum load without settlement or deformation, and secure against movement in any direction. Supports such as barrels, boxes, loose brick, loose stone, or other unstable constructions shall not be used.

(c) Planking.-

(1) The minimum width of every planked platform shall be eighteen inches, except as otherwise noted hereinafter. Unless otherwise indicated, the sizes in this subchapter for load-bearing planks shall denote undressed lumber, full thickness.

(2) Except as otherwise indicated in this section, planks shall overhang their end supports at least six inches, or they shall be securely fastened to prevent dislodgment. In no case shall the overhang exceed eighteen inches. Planks shall be laid tight, and inclined planking shall be fastened in place.

(3) The maximum permissible spans for two inch plank shall be as shown in table 19-5.

(4) The maximum permissible span for one and one-

quarter inch plank of full thickness shall be six feet. The maximum permissible working load shall be fifty psf.

(d) Erection and removal.-Only workers with experience in erecting or removing scaffolds shall be employed. They shall work under the supervision of a designated superintendent or foreman who shall enforce such measures as necessary for the protection of public and property.

TABLE 19-5 MAXIMUM PERMISSIBLE SPANS FOR TWO-INCH PLANK USED ON SCAFFOLDS

Material	Full Thickness Undressed Lumber			Lumber of Nominal Thickness		
Working Load (psf)…..	25	50	75	25	50	75
Permissible Span (ft.)…	10	8	6	8	6	5

(e) Maintenance and repair.-All scaffolds shall be maintained in safe condition. No scaffold shall be altered, removed, or partially dismantled while it is in active use. Every damaged or weakened scaffold shall be immediately repaired and shall not be used until such repairs have been completed, and, in the case of suspended scaffolds, tested as required under subdivision (b) of section 27-1045 of this article.

(f) Fire retardant construction.-With the exception of the planking, all scaffolds shall be noncombustible material when used in the following applications:

(1) Exterior scaffolds exceeding seventy-five feet in height.

(2) Interior scaffolds exceeding twenty-one feet in height.

(3) All scaffolds used in the alteration, repair, or partial demolition of buildings in occupancy groups H-1 and H-2.

(g) Guard rails and toeboards.-

(1) Except for scaffold platforms ten feet or less above the ground or for scaffolds used on the interior of a building at a height ten feet or less above a floor, the open sides and ends of every scaffold platform shall be provided with a standard guard rail and toeboard as described in section 27-1050 of this article, unless otherwise specified for the particular type of scaffold.

(2) Where it is possible for the public to pass under, or next to a scaffold, the space between the top rail and toeboard shall be enclosed with a wire screen composed of not less than no. 18 steel wire gage with a maximum one-half inch mesh.

(3) Toeboards shall be installed so that no open space exists between the platform and the toeboard.

§[C26-1907.2] 27-1043 Pole scaffolds.-

(a) Poles.-Scaffold poles shall be plumb and the foot ends shall be secured against lateral movement. Where wood poles are spliced, the squared end of the upper section shall bear uniformly on the squared end of the lower section, and the two ends shall be rigidly fastened together with two or more wood splice plates, each at least four feet in length. The plates shall be placed at right angles to each other, shall overlap the abutting ends of the pole equally, and shall have a combined sectional area not less than fifty percent of the cross sectional area of the pole. Splicing of adjacent poles shall be staggered. Splices shall be close to ledgers, but so located as not to interfere with the fastenings.

(b) Bracing.-Pole scaffolds shall be braced and stayed to prevent movement away from the building. Diagonal or equivalent bracing shall be provided to prevent the poles from moving in a direction parallel to the building face, and shall be so installed that every spliced section of every pole is braced to adjacent poles.

(c) Planking.-

(1) Where planks are butted end to end, parallel putlogs or bearers shall be provided not more than eight inches apart so that butted ends rest on separate putlogs or bearers. Ends shall be nailed or cleated.

(2) Where platform planks are used with overlapping ends, the ends of both the upper and lower planks shall overlap the putlog or bearer by a[t]* least six inches.

Copy in brackets not enacted but probably intended.

(3) Planks shall be laid close together and shall be of sufficient length to extend over three bearers.

(d) Connections.-

(1) Ledgers shall not be spliced between poles but shall overlap the poles at each end by at least four inches. Where ledgers lap each other, bearing-blocks attached to the pole shall be provided to support the ledger.

(2) The ends of all wooden braces shall overlap the nailed fastenings an amount sufficient to prevent the ends of the braces from splitting.

(e) Putlogs for single pole scaffolds.-All putlogs shall be set with the greater dimension vertical and shall be long enough to project beyond the outer edge of the poles by at least twelve inches. Putlogs shall be supported on the ledger and located against the side of the poles and fastened to either the pole or the ledger. The other end of the putlog shall rest in the wall of the building, with at least four inch bearing, and shall not be notched or cut down, except for light duty scaffolds, which may be notched or cut down to fit into a space made by the removal of a brick. In such cases, the notch shall be made on the top of the putlog just deep enough to permit it to be inserted in the hole in the wall.

(f) Bearers for independent pole scaffolds-.Bearers shall be set with their greater dimensions vertical, and shall be long enough to project over the ledgers beyond the outer row of poles by at least twelve inches and beyond the inner row of poles by at least two inches.

Bearers shall be supported on the ledgers, and located against the sides of the poles and fastened to them.

(g) Free standing scaffolds.-Unless guyed, free standing scaffolds shall have a minimum base dimension of at least twenty-five percent of the height of the scaffold.

(h) Erection and removal.-When a new working level is desired, the existing planks shall be left undisturbed until the new working level is framed. As the platform level is abandoned with the progress of the work, all members other than the planking, railing, and toeboards shall be left intact. When removing a scaffold, the sequence of removing the members shall be the reverse of that used in erection.

(i) Standard designs.-All wood pole scaffolds seventy-five feet high or less shall be constructed in accordance with the minimum nominal sizes and maximum spacings shown in tables 19-6 through 19-11. For pole scaffolds more than seventy-five feet high, see paragraph one of subdivision (b) of section 27-1042 of this article.

TABLE 19-6 MINIMUM SIZE AND MAXIMUM SPACING OF MEMBERS OF SINGLE POLE LIGHT DUTY SCAFFOLDS

Uniformly Distributed Load					Not to Exceed 25 psf
Max. height of scaffold……	20'	40'	60'		75'
				Top 60'	Lower Sect.
Poles or uprights (min.)……...	2" x 4"	3" x 4"	4" x 4"	4" x 4"	4" x 6"
Pole foundation (min.)…….			2" x 9"		
Max. pole spacing (longitudinal).			10' – 0"		
Max. width of scaffold……			5' – 0"		
Bearers or putlogs (min.)…….			3" x 4" or 2" x 6" (on edge)		
Ledgers (minimum):					
With 6'-0" pole space……			1" x 6" (on edge)		
With 10'-0" pole space……			1 1/4" x 9" (on edge)		
Vertical spacing of ledgers (max.)			7'-0"		
Non-supporting stringers…….			1" x 4"		
Tie-ins……...			1" x 4"		
Bracing……			1" x 4"		
Planking:					
Not more than 6' span……..			1 1/4" x 9"		
Up to 10' span……...			2" x 9"		
Toeboards……			1" x 6"		
Guard rails……...			2" x 4"		

§[C26-1907.3] 27-1044 Outrigger scaffolds.-

Outrigger scaffolds shall not be used for loading in excess of fifty psf (medium duty).

(a) Outrigger beams.-Outrigger beams shall not extend more than six feet beyond the face of the building. The inboard end of outrigger beams, measured from the fulcrum point to the extreme point of support, shall be at least one and one-half times the outboard end in length. The fulcrum point of the beam shall rest on a secure bearing at least six inches in each horizontal dimension. The beam shall be secured against movement and shall be securely braced against tipping at both fulcrum point and inboard end. Outriggers shall not be less than three inches by ten inches set on edge, plumb, and spaced not to exceed six feet on centers for light and medium duty scaffolds.

(b) Inboard supports.-The inboard ends of outrigger beams shall be securely fixed to resist all vertical, horizontal, and torsional forces.

(c) Platform.-The platform shall be constructed of at least two inch by nine inch planks, securely fastened to the outriggers, and laid tight to within three inch[es]* of the face of the building.

(d) Guard rail and toeboard.-The railing posts for the required standard guard rail and toeboard shall be securely braced to the outriggers.

Copy in brackets not enacted but probably intended.

(e) Superstructures.-Supports for superstructures placed on outrigger scaffolds shall be set directly over the outrigger beams and shall be secured in place. Such structures shall not exceed six feet in height. Horses shall not be used as supports for such superstructures.

§[C26-1907.4] 27-1045 General provisions for suspended scaffolds.-

(a) Installation and use.-Suspended scaffolds shall be erected and operated in such a manner that suspension elements are vertical and in a plane parallel to the wall at all times. The installation or change of position of any suspended scaffold shall be performed under the supervision of a designated superintendent or foreman who shall enforce such measures as may be required for the safe execution of such operation.

TABLE 19-7 MINIMUM SIZE AND MAXIMUM SPACING OF MEMBERS OF SINGLE POLE MEDIUM DUTY SCAFFOLDS

Uniformly Distributed Load					Not to exceed 50 psf
Max. height of scaffold……...	20'	40'	60'		75'
				Top 60'	Lower Sect.
Poles or uprights (min.)……...	3" x 4" or 2" x 6"	4" x 4"	4" x 6"	4" x 6"	4" x 6"
Pole foundation (min.)……			2" x 9"		
Max. pole spacing (longitudinal)…			8' – 0"		
Max. width of scaffold……		5' – 0"		8' – 0'	
Bearers or putlogs (min.)…….		3" x 4" or 2" x 8" (on edge)		3" x 5" or 2" x 9" (on edge)	
Max. spacing of bearers or putlogs.			8' – 0"		
Ledgers (minimum)…….			2" x 9" (on edge)		
Vertical spacing of ledgers (max.)..			7'— 0"		
Non-supporting stringers……			1" x 6" or 1 1/4" x 4"		
Tie-ins…….			1" x 6"		
Bracing……			1" x 6"		
Planking:					
Not more than 6' span…….			1 1/4" x 9"		
Up to 8' span…….			2" x 9"		
Toeboards……			2" x 9"		
Guard rails……...			2" x 4"		

***As enacted but 6'' x 6'' probably intended .*

TABLE 19-8 MINIMUM SIZE AND MAXIMUM SPACING OF MEMBERS OF SINGLE POLE HEAVY DUTY SCAFFOLDS

Uniformly Distributed Load					Not to exceed 75 psf
Max. height of scaffold……...	20'	40'	60'		75'
				Top 60'	Lower Sect.
Poles or uprights (min.)……...	3" x 4" or 2" x 6"	4" x 4"	4" x 6"	4" x 6"'	6" x 6"
Pole foundation (min.)……			2" x 9"		
Max. pole spacing (longitudinal)…			6' – 0"		
Max. width of scaffold……		5' – 0"		8' – 0"	
Bearers or putlogs (min.)…….		3" x 5"		3" x 6" or 2" x 9"	
Max. spacing of bearers or putlogs.			6' – 0"		
Ledgers (minimum)…….			2" x 9" (on edge)		
Vertical spacing of ledgers (max.)..			7' —0"		
Non-supporting stringers……			2" x 4"		
Tie-ins…….			1" x 6"		
Bracing……			1" x 6"		
Planking……...			2" x 9"		
Toeboards……			2" x 9"		
Guard rails……...			2" x 4"		

(b) Tests and inspections required.-All suspended scaffolds shall be inspected daily by the user before use. A record of such inspections shall be kept and maintained at the field office of the user. Upon delivery of the scaffold equipment to the site, the supplier of such equipment shall furnish a certificate from an independent testing laboratory or a licensed professional engineer stating that physical tests of a prototype of the equipment were conducted and that such equipment is capable of withstanding at least four times the maximum allowable live loads. Such certificates shall be kept at the field office of the user and shall be available for inspection by a representative of the department of buildings. This section, however, shall

not be construed to reduce the factors of safety specified elsewhere in this code for various appurtenances to this equipment. In addition, tests prescribed in section 27-998 of article three of subchapter eighteen shall be performed with the full rated live load on the scaffold at the test intervals specified therein and at such other intervals as the commissioner may require.

(c) Tie-ins.-Scaffolds shall be tied into the building or structure, and means therefor shall be provided. Window cleaners anchors, window frames, millions*, or similar elements shall not be used as tie-in anchors or brace-back points.

(d) Wire rope.-Wire rope used for support of suspended scaffolds shall be capable of supporting six times the actual applied load without failure, but shall not be less than five-sixteenths of an inch in diameter for use with light duty platforms or one-half inch in diameter for use with medium or heavy duty platforms. Wire rope shall be rigged to blocks of proper size or to other approved devices. For other provisions concerning wire rope, see section 27-1055 of article ten of this subchapter.

As enacted but "mullions" probably intended.

TABLE 19-9 MINIMUM SIZE AND MAXIMUM SPACING OF MEMBERS OF INDEPENDENT POLE LIGHT DUTY SCAFFOLDS

Uniformly Distributed Load			Not to exceed 25 psf		
Max. height of scaffold…….	20'	40'	60'	Top 60'	75' Lower Sect.
Poles or uprights (min.)…….	2" x 4"	3" x 4" or 2" x 6"	4" x 4"	4" x 4"	4" x 6"
Pole foundation (min.)……...		2" x 9"			
Max. pole spacing (longitudinal):					
With 1 1/4" x 9" ledgers…….		6' – 0"			
With 2" x 9" ledgers……...		10' – 0"			
Max. pole spacing (transverse)…..		10' – 0"[a]			
Ledgers (minimum)……...		1 1/4" x 9" (on edge) or 2" x 9"			
Vertical spacing of ledgers (max.)		7'— 0"			
Bearers (minimum)……		1 1/4" x 9" (on edge)			
Non-supporting stringers……..		1" x 4"			
Bracing……..		1" x 4"			
Planking:					
Not more than 6' span……		1 1/4" x 9"			
Up to 10' span……		2" x 9"			
Toeboards……..		1" x 6"			
Guard rails…….		2" x 4"			

Note for Table 19-9:

[a] Total base dimension in both directions to be at least 25 per cent of height.

§[C26-1907.5] 27-1046 Two-point suspension scaffolds.-

(a) Width and support.-Two-point suspension platforms shall be at least twenty inches but not more than thirty inches in width. Each end of the platform shall be supported by an approved stirrup or hanger, and the platform shall be securely fastened thereto. Not more than two hangers or stirrups shall be used to support one scaffold.

(b) Hangers-Hangers or stirrups shall be of steel or wrought iron. Each such hanger shall be formed to properly fit the platform, and shall be provided with a loop or eye at the top for securing the supporting hook on the block, and with loops or equivalent means to support the top rail and midrail. The hanger or stirrup shall be placed at least six inches but not more than eighteen inches from the end of the platform.

(c) Roof irons.-Roof irons or hooks shall be of steel or wrought iron not less than seven-eighths of an inch in diameter or other size of equivalent strength and shall be securely anchored. Where the upper block hook does not directly engage the roof iron, the connection shall be made with wire rope of required strength but in no case shall the wire rope be less than one-half inch in diameter.

(d) Fibre rope.-

(1) The use of fibre rope shall be limited to light duty two-point suspension scaffolds. Fibre rope shall be at least equivalent in strength and suitability to three-quarter inch first quality unspliced manila rope.

(2) Fibre rope shall not be permitted for or near any work involving the use of corrosive substances or where the upper block is more than one hundred feet

above the platform.
(3) All blocks shall fit the size of rope they carry, and shall be so constructed as not to chafe the rope.
(e) Use.-
(1) Needle beam scaffolds shall not be used over areas used by the public.
(2) Two or more two-point suspension scaffolds shall not be combined into one by bridging the distance between them or by any form of connection.
(3) Not more than two workers shall be permitted to work on one scaffold at one time.
(4) Every two-point suspension scaffold shall be equipped with an approved device to raise, lower, and hold the scaffold in position.
(f) Platforms.-The platforms of every two-point suspension scaffold shall be one of the following types, or an approved equivalent.
(1) LADDER TYPE PLATFORM.-consisting of boards upon a horizontal ladder, the sides of which are parallel. The ladder shall be capable of sustaining, without failure in any part, at least four times the maximum load allowed to be placed thereon, and rungs shall be at least one and one-eighth inches in diameter with seven-eighths inch tenons mortised into the side stringers at least seven-eighths of an inch and spaced at not more than eighteen inches. Stringers shall be tied together with metal rods at least one-quarter inch in diameter located not more than five feet apart and which pass through the stringers and are riveted up tight against washers at both ends. The platform shall consist of at least one-half inch by three inch planks, shall fill the space between the sides of the hangers, and shall be securely fastened to the hangers by U-bolts passing around the hangers and bolted up tight on the inside face of the stringers.
(2) PLANK TYPE PLATFORM.-consisting of planks supported on stirrups or hangers. The planks shall have a uniform thickness of at least two inches and a width of at least nine inches. The planks shall extend at least six inches but not more than eighteen inches beyond the supporting hangers, and a bar shall be nailed across the platform on the underside at each end to prevent the platform from slipping off the hanger. Where two or more planks are used, they shall be fastened together by cleats not less than one inch by six inches nailed on the underside at intervals of four feet or less. Planks shall not be spliced.
(3) BEAM TYPE PLATFORM.-consisting of longitudinal side stringers with cross beams on which longitudinal platform planks are laid. Beam platforms shall have side stringers not less than two inches by eight inches. The stringers shall be supported on the hangers, located to fill the full width of the hangers, and the clear span between hangers shall not exceed twenty-four feet. The ends of the stringers shall extend at least six inches but not more than eighteen inches beyond the hangers, and shall be fastened to the hangers by U-bolts passing around the hangers and bolted up tight on the inside face of the stringers. The platform shall be supported on two inch by six inch cross beams, on edge, set between the side stringers, securely nailed thereto, and spaced not more than four feet on centers. The platform boards shall consist of material not less than one inch by six inches, nailed tight together, and extended to the outside face of the stringers. The ends of all platform boards shall rest on the cross beams and shall be nailed securely thereto.
(g) Guard rail and toeboard.-The outside edge of the platform, and the open ends (when stirrups do not afford adequate protection) shall be provided with a two-rail guard rail and a toeboard securely fastened at intervals not exceeding ten feet. Where there is a space between the scaffold and the structure greater than six inches, a similar guard rail shall be provided at the inside of the platform.

§[C26-1907.6] 27-1047 Multiple-point suspension scaffolds.-

(a) General.-
(1) All multiple-point suspension scaffolds shall be supported by wire ropes. The use of fibre ropes is not permitted.
(2) Provision shall be made to prevent supports from slipping off the ends of outrigger beams.
(3) Outrigger beams and platform bearers shall be of metal.
(b) Outrigger beams.-
(1) The overhang of outrigger beams shall not exceed that specified by the design, and the inboard length of beam shall be at least one and one-half times the outboard length.
(2) Outrigger beams shall be anchored and braced at both fulcrum point and inboard end to resist all vertical, horizontal, and torsional forces.
(3) Supporting points for outrigger beams shall be level, smooth, and of sufficient area (at least six inches by six inches) to provide a firm seat.
(4) The wire rope suspenders shall be securely fastened to the outrigger beams by steel shackles or equivalent means. The shackles and outrigger beams shall be so located that the ropes will hang vertically.
(5) Outrigger beams shall be of the sizes required for the design, but shall be at least equivalent in strength to a standard 7 I 15.3 [*sic*] steel I-beam, and shall be spaced not more than ten feet center-to-center.
(c) Hoisting machines.-
(1) Suspended scaffolds shall be provided with an approved hoisting machine of either the platform or overhead type.
(2) At least four turns of rope shall at all times remain on the hoisting drum, and the end of the rope shall be properly secured to the drum.
(3) The hoisting rope shall be inspected regularly,

maintained, and lubricated.

(d) Platform.-

(1) Platform widths shall be limited to eight feet.

(2) Platform planking shall be laid tight and securely fastened to the bearers, shall overlap the supporting bearers at each end of the scaffold at least six inches but not more than eighteen inches, and shall not be supported across more than two bearers.

(3) Platform bearers shall be at least the equivalent of a pair of two and one-half inch by two and one-half inch by one-quarter inch standard angles.

TABLE 19-10 MINIMUM SIZE AND MAXIMUM SPACING OF MEMBERS OF INDEPENDENT POLE MEDIUM DUTY SCAFFOLDS

Uniformly Distributed Load				Not to exceed 50 psf	
Max. height of scaffold…….	20'	40'	60'		75'
				Top 60'	Lower Sect.
Poles or uprights (min.)…….	3" x 4" or 2" x 6"	4" x 4"	4" x 6"	4" x 6"	6" x 6"
Pole foundation (min.)……...			2" x 9"		
Max. pole spacing (longitudinal)...			8' – 0"		
Max. pole spacing (transverse)…..			10' –0"[a]		
Ledgers (minimum)……...			2" x 9" (on edge)		
Vertical spacing of ledgers (max.)			6'— 0"		
Bearers (minimum)……			2" x 9" (on edge)		
Non-supporting stringers……..			1 1/4" x 4" or 1" x 6"		
Bracing……..			1" x 6"		
Planking:					
Not more than 6' span……			1 1/4" x 9"		
More than 6' span……..			2" x 9"		
Toeboards……..			2" x 9"		
Guard rails…….			2" x 4"		

Note for Table 19-10:

[a] Total base dimension in both directions to be at least 25 per cent of height.

TABLE 19-11 MINIMUM SIZE AND MAXIMUM SPACING OF MEMBERS OF INDEPENDENT POLE HEAVY DUTY SCAFFOLDS

Uniformly Distributed Load				Not to exceed 75 psf	
Max. height of scaffold……..	20'	40'	60'		75'
				Top 60'	Lower Sect.
Poles or uprights (min.)…….	4" x 4"	4" x 4"	4" x 6"	4" x 6"	6" x 6"
Pole foundation (min.)……..…..			2" x 9"		
Max. pole spacing (longitudinal)...			6' – 0"[a]		
Max. pole spacing (transverse)…..			10' –0"[a]		
Ledgers (minimum)……...			2" x 9" (on edge)		
Vertical spacing of ledgers (max.)			5'-0"		
Bearers (minimum)……			2" x 9" (on edge)		
Non-supporting stringers……..			1 1/4" x 9"		
Bracing……..			1" x 6"		
Planking…….			2" x 9"		
Toeboards……..			2" x 9"		
Guard rails…….			2" x 4"		

Note for Table 19-11:

[a] Total base dimension in both directions to be at least 25 per cent of height.

(e) Guard rail and toeboard.-The outside edge of the platform and open ends shall be provided with a

standard guard rail and toeboard (section 27-1050 of this article) except that spacing of the vertical supports may be increased to not more than ten feet. Where there is a space between the scaffold and the structure in excess of six inches, a similar guard rail shall be provided at the inside edge of the platform.

(f) Erection and removal.-

(1) Multiple-point suspension scaffolds shall be installed, relocated, and raised or lowered under the supervision of a designated superintendent or foreman who shall enforce such measures as may be required for the safe execution of such operations.

(2) During raising or lowering, the levels of the various sections of the scaffolds shall be kept uniform and the differential height between sections minimized.

§[C26-1907.7] 27-1048 Manually-propelled free standing scaffolds. - All manually propelled free standing scaffolds shall meet the following requirements and shall be approved:

(1) Work platforms shall be tightly planked for the full width of the scaffold except for necessary entrance openings. Planks shall be secured in place.

(2) Platforms shall have a guard railing.

(3) Where a ladder is used to approach a platform, the ladder shall be secured to the scaffold.

(4) Handholds shall be provided for safe passage from the ladder to the platform.

(5) Unless temporarily braced to adjacent structure, the ratio of the platform height to the least base dimension shall be such as to assure stability, but in no case shall such height be more than four times the least base dimension.

(6) Provision shall be made to prevent the scaffold from falling during movement from one location to another.

(7) While the scaffold is in use by any person, it shall rest upon a stable footing and shall stand plumb. The casters or wheels shall be locked in position.

(8) While the scaffold is being moved, no person shall be suffered or permitted to ride, and all tools, equipment, and material shall be removed.

§[C26-1907.8] 27-1049 Power operated free standing scaffolds.-Records of the inspection, servicing, and maintenance of all power operated free standing scaffolds shall be kept by the user. These records are to be submitted on forms furnished by the commissioner and are to be made available whenever called for by the commissioner. All power operated scaffolds whether free standing or suspended shall meet the applicable requirements of subchapter eighteen of this chapter.

§[C26-1907.9] 27-1050 Standard guard rail and toeboard.-

(a) Standard guard rail.-

(1) GENERAL REQUIREMENTS.-A standard guard rail shall consist of a two inch by four inch wood top rail (S4S) not less than three feet nor more than three feet six inches above the platform and a one inch by four inch wood intermediate rail (S4S) midway between the top rail and the floor or toeboard, both supported by two inch by four inch wood posts (S4S) spaced not more than eight feet apart.

(2) ALTERNATE METAL RAILING.-In lieu of wood construction, posts and rails may be constructed of at least one and one-quarter inch diameter standard pipe or of at least two inch by two inch by one-quarter inch angles. Spacing of rails and posts shall be as required in paragraph one of this subdivision.

(3) REMOVABLE SECTIONS OF RAILING.-To provide necessary openings for intermittent operations, one or more sections of a required railing may be hinged or supported in sockets. When supported in sockets, rails shall be so constructed that they cannot be jolted out. A button or hook may be used to hold the rail in fixed position. Substantial chains or ropes may be used to guard such openings in standard railings. Where so used, the chains or ropes shall be taut at the same height as the rails of the standard railing.

(b) Standard toeboard.-A standard toeboard shall be at least five and one-half inches high and constructed of metal, wood, or other substantial material. It shall be installed, where required, along the edge of any floor, opening, platform, ramp, or runway. Such toeboard shall be securely fastened to the posts and so installed that no open space exists between the floor and the toeboard.

ARTICLE 9 STRUCTURAL RAMPS, RUNWAYS, AND PLATFORMS

§[C26-1908.1] 27-1051 Ramps and runways (including elevated walkways).-

(a) Construction.-All runways and ramps shall be constructed, braced and supported to resist lateral displacement and all vertical loads, including impact.

(b) For motor vehicle use.-Runways and ramps for the use of motor vehicles may consist of an earthfill or may be structurally supported. They shall have a clear width of not less than twelve feet with timber curbs at least eight inches by eight inches placed parallel to, and secured to, the sides of the runway or ramp. The flooring of structurally supported ramps shall consist of no smaller than three inch planking full size, undressed, or equivalent material, with spans designed for the loads to be imposed.

(c) For use of workers only.-Runways and ramps for the use of workers shall be at least one foot six inches in clear width. Where used for wheelbarrows, hand-

carts, or hand-trucks, runways and ramps shall be at least three feet in clear width. Flooring shall consist of at least two inch planking spanning as permitted by table 19-5, laid close, butt-joined, and securely fastened.

(d) Slope limitations.-Ramps shall have a slope not steeper than one in four. If the slope is steeper than one in eight, the ramp shall be provided with cleats spaced not more than fourteen inches apart and securely fastened to the planking to afford a foothold. Spaces in the cleats may be provided for the passage of the wheels of vehicles. The total rise of a continuous ramp used by workers carrying material or using wheelbarrows, hand-carts, or hand-trucks shall not exceed twelve feet unless broken by horizontal landings at least four feet in length.

(e) Guard rail required.-

(1) All runways and ramps located more than five feet above the ground or floor shall be provided with a standard guard rail and toeboard (section 27-1050 of article eight of this subchapter) on open sides.

(2) Where it is possible for the public to pass under, or next to, runways or ramps, the space between the top rail and the toeboard shall be enclosed with a wire screen composed of not less than no. 18 steel wire gage with a maximum one-half inch mesh.

§[C26-1908.2] 27-1052 Platforms.-

(a) Planking. -Platforms used as working areas, or for the unloading of wheelbarrows, hand-trucks, or carts shall have a floor consisting of at least two inch planking spanning as permitted by table 19-5. Platforms for the use of motor trucks shall have a floor of at least three inch planking, full size, undressed or equivalent materials with spans designed for the loads to be imposed. Planking shall be laid close and shall be butt-joined and securely fastened.

(b) Guard rail required.-

(1) Every platform more than five feet above the ground or above a floor shall be provided with a standard guard rail and toeboard (section 27-1050 of article eight of this subchapter), except that the side of the platform used for the loading or unloading of vehicles may be protected by a timber curb at least eight inches by eight inches for motor trucks or four inches by four inches for wheelbarrows and hand-trucks in lieu of the standard guard rail and toeboard.

(2) Where it is possible for the public to pass under, or next to, platforms, the space between the top rail and the toeboard shall be enclosed with a wire screen composed of not less than no. 18 steel wire gage with a maximum one-half inch mesh.

§[C26-1908.3] 27-1053 Special requirements where power buggies are used.-Runways, ramps, platforms, and other surfaces upon which power buggies are operated shall meet the following minimum requirements:

(1) They shall be designed.

(2) They shall be able to sustain, without failure, at least four times the maximum live load for which they are intended.

(3) The minimum width, inside of curbs, for any ramp, runway, or platform shall be two feet wider than the outside width of any power buggy operated thereon without passing, and three feet wider than twice such buggy width in the places where passing occurs.

(4) All runways shall be essentially level transversely.

(5) Curbs shall be furnished along all buggy traffic paths that are nearer than ten feet horizontally to any unenclosed area, shaft, or other open space into which or through which, a fall of more than twelve inches from such surface is possible, except as set forth in subdivision seven of this section.

(6) Where curbs are not required because the buggy is operated on a surface not over twelve inches above another surface, the lower surface shall be strong enough to sustain the loaded vehicle in the event of a fall thereon.

(7) Curbs may be omitted at actual dumping points more than twelve inches above other surfaces if the edge over which dumping occurs is provided with bumpers or other means that will effectively stop the buggy from running over the edge while dumping.

(8) Curbs must be at least seven inches high, securely fastened, and capable of resisting side impact, and shall be equivalent to at least two inch by eight inch plank set on edge against uprights securely fastened and braced at not more than four foot intervals.

ARTICLE 10 MATERIAL HANDLING AND HOISTING EQUIPMENT

§[C26-1909.1] 27-1054 General requirements.-Material handling and hoisting equipment shall be installed, operated, and maintained to eliminate hazard to the public or to property. It shall be unlawful to operate any such equipment which is not provided with a positive means for preventing the unauthorized operation of such machine. The means whereby such machines may be made inoperative shall be determined by the commissioner.

(a) Operation.-Only operators designated by the person causing such machinery to be used shall operate hoisting or material handling machinery. Operators and signalmen shall be experienced at the operation they perform. Riggers and hoisting machine operators shall be licensed as required under chapter one of title twenty-six of the administrative code. The operator shall be responsible for making the machine inoperative before he or she leaves the machine.

(b) Loading.-Material handling and hoisting equipment shall not be loaded in excess of the rated load specified

by the manufacturer, except for power operated cranes and derricks where the provisions of section 27-1057 of this article are controlling. Except for power operated cranes and derricks if such data are not available, the safe loads and, where applicable, charts of reach vs. capacity, shall be established by an engineer or architect. All loads shall be properly trimmed to prevent the dislodgement of any part during raising, lowering, swinging or transit. Suspended loads shall be securely slung and properly balanced before they are set in motion. Rated load capacities and required charts shall be conspicuously posted on all material handling and hoisting machinery or on the job site and shall be available to the commissioner at all times.

(c) Refueling.-Open lights, flames, or spark-producing devices shall be kept at a safe distance while refueling an internal combustion engine, and no person shall smoke or carry lighted smoking material in the immediate vicinity of the refueling area. The engine shall be stopped during refueling. Fuel shall be kept in containers that meet the requirements of the fire department. "No smoking" signs shall be conspicuously posted in all fueling or fuel storage areas.

§[C26-1909.2] 27-1055 Rigging, rope, chains, and their appurtenances and fittings.-

(a) Hoisting line.-Only wire rope shall be used with power driven hoisting machinery, except that either wire or fibre rope may be used on winchheads or capstan hoists.

(b) Wire rope or cable.-

(1) All hoisting cable shall be at least one-half inch diameter plow steel grade.

(2) Wire cable shall not be used under the following conditions:

a. When it is knotted or kinked.

b. When more than ten percent of the total wires are broken in any lay, a lay being that distance measured along the cable in which one strand makes a complete revolution around the cable axis.

c. When the wires on the crown of the strands are worn down or rusted to less than sixty percent of their original cross-sectional area.

d. When any combination of broken wires, rust, or abrasion has reduced the strength of the cable to eighty percent or less of its original strength.

(3) At least four turns of the cable shall remain on the hoist drum at all times.

(4) Wire cable fastenings shall conform to the provisions of article eleven of subchapter ten of this chapter, and shall consist of zinc-filled sockets, wedge sockets with at least one cable clip above the socket, thimble and splice connections, or thimble and cable slips*.

(5) Where cable clips are used, the minimum number shall conform to the following:

As enacted but "clips" probably intended.

Diameter of wire rope	No. of clips
Up to and incl. 3/4 in…..……...	3
From 3/4 in. up to and incl. 1 in……....	4
From 1 in. up to and incl. 1 1/4 in……	5
From 1 1/4 in. up to and incl. 2 1/2 in..	6

(6) Clip spacing shall be at least six times the diameter of the cable, and the "U" part of the clip shall be placed over the short end of the cable. After the rope is in service and while it is under tension, the nuts on the clips shall be retightened.

(7) Cables and blocks used to change the direction of cables shall not be located in any area used by the public.

(c) Fibre rope.-

(1) Fibre rope shall be equal in strength, durability and quality to long fibered manila hemp rope, and shall be used and maintained in accordance with the recommendations of the manufacturer.

(2) Before rope is used it shall be carefully inspected for abrasions and severe wear. Rope that has been exposed to acid shall be destroyed and not used.

(3) Frozen rope shall be thawed out and inspected before being used.

(4) Rope shall not be made fast to sharp objects or surfaces, and sharp bends shall be avoided.

(5) Rope shall be stored in a dry place and protected.

(d) Sheaves.-

(1) Load-bearing sheaves shall be of diameter and grooving as recommended by the manufacturer to accommodate the particular rope under the proposed conditions of use.

(2) Sheaves and blocks that are worn, chipped, or otherwise damaged shall not be used.

(3) Sheaves and blocks intended for use with fibre rope shall not be used for wire rope.

(e) Fittings.-

(1) All wire rope fittings, including sockets, thimbles, clips, blocks, shackles, etc. shall be of the standard size, diameter, and grooving to fit the size of and to develop the breaking load capacity of the rope on which they are to be installed.

(2) Hooks, shackles, or other fittings deformed due to wear, over-stress, or other cause shall not be used.

(3) Safety hooks or open type hooks with wire mousings shall be used where loads may be accidentally unhooked.

(f) Chains.-

(1) Chains having deformed links or links that are stretched from their original length shall not be used. Defective links or portions of the chain shall be replaced only by links or sections furnished by the manufacturer for the particular chain involved, unless a substitute link can be shown to be equivalent in strength and suitability. All repairs to chains shall be made by an experienced blacksmith or chainwright, except that alloy steel chains shall be repaired only by the

manufacturer of such chains.
(2) When in constant use, steel chains should be normalized and wrought iron chains should be annealed at intervals not to exceed six months. The annealing or normalizing shall be done by the manufacturer or in strict accordance with such manufacturers specifications.
(3) Chains shall not be used as slings in hoisting operations. Chains shall not be knotted, nor shall they be shortened or spliced, by the use of nails or bolts.
(g) Slings.-
(1) Blocks or heavy padding shall be used at corners of the load to protect the sling from sharp bending.
(2) When lifting a load with multiple slings, the slings shall be so arranged as to equalize the load between the slings.
(3) The ends of slings made of wire or fibre shall be properly spliced to form the eyes. Eyes for wire rope shall be formed using thimbles.
(4) Wire rope slings shall be frequently inspected and lubricated.
***(h) Accidents. -** The owner or person directly in charge of any rigging equipment shall immediately notify the commissioner following any accident involving such equipment. When an accident involves the failure or destruction of any part of the rigging equipment, no person shall use or operate such equipment or any part thereof or remove such equipment or any part thereof from the immediate area of the job site without the permission of the commisioner.
****Local Law 15-1993.***

§[C26-1909.3] 27-1056 Material platform hoists and bucket hoists.-As used in this section, a material platform or bucket hoist means a power or manually operated suspended platform or bucket contained by guide rails and used for raising or lowering material exclusively, and controlled from a point outside the conveyance.
(a) Construction of material hoist towers.-
(1) Where the design of material hoist towers utilizes standard manufactured elements the loading shall not exceed the rated values established by the manufacturer. If specifically designed for the given installation, the design shall be prepared by an engineer or architect, and the construction shall conform to that design. For all material hoist towers more than six stories high, whether of manufactured units or specifically designed for the site, plans showing the design, including the guying, bracing, and foundations shall be submitted to the commissioner for approval prior to construction. Approval of such plans is subject to the provisions established in article nine of subchapter one of this chapter for approval of plans for new construction.
(2) Standard guard rails and toeboards shall be placed on the open sides of runways connecting the tower to the structure.
(3) The provisions of subdivision (f) of section 27-1042 of article eight of this subchapter relating to fire retardant construction of scaffolds shall apply to the construction of hoist towers.
(4) An enclosure shall be installed around the hoistway below the lowest landing to prevent unauthorized access to the space under any hoist.
(5) Exterior hoist towers may be used with or without an enclosure on all sides. When a hoist tower is enclosed, except for entrance and exit openings, it shall be enclosed on all sides for the entire height, with a screen enclosure with one-half inch mesh, No. 18 U.S. gage [*sic*] wires. When a hoist tower is not enclosed, the hoist platform or car shall be totally enclosed on all four sides for the full height between the floor and the overhead protective covering with one-half inch mesh of No. 14 U.S. gage [*sic*] wire or the equivalent. The hoist platform enclosure shall include the required gates for loading and unloading.
(b) Hoist cars.-Platforms for material hoist cars shall have sufficient strength to support five times the rated capacity, and the wire rope supporting material hoist cars or bucket hoists shall be capable of supporting eight times the rated capacity. The rated capacity shall be conspicuously posted and maintained on the cross head or side members. On the top of every material hoist cage there shall be an overhead protective cover of two inch planking, three-quarters inch plywood or other material of equivalent strength.
(c) Hoist machinery.-
(1) The car and counterweight, if provided, shall be equipped with safety devices capable of stopping and sustaining the counterweight and/or sustaining the car with its capacity load in the event of breakage of the hoisting or counterweight ropes.
(2) A sign or plate giving the maximum load capacity shall be posted in a conspicuous place near every hoist engine.

§[C26-1909.4] 27-1057 Testing inspection, approval and use of power operated cranes, derricks and cableways.-No owner or other person shall authorize or permit the operation of any power operated crane or derrick without a certificate of approval, a certificate of operation and a certificate of on-site inspection. No owner or other person shall authorize or permit the operation of any cableway without a certificate of on-site inspection.
(a) Exceptions.-
(1) The requirements of this section shall not apply to excavating or earth-moving equipment, except cranes used with clamshells.
(2) The requirements of this section shall not apply to cranes or derricks performing an emergency use pursuant to the lawful order of the head of any department.

(3) The requirements of this section shall not apply to truck cranes with telescopic, hydraulic or folding booms, including jibs and any other extensions to the boom, not exceeding one hundred thirty-five feet in length with a manufacturer's rated capacity of three tons or less, except that a certificate of operation, as provided for in this section and in reference standard RS 19-2 shall be required for such cranes with jibs and any other extensions to the boom exceeding fifty feet in length. The above requirement for a certificate of operation shall not apply to a crane used exclusively as a man basket.
(4) The requirements of this section shall not apply to a mobile crane with a boom, including jibs and any other extensions to the boom, not exceeding fifty feet in length with a rated capacity of three tons or less. The commissioner may, by rule and regulation, exempt other mobile cranes of limited size and capacity from any or all of the requirements of this section.
(5) The requirements of this section shall not apply to hoisting machines permanently mounted on the bed of material delivery trucks which are used exclusively for loading and unloading such trucks, provided that the length of boom does not exceed the length of the truck bed by more than five feet and that any material transported thereon shall not be raised more than two feet in the unloading process. Operators of such equipment shall be exempt from licensing requirements prescribed in section 26-166 of title twenty-six of the administrative code.

(b) Certificate of approval.-
(1) The owner of such crane or derrick shall file an application for a certificate of approval on a form prescribed by the department, together with such information as set forth in reference standard RS 19-2 and shall contain the various boom lengths and applicable load ratings for which approval is requested.
(2) Upon the approval by the department of information submitted pursuant to reference standard RS 19-2 and an inspection of the equipment, the department shall issue a certificate of approval for the equipment. Said equipment may be used with pile driving leads, mounted compressors, boilers, magnets, hammers, pile hammers, extractors, jetting equipment, augers, drills, vibrating hammers, mandrels, hoe rams and other similar attachments. A new certificate of approval shall be required when a crane is modified or altered to increase the boom length, jibs or any extensions to the boom beyond the maximum approval length or when the load ratings are increased.

(c) Certificate of operation.-
(1) Upon issuance of a certificate of approval, the department shall also issue the initial certificate of operation which shall expire one year from the date of issuance. The owner of such crane or derrick shall renew the certificate of operation each year.
(2) The commissioner shall approve the crane or derrick if he or she is satisfied after inspections and tests that said crane or derrick is in a safe operating condition.
(3) If the owner applies for renewal of a certificate of operation within not more than sixty or less than thirty days prior to the date of expiration of his or her certificate, such owner may continue to use his or her crane or derrick until the department grants or denies him or her a new certificate.
(4) No change in such crane or derrick not provided for in the certificate of operation may be made until the owner obtains a new certificate of operation.

(d) Certificate of on-site inspection.-
(1) The owner of the premises, building or structure, or his or her designated representative, shall obtain a certificate of on-site inspection for the use of any power operated crane, derrick or cableway used for construction purposes at each job site. Such owner or his or her designated representative shall file an application for a certificate of on-site inspection on a form prescribed by the department, and the fee for such application shall be as provided in section 26-215 of title twenty-six of the administrative code. The applicant shall specify the date when the equipment will be at the job site for use, which date shall be not less than three regular working days from the date of filing said application. Such application shall include the information as set forth in the applicable provisions of reference standards RS 19-2 and RS 19-3.
(2) Upon approval of the application, a copy of said approval shall be given to the applicant. It shall have noted thereon that the equipment shall not be operated prior to the date indicated, which date shall be not less than three regular working days from the filing of the application unless otherwise provided in the applicable provisions of reference standard RS 19-2. It shall be unlawful to operate the aforesaid equipment before the specified date, unless it has been inspected and found to be satisfactory by the department. If the equipment has not been inspected by the department on or before the said date, then the equipment may be operated, pending inspection, provided that the conditions and statements contained in the approved application are complied with. Upon inspection by the department and a finding of satisfactory compliance, the approval shall be deemed to be a certificate of on-site inspection.
(3) The certificate of on-site inspection is only valid if the conditions and statements contained in the approved application are complied with and the hoisting machine is operated in conformance with the provisions of this section and the rules and regulations applicable thereto.
(4) No certificate of on-site inspection shall be required where any article is hoisted or lowered on the outside of any completed building, or for the installation of boilers and tanks, or for the erection, maintenance or removal of signs or sign structures, under the supervision of a

master or special rigger or a master or special sign hanger in conformance with the provisions of chapter one of title twenty-six of the administrative code.

(e) The commissioner shall inquire into the cause of any accident involving hoisting machinery.-The owner or person directly in charge of any hoisting machinery shall immediately notify the administrator and the commissioner following any accident involving hoisting machinery. When an accident involves the failure or destruction of any part of a hoisting machine, no person shall do either of the following, without the permission of the commissioner:

(1) use such hoisting machine, or

(2) remove the hoisting machine or any part thereof from the area of the job site.

(f) Any person who wilfully violates any provision of this section shall be guilty of an offense and shall be subject to a fine not exceeding one thousand dollars.

(g) The commissioner may issue temporary certificates of approval, operation and on-site inspection for any power operated crane during the pendency of an application for certificates of approval and operation upon inspection and upon such analysis and testing as the commissioner may deem necessary. The commissioner may revoke such temporary certificates if the application is denied.

(h) Special requirements for cranes and derricks.-The construction, installation, inspection, maintenance and use of power operated cranes and derricks shall be in conformance with reference standard RS 19-2.

(i) Special requirements for cableways.-The construction, installation, inspection, maintenance and use of cableways shall be in conformance with reference standards RS 18-5 and RS 19-3.

§[C26-1909.5] 27-1058 Conveyors and cableways.-

(a) Walkways.-Walkways along belt conveyors or bucket conveyors shall be kept free of materials and, where five feet or more above the ground, shall be provided with a standard guard rail and toeboard along the outside of the walkway. The guard rail and toeboard may be omitted on the side toward the belt if the walkway is located adjacent to the conveyor.

(b) Trippers.-Where trippers are used to control discharge, a device for throwing the belt or bucket drive into neutral shall be installed at each end of the runway.

(c) Spillage.-Where conveyor belts cross any traveled way, trays shall be installed to catch spillage and overhead protection shall be provided for persons or traffic passing beneath.

§[C26-1909.6] 27-1059 Trucks.-

(a) Maintenance.-All parts and accessories of trucks shall be kept in repair. Brakes shall be so maintained that the vehicle with full load may be held on any grade that may be encountered on the job. Provision shall be made for the immediate application of wheel blocks to trucks traversing ramps steeper than one in ten.

(b) Loading.-Trucks shall not be loaded beyond the manufacturer's rated capacity, nor beyond the legal load limit, where applicable. The loads shall be trimmed before the truck is set in motion to prevent spillage. Loads that project beyond the sides of the truck, or that may be dislodged in transit, shall be removed or securely lashed in place.

§[C26-1909.7] 27-1060 Power buggies.-As used in this section, the term "power buggy" shall mean an automotive vehicle designed or used for the transportation of materials on or about construction sites. It shall not include automobiles, motor trucks, general purpose tractors, or excavating or material handling machinery.

(a) Responsibility of employers and workers.-

(1) Every person causing a power buggy to be used shall provide trained and competent operators and shall carry out or enforce all provisions of this section pertaining to the use, operation, and maintenance thereof.

(2) No person other than the operator assigned by the employer shall operate a power buggy. A power buggy shall be in charge and custody of the operator assigned, and no other person shall in any way interfere with or handle it, nor shall the operator cause or permit any other person to do so.

(3) No power buggy shall be operated unless it is in good operating condition and is so constructed that it is stable under conditions of normal use.

(b) Operation and Construction.-

(1) BRAKES.-Every power buggy shall be provided with brakes and tire surfaces capable of bringing it to a full stop within twenty-five feet on a level surface that is similar to the one on which it will be used and at full rated load and maximum design speed. Brakes shall be capable of being fixed in engagement to hold the full load stationary on a twenty-five percent grade.

(2) ACCIDENTAL STARTING.-All movement controls of every power buggy shall be so arranged or shielded that they cannot be inadvertently engaged or the buggy accidentally set in motion.

(3) PARKING ON GRADES.-No power buggy shall be left unattended on any grade sufficiently steep to cause it to coast if free of engine and brake resistance.

(4) USE ON RAMPS, RUNWAYS AND PLATFORMS.-Power buggies shall not be used on ramps, runways, or platforms that do not meet the requirements of section 27-1053 of article nine of this subchapter.

§[C26-1909.8] 27-1061 Lift and fork trucks.-

(a) Load capacity.-A metal plate with readily legible etched or stamped figures giving the capacity rating in pounds shall be attached to every lift or fork truck.

(b) Maintenance.-All parts and accessories of lift or fork trucks shall be kept in repair and with brakes adequate to maintain the fully loaded vehicle on any grade that may be encountered on the job.

(c) Loading.-No lift or fork truck shall be loaded beyond its capacity rating. No hand-operated pallet truck loaded so that any point on the load is at a greater

height than four feet six inches above the floor shall be moved by pushing unless handled by two persons.
(d) Prohibited use.-No lift or fork truck shall be in motion when the loaded forks are elevated higher than necessary to clear obstructions, except as may be required for positioning, picking up, or depositing the load.

§[C26-1909.9] 27-1062 Hand propelled vehicles.-Hand propelled vehicles shall be constructed and braked to withstand the loads to be carried and shall be maintained in repair. Vehicles with loose parts shall not be used.

§[C26-1909.10] 27-1063 Mixing machines.-Where the public may have access to the working area near charging skips, guard rails shall be erected to enclose the area under the raised skip and the mixing machine. Each time before raising or lowering the charging skip, the operator shall ascertain that no one is in the danger zone.

§[C26-1909.11] 27-1064 Jacks.-
(a) Marking.-The rated capacity of every jack shall be legibly marked in a prominent location on the jack by casting or stamping. The manufacturer shall designate the intended supporting point of the load and the maximum permissible length of lever and force applied.
(b) Overtravel to be limited.-Every jack shall, where practicable, be provided with a positive stop to prevent overtravel; otherwise an indicator to clearly show overtravel shall be provided on the jack.
(c) Maintenance.-Lubrication and operation of jacks shall be in accordance with the recommendations of the manufacturer.
(d) Foundations.-Jacks shall rest on a firm, level foundation adequate to support the load.
(e) Blocking required.-When the object has been lifted to the desired height, blocking or cribbing shall be immediately placed under it.

ARTICLE 11 EXPLOSIVE POWERED AND PROJECTILE TOOLS

§[C26-1910.1] 27-1065 General.-All explosive powered and projectile tools shall be approved.

§[C26-1910.2] 27-1066 Explosive powered tools.-
(a) The provisions of reference standard RS 19-1 shall apply.
(b) The care and storage of explosives shall meet the requirements of the fire department.

§[C26-1910.3] 27-1067 Projectile tools.-
(a) Basic requirements.-
(1) Unless in a particular case the board shall otherwise determine, design and construction must be such as to retain safely all internal pressures which may occur during operation, the discharge mechanism shall be such that the projectile cannot [*sic*] be discharged by dropping the tool, the discharge mechanism shall be such that the discharge of each projectile shall be dependent on a separate and distinct act by the operator, and all safety features shall be durable.
(2) A tool shall have such other characteristics as the board may find necessary or proper to provide safety, alternative or in addition to the foregoing. Such other characteristics may include devices and materials external to the tool itself but associated with its function, and may also include in respect to high velocity projectile tools the basic requirements set forth above for explosive powered tools which discharge projectiles with comparable velocities.
(b) Maintenance.-Every projectile tool shall be properly maintained. No such tool shall be used if any part thereof necessary to retain internal pressures or to prevent accidental discharge of a projectile is not in sound and operable condition.
(c) Operation.-
(1) A projectile [tool]* shall be operated only by an authorized operator who shall be the owner, lessee, or other person having proprietary custody of the tool or any other person whom he or she may authorize to operate it.
(2) While a projectile tool is in the care and custody of an authorized operator, no other person shall handle or in any way molest it.
(3) No authorized operator of a projectile tool shall leave it unattended while it is in a condition to discharge a projectile.
(4) No person shall use a projectile tool for any purpose other than that for which it was manufactured, nor shall such person point it at another person or hold it at an angle permitting the projectile to fly free.
(5) No person shall use a projectile tool in such a way as to endanger persons who may be in the vicinity.
Copy in brackets not enacted but probably intended.

ARTICLE 12 EXPLOSIVES AND BLASTING

§[C26-1911.1] 27-1068 General.-
All handling, transporting, and use of explosives shall meet the requirements of the fire department.

ARTICLE 13 FLAMMABLE AND COMBUSTIBLE MIXTURES, COMPRESSED GASES, AND OTHER HAZARDOUS MATERIALS

§[C26-1912.1] 27-1069 General.-The transportation, handling, storage, and use of all volatile flammable oils, flammable and combustible mixtures, compressed gases, and other hazardous materials shall meet the requirements of the fire department. Also, see subdivision (b) of section 27-1023 of article two of this subchapter, warning signs and lights.

BUILDING CODE OF THE CITY OF NEW YORK

Plus Reference Standards and Selected Rules and Regulations of the Department of Buildings

Local Law No. 76 Effective December 6, 1968
Includes Amendments to October 1, 2004

Michael R. Bloomberg
Mayor

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Commissioner
Department of Buildings

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Commissioner
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revised through October 1, 2004
Volume 2 of 2

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MICHAEL R. BLOOMBERG
MAYOR

PATRICIA J. LANCASTER, A.I.A.
Commissioner

PREFACE

The current Building Code was enacted by the City Council on October 22, 1968, and approved by the Mayor on November 6, 1968. It became effective on December 6, 1968, superseding the Building Code enacted in 1938. The "New Code" is based largely upon nationally accepted performance standards and specifications for materials and construction assemblies.

The present edition updates the Building Code to October 1, 2004.

The State Legislature, pursuant to Chapter 907 of the Laws of 1985, repealed and reenacted the Administrative Code of the City of New York to reflect changes in form, particularly a complete renumbering of the sections of the Code.

Accordingly, General Provisions, Licenses and Building Construction are contained in Chapter 1 of Title 26 and the Building Code is contained in Chapter 1 of Title 27. The old section numbers of the Building Code are shown in brackets, followed by the new section numbers. This serves as a convenience to architectural and engineering professionals and construction industry members familiar with the Code prior to this revision.

To facilitate the adoption of proven results of research and development in the dynamic field of construction, the Code provides that the Buildings Commissioner may adopt new standards or revise existing standards. In the past, this could only be accomplished by legislative action. Moreover, the Code further provides that equipment and materials may be accepted by the Department of Buildings based upon national reference standards and tests conducted by recognized national laboratories. Such acceptance previously required approval by the Board of Standards and Appeals.

Since 1968, there developed a need to respond to new situations or exigencies through the passage of local laws whose provisions were incorporated in the Building Code. Some of these included Local Law 5/73 (Fire Safety in Office Buildings); Local Law 41/78 (Fire Safety in Places of Public Assembly); Local Law 10/80 and Local Law 11/98 (Owners' Inspection of Building Facades); Local Law 10/81 (Owners' Inspection of Elevators); Local Law 16/84 (Fire Safety in Buildings, including Hotels); Local Law 10/99 (sprinkler protection of residential building).

Recent significant amendments to the Building Code include:

- **Padlock Law (Local Law 6/93)**
- **Sidewalk Sheds**
- **Elevators and Escalators**
- **Fees**
- **Registration of Expediters**
- **Boiler Inspections**
- **Consolidation of the Board of Standards and Appeals Equipment Section into the Materials & Equipment Acceptance Section of the Department of Buildings**
- **Cranes and Derricks**
- **Sprinklering of Residential Buildings (Local Law 10/99)**
- **Regulation of Outdoor Advertising (Local Law 14/01)**
- **Use of Mercury Gauges to Test Plumbing, Prohibited (Local Law 17/01)**
- **Awnings (Local Law 44/03)**
- **Carbon Monoxide Detectors (Local Law 07/04)**
- **Sprinklers, Exit Signs, and Photo-Luminescent Marking in High Rise Office Buildings and Other Prospective Changes to the Code relating to Fire Safety (Local Law 26/04)**
- **Mechanical Refrigeration (LL 32/04)**

For further information, readers may wish to refer to the published series of the Department of Buildings' Directives and Memorandums which are available at CityStore (NYC.gov/citystore) or visit the Department of Buildings website at NYC.gov/buildings for the latest policy and procedure notices.

Patricia J. Lancaster, AIA
Commissioner

EDITOR'S NOTE:
In addition to Chapter 907 of the state laws of 1985 mentioned in the preface above, the legislature enacted, effective September 1, 1986, Chapter 839 of the state laws of 1986, which made certain technical corrections and changes to the recodification.
Within the Reference Standards Appendix of this volume are references to specific sections in the Building Code. Standards enacted prior to the recodification of the Building Code refer to the code using the old section numbers. For your convenience, therefore, we have included a two-part conversion table which lists former to current and then current to former section numbers. In addition, the Table of Contents lists old and new major headings.

Editorial notes pointing out discrepancies between the former code and the recodified version not specifically indicated as changes, or references to laws that have amended the code since recodification, are indicated with asterisks and corresponding footnotes in bold italics at the following the section. Obvious errors (such as misspellings) are corrected and noted within the text with a [*sic*] following the particular word.

Page Setup:
Where text is interrupted by a table, left column above the table will continue unto the right column above the table. Text below the table will follow the same pattern.

BUILDING CODE
REFERENCE STANDARDS

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CHAPTER 1

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*RULE OF CONSTRUCTION OF THE BUILDING CODE REFERENCE STANDARDS

Section 1. It shall be a rule of construction for the building code reference standards of the appendix to chapter one of title twenty-seven of the administrative code of the city of New York that references to the sections of the Administrative Code repealed by Chapter 907 of the Laws of 1985, heretofore promulgated and currently in effect, should be deemed to refer to the corresponding new sections of such Code as specified in the distribution table contained in Chapter 907 or as assigned by the State Legislation Bill Drafting Commission.

§2. All Building Code Reference Standards enacted or adopted prior to the effective date of this revision are hereby made subject to the rule of construction established in Section "1" hereof.

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REFERENCE STANDARD RS-2 DEFINITIONS
** REFERENCE STANDARD RS 2-1
Reference Standards Agencies and National Organizations

The following agencies and national organizations promulgate standards referenced in this code and its referenced standards. The abbreviations in front of the agency or national organization is used to identify it. A (bracket) indicates its former abbreviation.

AA
Aluminum Association
Suite 300
900 19th St., N.W.
Washington, D.C. 20006

AAMA (AWMA)
American Architectural Manufacturers Association
2700 River Road
Des Plaines, Illinois 60018

AASHTO, (AASHO)
American Association of State Highway and Transportation Officials
444 North Capital Street
Washington, D.C. 20001

A-CE, (A-OCE)
Army Chief of Engineers
Attn: ENGMC-ES
1000 Independence Avenue, S.W.
Washington, D.C. 20314

ACI
American Concrete Institute
P.O. Box 19150
Redford Station
Detroit, Michigan 48219

*AF & PA, (NLMA), (NFPA), (NFoPA)
American Forest and Paper Association
Suite 800
1111 19th Street, N.W.
Washington, D.C. 20036
DOB 4-17-96

AGA
American Gas Association
1515 Wilson Boulevard
Arlington, Virginia 22209

AGMA
American Gear Manufacturers Association
1901 North Fort Meyer Drive
Arlington, Virginia 22209

AHA (IBI)
American Hardwood Association
205 West Touky Avenue
Park Ridge, Illinois 60068

AISC
American Institute of Steel Construction, Inc.
Wrigley Building
400 North Michigan Avenue
Chicago, Illinois 60611

AISG, (A Ins A), (AIA), (NBFU)
American Insurance Services Group, Inc.

Engineering & Safety Service
85 John Street
New York, N.Y. 10038

**AISI
American Iron and Steel Institute
Suite 1300
1101 17th Street, N.W.
Washington, D.C. 20036-4700
DOB 6-1-96

***AITC
American Institute of Timber Construction
7012 S. Revere Pkwy., Suite 140
Englewood, CO 80112
****DOB 3-14-96***

ANSI (USASI)
American National Standards Institute, Inc.
1430 Broadway
New York, New York 10018

APA
American Plywood Association
P.O. Box 11700
Tacoma, Washington 98411

API
American Petroleum Institute
1220 Street, N.W.
Washington, D.C. 20005

AREA
American Railway Engineering Association
50 F Street, N.W.
Washington, D.C. 20001

*ARI
Air Conditioning and Refrigeration Institute
1501 Wilson Boulevard
Arlington, Virginia 22209

ARI, (AFI), (REMA), (ACRMA), (NWAHACA)
Air Conditioning and Refrigeration Institute
1501 Wilson Road**
Arlington, Virginia 22209

As enacted, but this listing, duplicate of listing below, probably intended to be omitted.
****As enacted, but "Boulevard" probably intended.***

ASCE
American Society of Civil Engineers
United Engineering Center
345 East 47th Street
New York, New York 10017

ASHRAE, (ASHAE)
American Society of Heating, Refrigerating and Air-Conditioning Engineers
1791 Tullie Circle, N.E.
Atlanta, Georgia 30329 ASME
American Society of Mechanical Engineers
United Engineering Center
345 East 47th Street
New York, New York 10017

ASSE
American Society of Sanitary Engineering
P.O. Box 40362
Bay Village, Ohio 44140

Reference Standard 2

ASTM
American Society for Testing and Materials
1916 Race Street
Philadelphia, Pennsylvania 19103

AWPA
American Wood Preservers Association
P.O. Box 849
Stevensville, Maryland 21666

AWPI
American Wood Preservers Institute
1945 Gallows Road
Vienna, Virginia 22180

AWS
American Welding Society
550 N.W. LeJeune Road
Miami, Florida 33125

AWWA
American Water Works Association
6666 West Quincy Avenue
Denver, Colorado 80235

BIA, (SCPI)
Brick Institute of America
11490 Commerce Park Drive
Reston, VA. 22091-1506

BHMA
Building Hardware Manufacturers Association, Inc.
60 East 42nd Street
New York, New York 10165

CISPI
Cast Iron Soil Pipe Institute
Suite 419
5959 Shallowford Road
Chattanooga, TN 37421

CFR
Code of Federal Regulations
Superintendent of Documents
Government Printing Office
Washington, D.C. 20402

CPSC
Consumer Product Safety Commission
Office of the Secretary
Washington, D.C. 20207

CRSI
Concrete Reinforcing Steel Institute
933 North Plum Grove Road
Schaumburg, Illinois 60173-4758

(CS)
(For Commercial or Commodity Standards, see address under DOC)

DEC
Department of Environmental Conservation
50 Wolf Road
Albany, N.Y. 12205

DOC
United States Department of Commerce National Institute
of Standards and Technology
Washington, D.C.*

Gaithersburg, MD 20899
(Available from Superintendent of Documents
Government Printing Office
Washington, D.C. 20402-9325)

[*] ***As enacted, but "Washington, D.C." probably intended to be omitted.***

FCC

Federal Communications Commission
1919 M Street, N.W.
Washington, D.C. 20554

FEMA

Federal Emergency Management Agency
P.O. Box 8181
Washington, D.C. 20024

FMS

Factory Mutual System
Standards-Laboratories Department
1151 Boston-Providence Turnpike
Norwood, Massachusetts 02062

FS

Federal Specifications
General Services Administration
Specification and Consumer Information
Distribution Section (WFSIS)
Washington Navy Yard Bldg. 197
Washington, D. C. 20407

GA

Gypsum Association
810 First Street, N.E.
Suite 510
Washington, D.C. 20002

HPMA, (HPI), (HPMA)

Hardwood Plywood Manufacturers Association
P.O. Box 2789
Reston, Virginia 22090-2789

HUD

U.S. Dept. of Housing and Urban Development
451 Seventh Street, S.W.
Washington, D.C. 20410

IAPMO

International Association of Plumbing and Mechanical Officials
5032 Alhambra Avenue
Los Angeles, California 90032

(IBI)

See AHA

IC

Industrial Code Rules
New York State Department of Labor
N.Y.C. Office
One Main Street
Gair Tower
Brooklyn, New York 11201

ICBO, (UBC)

International Conference of Building Officials
5360 South Workman Mill Road
Whittier, California 90601

IEEE

	Institute of Electrical and Electronics Engineers, Inc. 345 East 47th Street New York, N.Y. 10017
IES	
	Illuminating Engineers Society United Engineering Center 345 East 47th Street New York, New York 10017
I-SANTA	
	Industrial Stapling and Nailing Technical Association 435 North Michigan Avenue Suite 1717 Chicago, Illinois 60611
ISO	
	International Organization for Standardization (Available from ANSI)
MHI, (MHMA)	
	Manufactured Housing Institute 1745 Jefferson Davis Highway Arlington, Virginia 22202
MIL	
	Military Specifications Naval Supply Depot 5801 Tabor Avenue Philadelphia, PA 19111
NAPHCC	
	National Association of Plumbing, Heating, Cooling Contractors 1016 20th Street Washington, D.C. 20036
(NBS)	
	(For National Bureau of Standards, See NIST)
NCMA	
	National Concrete Masonry Association P.O. Box 781 Herndon, Virginia 22070
NCRP	
	National Council on Radiation Protection and Measurements NCRP Publications P.O. Box 30175 Washington, D.C. 20014
NFiPA, (NFPA)	
	National Fire Protection Association Batterymarch Park Quincy, MA 02269
NIST (NBS)	
	National Institute of Standards and Technology U.S. Department of Commerce Gaithersburg, MD 20899
NSF	
	National Sanitation Foundation P.O. Box 1468 Ann Arbor, Michigan 48106
NYCRR	
	New York Code Rules and Regulations Publications Bureau Department of State 162 Washington Avenue

Albany, N. Y. 12231

PDI
Plumbing Drainage Institute
1106 W. 77th Street, South Drive
Indianapolis, Indiana 46260-3318

PCA
Portland Cement Association
5420 Old Orchard Road
Skokie, Illinois 60077

PS
Office of Product Standards
National Bureau of Standards
U.S. Department of Commerce
Washington, D. C. 20234
(Available from Superintendent of Documents)

PSC
New York State Public Service Commission
NYC Office
400 Broome Street
New York, New York 10013

RCRBS
Research Council on Riveted and Bolted Structural Joints of
the Engineering Foundation
345 East 47th Street
New York, New York 10017

RCSHSB
Red Cedar Shingle and Handsplit Shake Bureau
515 116th Avenue, N.E., Suite 275
Bellevue, WA 98004

* SJI
Steel Joist Institute
3127 10th Avenue North Extension
Myrtle Beach, South Carolina 29577-6760
DOB 5-1-99

SMACNA
Sheet Metal and Air-Conditioning Contractors National Association, Inc.
8224 Old Courthouse Road
Tyson's Corner
Vienna, VA 22180

SMPTE
Society of Motion Picture and Television Engineers
595 West Hartsdale Avenue
White Plains, N.Y. 10607-1824

SPIB
Southern Pine Inspection Bureau
4709 Scenic Highway
Pensacola, Florida 32504

SSSI
Steel Scaffolding & Shoring Institute
2130 Keith Building
Cleveland, Ohio 44115

TCA
Tile Council of America
4801 Montgomery Lane
Washington, D.C. 20014

TECO

Timber Engineering Company
5530 Wisconsin Avenue, N.W.
Chevy Chase, Maryland 20815

TPI

Truss Plate Institute, Inc.
583 D'Onofrio Drive
Suite 200
Madison, WI 53719

UBC

Uniform Building Code. (See the International Conference of Building Officials.)

UL

Underwriters Laboratories, Inc.
333 Pfingsten Road
Northbrook, Illinois 60062
or
1285 Melville Road
Melville, New York 11746

ULC

Underwriters' Laboratories of Canada
7 Crouse Road
Scarborough, Ontario, Canada MIR 3A9

(USASI) see ANSI

[**] ***Local Law 13-1987; 213-90 BCR; 135-88 BCR; 237-87 BCR; 428-83 BCR; 705-80 BCR.***

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REFERENCE STANDARD RS-3
OCCUPANCY AND CONSTRUCTION CLASSIFICATIONS

*LIST OF REFERENCED NATIONAL STANDARDS

ASTM E119 Standard Methods of Fire Tests of Building Construction and Materials..... 1983
ASTM E84 Standard Method of Test for Surface Burning Characteristics of Building Materials..... 1987
1341-88 BCR

* REFERENCE STANDARD RS 3-1

ASTM E119-1983-Standard Method of Fire Tests of Building Construction and Materials.
1341-88 BCR

* REFERENCE STANDARD RS 3-2

ASTM E 84-1987-Standard Method of Test for Surface Burning Characteristics of Building Materials.
1341-88 BCR

REFERENCE STANDARD RS 3-3
Occupancy Group Classifications of Zoning Uses
(Appendix A of Zoning Resolution)

Use or Occupancy	Zoning Resolution Use Group	Building Code Occupancy Group
Adhesives manufacture, excluding manufacture of basic components……	17	A, D-1 or D-2 depending on nature of materials involved
Advertising displays manufacture……	17	D-1 or D-2 depending on nature of materials involved
Agricultural machinery manufacture, including repairs……..	18	D-2
Agriculture		
Without nuisance or sales Limitations……...	4	B-2 (no sales) or C (sales)
Without nuisance or sales Limitations……..	17	B-2 (no sales) or C (sales)
Aircraft manufacture (including parts)……...	17	D-1
Airports……		Not applicable
Amusement parks, children's (See children's amusement parks)		
Amusement park activities…….	15	F-2 (outdoor) or F-3 (indoor)
Animal hospitals…….	16	E
Animal pounds or crematoriums……	16	E (pounds) or D-2 (crematoriums)
Antique stores……	6	C
Apartment hotels……...	2	J-2
Apparel (See clothing)		
Appliances		
Electrical appliance Manufacturing…….	17	D-2
Television, radio, phonograph or household appliance stores		
Limited as to floor areas……...	6	C
Unlimited……..	10	C
Household appliance repair shops……	8	C
Arenas, auditoriums, or stadiums		
Limited as to capacity……..	12	F-1b (indoor) or F-2 (outdoor)
Unlimited…….	—	F-1b (indoor) or F-2 (outdoor)
Art Galleries		
Commercial…….	6	F-3
Non-Commercial…….	3	F-3
Art goods manufacture, religious or church, excluding foundry operations……	17	D-2
Art metal craft shops……...	6	C (sales) or D-2 (no sales)

REFERENCE STANDARD RS 3-3 (continued)

Use or Occupancy	Zoning Resolution Use Group	Building Code Occupancy Group
Art needle work……...	11	D-2
Artist's supply stores……...	6	C
Asphalt or asphalt products Manufacture…….	18	A
Athletic equipment manufacture…….	17	D-2
Athletic goods stores……...	6	C
Auctions rooms, public……	9	C
Auditoriums		
Limited as to capacity…….	12	F-1a (with scenery) or F-1b (without scenery)
Unlimited ……	—	F-1a (with scenery) or F-1b (without scenery)
Automobiles		
Dead Storage……	16	B-2
Driving Schools……..	8	E
Glass or mirror shops……..	7	C
Laundries……..…	16	D-2
Manufacture, including parts, or engine rebuilding……..…...	17	D-1
Rental establishments……..	8	E
Repairs, body……...	17	D-1
Repairs, except body repairs……	16	D-1
Sales, open or enclosed……	16	C
Seat cover or convertible top establishments, selling or installation.....	7	C
Showrooms, no repair services.....	9	C
Supply stores, no repair services	7	C
Tire sales establishments.....	7	C
Wrecking establishments	18	D-2
Automotive service stations		
Limited as to total area.....	13	E
Unlimited	13	E
Awnings		
Custom shops, limited as to floor area	7	C
Manufacture, with no limitation on production or on floor area	17	D-1
Bakeries		
Limited as to floor area used for production	6	D-1
Unlimited (See food products processing)	—	D-1
Banks, including drive-in banks.....	6	E
Banquet halls.....	9	F-4
Barber shops	6	E
Baths, steam.....	9	F-3
Beaches, commercial	13	Not applicable
Beauty parlors.....	6	E
Beverages		
Bottling works	17	D-2
Manufacture		
Alcoholic	18	D-1
Non-alcoholic	17	D-2
Bicycle		
Manufacture	17	D-2
Rental or repair shops	7	E
Sales.....	6	C
Billiard parlors.....	8	F-3
Blacksmith shops.....	16	D-1
Blueprinting establishments	9	D-2
Boarding houses.....	2	J-1

REFERENCE STANDARD RS 3-3 (continued)

Use or Occupancy	Zoning Resolution Use Group	Building Code Occupancy Group
Boatels	7	J-1
Boats or ships		
Building or repair, for boats less than 200 ft. in length	17	D-1
Building or repair, for boats 200 ft. or more in length	18	D-1
Docks, for small pleasure boats	14	Not applicable
Fuel sales, open or enclosed Unrestricted as to location	13	E
Restricted as to location	14	E
Rentals, opened or enclosed	14	E
Sales, opened or enclosed	16	C
Showrooms, with no repair services	9	C
Storage, repair, or painting, including the incidental sales of boats, boat parts, or accessories, with restrictions on boat size and setbacks	14	D-1
Bone distillation	18	D-1
Books		
Binding (see printing) Hand binding or tooling	11	D-2
Stores	6	C
Bottling works, for all beverages	17	D-2
Bowling alleys		
Limited as to number of lanes	8	F-3
Unlimited	12	F-3
Breweries	18	D-1
Brick manufacture	18	D-2
Brush or broom manufacture	17	D-1
Building materials		
Sales, open or enclosed, limited as to lot area	16	C
Yards, for sales, storage, or handling, open or enclosed, unlimited as to lot area except in the case of lumber yards	17	C (sales) or B-2 (no sales)
Bus stations		
With less than 10 berths	—	D-1 (bus area) and F-3 (passenger area)
With 10 or more berths	—	D-1 (bus area) and F-3 (passenger area)
Business machines		
Manufacture	17	D-2
Small, repair shops	9	E
Stores, sales, or rentals	10	C
Business schools or colleges	9	G
Camera manufacture	17	D-2
Camps, overnight or outdoor day	13	F-2 (outdoor) or F-3 (indoor)
Candy stores	6	C
Canvas or canvas products manufacture	17	D-1
Carnivals, temporary	13	F-2 (outdoor) or F-3 (indoor)
Carpentry shops	16	D-1
Carpet		
Cleaning establishments	16	A or D-1 depending on nature of materials involved
Manufacture	17	D-1
Carpet, rug, linoleum or other floor covering stores		
Unlimited	10	C
Catering establishments	9	C (outside consumption) or F-4 (banquets)
Cement manufacture	18	D-2
Cemeteries	4	B-2 (mausoleums, crypts)
Ceramic products		

REFERENCE STANDARD RS 3-3 (continued)

Use or Occupancy	Zoning Resolution Use Group	Building Code Occupancy Group
Manufacture, custom	11	D-2
Manufacture	17	D-2
Charcoal manufacture	18	D-1
Chemicals		
Compounding or packaging	17	A, D-1 or D-2 depending on nature of materials involved
Manufacture	18	A, D-1 or D-2 depending on nature of materials involved
Children's amusement parks		
Small	13	F-2
Medium size	15	F-2
Large size	15	F-2
Unlimited as to size	15	F-2
Churches	4	F-1b
Cigar stores	6	C
Circuses, temporary	13	F-1a
Clay manufacture	18	D-2
Clay pits	—	Not applicable
Cleaning or cleaning and dyeing establishments (see dry cleaning)	—	
Clocks		
Manufacture	17	D-2
Stores or repair shops	6	C (sales) or E (repair)
Clothing		
Accessory stores (see Clothing stores)		
Custom manufacture or altering for retail	11	A or D-1 depending on nature of materials involved
Manufacture	17	A or D-1 depending on nature of materials involved
Rental establishments	9	E
Stores		
Limited as to floor area	6	C
Unlimited	10	C
Clubs		
Night (See eating or drinking places)		
Non-commercial		
All types except those with outdoor swimming pools	4	J-1 (with residence) or E (without residence)
Clubs with outdoor swimming pools more than 500 ft. from all lot lines	4	J-1 (with residence) or E (without residence)
All types, including outdoor swimming pool clubs or clubs with outdoor swimming pools less than 500 ft. from any lot line	6, 14	J-1 (with residence) or E (without residence)
Coal		
Products manufacture	18	A
Sales, open or enclosed		
Limited as to lot area	16	A
Unlimited (see coal storage)		
Storage, open or enclosed	18	A
Coin stores	6	C
Coke products		
Manufacture	18	A
Colleges or universities, including professional schools, or college or school dormitories or fraternity or sorority houses, but excluding business colleges or trade schools	3	G (classroom buildings), J-2 (dormitories)
Commercial parking garages or lots (See parking garages, public or parking lots, public)		
Community centers	4	F-3

REFERENCE STANDARD RS 3-3 (continued)

Use or Occupancy	Zoning Resolution Use Group	Building Code Occupancy Group
Concrete batching (See building materials yards)		
Concrete products manufacture (See stone processing or stone products)		
Construction machinery manufacture, including repairs	18	D-2
Contractors' establishments-electrical, glazing, heating, painting, paper hanging, plumbing, roofing, or ventilating		
Limited as to floor area	7	E
Limited as to open storage	16	E
Unlimited (See contractors' yards)		
Contractors' yards	17	Not applicable
Convalescent homes (See nursing homes)		
Convents	3	J-3
Cork products		
Manufacture	17	D-1
Cosmetics or toiletries		
Manufacture	17	A or D-1 depending upon nature of materials involved
Costume rental establishments	9	C
Cotton ginning or cotton wadding or liner manufacture	17	A
Court houses	6	F-1b
Crating establishments	16	A
Crematoriums		
Animals	16	B-2 (urn storage) and F-1b (chapel)
Human	16	B-2 (urn storage) and F-1b (chapel)
Dance halls, public	12	F-4
Dance studios (See studios)		
Day camps, outdoor	13	F-2
Delicatessen stores (See food stores)		
Dental		
Instruments manufacture	11	D-2
Laboratories (See laboratories, medical or dental)		
Offices (See medical offices)		
Department stores	10	C
Diaper supply establishments	16	E
Disinfectants manufacture	18	D-1
Dormitories, college or school (See colleges or universities)		
Drafting instruments		
Manufacture	11	D-2
Dressmaking shops, custom	6	D-1
Drinking places (See eating or drinking places)		
Drive-in theaters		F-2
Drug stores	6	C
Dry cleaning or clothes pressing establishments, limited as to floor area, solvents and machine capacity	6	D-1 or D-2 (See Section 705.0)
Dry cleaning or cleaning and dyeing establishments, without restrictions	16	D-1 or D-2 (See Section 705.0)
Dry goods stores		
Limited as to floor area	6	C
Unlimited	10	C
Dumps	18	Not applicable
Eating or drinking places		
With restrictions on entertainment	6	F-4
Without restrictions on entertainment or dancing but limited to location		

REFERENCE STANDARD RS 3-3 (continued)

Use or Occupancy	Zoning Resolution Use Group	Building Code Occupancy Group
in hotels	10	F-4
Without restrictions	12	F-4
Electric		
Power or steam generating plants	18	D-1
Substations		
Public transit or railroad		
Small or medium size	17	D-2
Large	17	D-2
Utility		
Small	6	D-2
Medium size	17	D-2
Large	17	D-2
Electrical		
Appliance		
Manufacture	17	D-2
Stores (See appliances, television, radio, phonograph or household appliance stores)		C
Contractors (See contractors' establishments)		
Equipment assembly, not including electrical machinery	17	D-2
Supplies, manufacturing	17	D-2
Electrolysis studios	6	E
Electrotyping or stereotyping (See printing)		
Engraving or photo-engraving (see printing)		
Excelsior manufacture	18	A
Exterminators	7	E
Fabric stores (See dry goods stores)		
Fairs, temporary	13	F-2 (outdoors) or F-3 (indoors)
Feathers		
Bulk processing, washing, curing, or dyeing	18	A
Products manufacture, except washing , curing or dyeing	17	A
Felt		
Bulk processing, washing, curing, or dyeing	18	D-1
Products manufacture, except washing, curing or dyeing	17	D-1
Fertilizer manufacture	18	D-1
Filling stations (See automotive service stations)		
Film, photographic, manufacture	18	D-1
Fire Stations	6, 14	D-2 (garage) and J-2 (dormitory)
Fish products, packing or processing	18	D-1
Fishing tackle or equipment rental or sales	6, 14	C
Florist shops	6	C
Food		
Products processing, except meat slaughtering or preparation of fish for packing	17	D-1
Stores, including supermarkets, grocery stores, meat markets, or delicatessen stores	6	C
Foundries, ferrous or non-ferrous	18	D-1
Fraternity houses (See colleges or universities)		
Frozen food lockers	6	B-2
Fuel briquettes manufacture	18	D-1

REFERENCE STANDARD RS 3-3 (continued)

Use or Occupancy	Zoning Resolution Use Group	Building Code Occupancy Group
Fuel sales, open or enclosed		
Limited as to lot area	16	E
Unlimited (See coal storage, petroleum storage, or lumber yards)		
Funeral establishments	7	F-1b
Fungicides manufacture	18	D-1
Fur		
Goods manufacture, not including tanning or dyeing	17	D-2
Tanning, curing, finishing, or dyeing	18	A
Furniture		
Custom shops	16	D-1
Manufacture	17	A or D-1 depending upon nature of materials involved
Stores	6, 10	C
Limited as to floor area	6	C
Unlimited	10	C
Furriers shops, custom	6	C
Garages (See parking garages, public)		
Garbage incineration or reduction	18	D-1
Garden supply stores	6	C
Gardens, truck (See agriculture)		
Gas		
Manufacture	18	A
Public utility stations for metering or regulating	6	D-1
Storage	18	A
Substations	6	D-1
Gasoline service stations (See automotive service stations)		
Gelatin manufacture	18	D-1
Generating plants, electric or steam	18	D-1
Gift shops	6	C
Glass		
Cutting shops	16	D-2
Manufacture	18	D-2
Products manufacture from previously manufactured glass	17	D-2
Glazing contractors (See contractors' establishments)		
Glue manufacture	18	D-1
Golf		
Courses	4	Not applicable
Courses, miniature	13	F-3 (indoor)
Driving ranges	13	F-3 (indoor)
Grain		
Milling or processing	18	A
Storage	18	A
Graphite or graphite products		
Manufacture	18	D-1
Gravel pits		Not applicable
Greenhouses (See agriculture)		
Grocery stores (See food stores)		
*Group homes	1, 2	J-3
Local Law 39-1972		
Gymnasiums	9	F-3
Gypsum manufacture	18	D-2
Hair		
Bulk processing, washing, curing, or dyeing	18	D-2
Products manufacture (except washing, curing, or dyeing)	17	D-2
Products manufacture, custom	11	D-2
Hardware		

REFERENCE STANDARD RS 3-3 (continued)

Use or Occupancy	Zoning Resolution Use Group	Building Code Occupancy Group
Manufacture	17	D-2
Stores	6	C
Hat		
Bodies manufacture	17	D-1
Repair shops	6	C
Health centers	4	H-2
* Government operated health centers or independent out-of-hospital health facilities incorporated pursuant to section 35 of the New York State Social Services law	4	E
Local Law 39-1972		
Health services (See physical culture establishments)		
Heating contractors (See contractors' establishments)		
Heating equipment showrooms, without repair facilities	9	E
Heliports		D-1
Hemp products manufacture		D-1
Home occupations		E
Hosiery manufacture	17	D-1
Hospitals, except animal hospitals		
Non-profit or voluntary, and related facilities	4	H-2
Proprietary, and related facilities	4	H-2
Hotels		
Transient	5	J-1
Apartment	2	J-2
Household		
Appliance repair shops	8	E
Appliance stores (See appliances television, radio, phonograph, or household appliance stores)		
Equipment or machinery repair shops	16	D-2
Ice cream stores	6	C
Ice		
Manufacture, dry or natural	17	D-2
Sales, open or enclosed		
Limited as to lot area	16	C
Unlimited (See refrigerating plants)		C
Ice skating rinks, outdoor	4	F-2
Incineration or reduction of garbage, offal, or dead animals	18	D-1
Ink or inked ribbon manufacture	17	A or D-1 depending on nature of materials involved
Insecticides manufacture	18	D-1
Institutions, philanthropic or non-profit		
With sleeping accommodations	3	J-1 or J-2 depending on whether short or long term basis
Without sleeping accommodations	4	E
Interior decorating establishments		
Limited as to floor area for processing, servicing, or repairs	6	C
Unlimited (See furniture, textiles , or upholstering)		C
Jewelry		
Manufacture		

REFERENCE STANDARD RS 3-3 (continued)

Use or Occupancy	Zoning Resolution Use Group	Building Code Occupancy Group
Costume	17	D-2
From precious metals	11	D-2
Shops	6	C
Junk Yards	18	Not applicable
Jute products manufacture	17	D-1
Kennels	16	E
Laboratories		
Medical or dental, for research or testing, with limitations on objectionable effects	9	D-2
Research, experimental, or testing	17	D-2
Lampblack manufacture	18	D-1
Laundries, with no limitations on type of operation	16	D-2
Laundry establishments, hand or automatic self-service	6	E
Leather		
Tanning, curing, finishing or dyeing	18	A
Goods stores	6	C
Products manufacture	17	D-1
Libraries	3	G
Linen supply establishments	16	E
Linoleum		
Manufacture	18	A
Stores (See carpet stores)		C
Liquor stores, package	6	C
Loan offices	6	E
Locksmith shops	6	E
Lots (See parking lots, public)		
Luggage		
Manufacture	17	D-1
Stores	6	C
Lumber		
Processing or woodwork, bulk	18	D-1
Sales		
Limited as to lot area (See building materials sales)		D-1
Unlimited	18	D-1
Yards		
Limited as to lot area	17	D-1
Unlimited	18	D-1
Machine		
Shops including tool, die or pattern making	16	D-2
Tools manufacture	17	D-2
Machinery		
Manufacture or repair		
Heavy	18	D-2
Miscellaneous or electrical equipment	17	D-2
Rental or sales establishments	16	C
Repair shops	16	E
Machines, business (See business machines)		
Manure storage	18	B-2
Markets		
Retail, including meat (See food stores)		
Wholesale, produce or meat	17	C
Masseurs	9	E

REFERENCE STANDARD RS 3-3 (continued)

Use or Occupancy	Zoning Resolution Use Group	Building Code Occupancy Group
Matches manufacture	18	A
Mattress manufacture, rebuilding or renovating	17	A
Meat		
Markets		
Retail (See food stores)		C
Wholesale	17	C
Slaughtering or preparation for packing	18	D-1
Medical		
Appliances		
Custom manufacture	11	D-2
Manufacture	17	D-2
Stores	6	C
Instruments, manufacture	11	D-2
Laboratories (See laboratories, medical)		
Offices or group medical centers		
Limited as to location within building	4	E
Unlimited	6	E
Meeting halls	6	F-1b
Metals manufacture		
Alloys or foil, miscellaneous	18	D-2
Casting or foundry products, heavy	18	D-2
Finishing, plating, grinding, sharpening, polishing, cleaning, rustproofing, heat treatment, or similar processes	17	D-1
Ores reduction or refining	18	D-2
Products treatment or processing	18	D-2
Reduction, refining, smelting, or alloying	18	D-2
Stamping or extrusion	17	D-2
Treatment or processing	18	D-2
Millinery shops	6	C
Mining machinery manufacture, including repairs	18	D-2
Mirror silvering shops	16	D-2
Monasteries	3	J-3
Monument		
Sales establishments, with incidental processing to order	7	C
Works, with no limitations on processing	18	D-2
Motels	7	J-1
Motion picture production	17	D-1
Motorcycles		
Manufacture	17	D-1
Repairs, body	17	D-1
Repairs, except body repairs	16	D-2
Sales, open or enclosed	16	E
Showrooms, with no repair services	9	E
Motor freight stations (See trucking terminals)		
Motor vehicles, dead storage	16	B-2
Moving or storage offices		
Limited as to storage	7	E
Unlimited	16	E
Museums	3	F-3

REFERENCE STANDARD RS 3-3 (continued)

Use or Occupancy	Zoning Resolution Use Group	Building Code Occupancy Group
Music stores	6	C
Music studios (See studios)		
Musical instruments		
Manufacture		
Excluding pianos and organs	11	D-2
Including pianos and organs	17	D-1
Repair shops	9	D-2
Newspaper publishing	17	E
Newsstands, open or closed	6	C
Novelty products manufacture	17	D-1
Novitiates	3	J-3
Nurseries (See agriculture)		
Nursing homes		
Philanthropic or non-profit	3	H-2
Proprietary	3	H-2
Oakum products manufacture	17	D-1
Office equipment or machinery repair shops	16	E
Office or business machine stores, sales or rental	10	E
Offices		
Business, professional or Governmental	6	E
Dental, medical, or osteopathic (See medical offices)		
Wholesale, with storage restricted to samples	10	E
Oil cloth manufacture	18	A
Oil, public utility stations for metering or regulating	6	D-1
Oil sales, open and enclosed		
Limited as to lot area	16	C
Unlimited (See petroleum or petroleum products storage)		C
Optical		
Equipment manufacture	17	D-2
Goods manufacture	11	D-1
Optician or optometrist establishments	6	E
Orthopedic		
Appliances		
Custom manufacture	11	D-2
Manufacture	17	D-1
Stores	6	C
Instruments, manufacture	11	D-2
Osteopathic offices (See medical offices)		
Packing or crating establishments	16	D-1
Packing materials manufacture	18	D-1
Paint		
Manufacture	18	A
Stores	6	C
Painting contractors (See contractors' establishments)		
Paper		
Mills (See wood pulp or fiber)		D-1
Products manufacture	18	D-1
Stock companies	18	B-1
Paper-hanging contractors (See contractors' establishments		
Parish houses	4	J-3
Parks, public or private	4	Not applicable

REFERENCE STANDARD RS 3-3 (continued)

Use or Occupancy	Zoning Resolution Use Group	Building Code Occupancy Group
Parking garages, public		
Capacity of 100 spaces or less	8	B-1 or B-2 (See Section 709.2)
Capacity of 101 to 150 spaces	8	B-1 or B-2 (See Section 709.2)
Capacity of more than 150 spaces		B-1 or B-2 (See Section 709.2)
Parking lots, public		
Capacity of 100 spaces or less	8	(See Section 712.0)
Capacity of 101 to 150 spaces	8	(See Section 712.0)
Capacity of more than 150 spaces		(See Section 712.0)
Pawn shops	8	C
Peat storage	18	B-2
Penny arcades	15	F-3
Perfumed or perfumed soaps, compounding only, not including soap manufacture	17	A
Pet shops	6	C
Petroleum or petroleum products		
Refining	18	A
Storage and handling	18	A
Pharmaceutical products manufacture	17	A or D-1 depending on nature of materials used
Phonograph		
Repair shops	8	E
Stores (See appliances)		C
Photographic		
Developing or printing establishments		
Retail	6	C
Wholesale		
Limited as to floor area	9	D-2
Unlimited	16	D-2
Equipment		
Manufacture (except film)	17	D-2
Stores	6	C
Studios	6	E
Supply stores	6	C
Photostatting establishments	9	C
Physical culture establishments	9	F-3
Picture framing stores	6	C
Plastics		
Products, manufacture	17	A
Raw, manufacture	18	A
Platemaking (See printing)		
Playgrounds		F-2
Plumbing		
Contractors (See contractors' establishments)		
Equipment manufacture (See tools or hardware mfg.)		
Showrooms, without repair facilities	9	E
Police Stations	6	E (offices) and H-1 (cells)
Pool halls	8	F-3
Porcelain products manufacture	18	D-2
Post offices	6	E
Poultry		
Killing establishments, for retail sales on the same zoning lot only	16	D-1
Packing or slaughtering	18	D-1
Precision instruments manufacture		
Optical equipment, clocks, or similar products	17	D-2
Medical, dental, or drafting instruments, optical goods,		

REFERENCE STANDARD RS 3-3 (continued)

Use or Occupancy	Zoning Resolution Use Group	Building Code Occupancy Group
or similar products	11	D-2
Printing		
Custom	11	D-1
Limited as to floor area	9	D-1
Unlimited	17	D-1
Prisons	12	H-1
Produce or meat markets, wholesale	17	C
Public auction rooms	9	C
Public transit yards	16	Not applicable
Publishing	17	D-1
Pumping stations, water or sewage	6	D-2
Rabbit		
Killing establishments, for retail sales on the same zoning lot only	16	D-1
Packing or slaughtering	18	D-1
Racetracks		F-2
Radio		
Appliance repair shops	8	C
Stores (See appliances)		C
Studios	10	E
Towers, non-accessory		K
Radioactive waste disposal services	18	D-1
Railroad		
Equipment manufacture, including railroad cars or locomotives	18	D-2
Passenger stations		F-3
Right-of-way	4	Not applicable
Substations		
Small or medium size	17	D-2
Large	17	D-2
Railroads, including rights-of-way, freight terminals, yards or appurtenances, or facilities or services used or required in railroad operations, but not including passenger stations	17	Not applicable
Record stores	6	C
Recreation centers, non-commercial	4	F-2 (outdoor) F-3 (indoor)
Rectories	4	J-3
Reducing salons	9	F-3
Refreshments stands, drive-in	7	F-2
Refrigerating plants	18	D-2
Religious or church art goods manufacture	17	D-2
Residences		
Single-family detached	1	J-3
One-family semi-detached or two-family detached or semi-detached	2	J-3
Boarding or rooming houses	2	J-1
All other	2	J-1 or J-2
Rest homes (See nursing homes)		
Riding academies, open or enclosed	16	E (offices) and B-1 (stables)
Roofing contractors (See contractors' establishments)		
Rooming houses	2	J-1
Rubber		
Processing or manufacture, natural or synthetic	18	D-1

REFERENCE STANDARD RS 3-3 (continued)

Use or Occupancy	Zoning Resolution Use Group	Building Code Occupancy Group
Products manufacture (excluding all natural or synthetic rubber processing)	17	D-1
Rug stores (See carpet stores)		
Sailmaking establishments	7, 14	D-1
Salvage storage	18	B-1 or B-2, depending on materials
Sand pits		Not applicable
Sanitariums		
Philanthropic or non-profit	3	H-2
Proprietary	3	H-2
Sawmills	18	D-1
Scenery construction	17	D-1
Schools		
Dormitories (See colleges or universities)		
Nursery, kindergarten, elementary or secondary schools	3	G
With no living or sleeping accommodations	3	G
Trade or other schools for adults, limited as to objectionable effects	9	G
Trade schools for adults, unlimited	16	G
Scrap metal, paper, and rag storage	18	B-1
Seed stores	6	C
Seminaries	4	G
Settlement houses	4	J-1
Sewage		
Disposal plants	18	D-1
Pumping stations	6	D-2
Sewing machine stores, selling household machines only	6	C
Ship chandlers	11	C
Ship or boat building or repair yards, for ships 200 ft. in length or over	18	D-1
Shipping, waterfront	17	Not applicable
Shoddy manufacture	17	A
Shoes		
Manufacture	17	E
Repair shops	6	D-1
Stores	6	C
Sign painting shops		
Limited as to floor area	7	D-2
Unlimited	16	D-1
Silver plating shops, custom	16	D-2
Silverware manufacture, plate or sterling	17	D-2
Sisal products manufacture	17	A
Size manufacture	18	D-1
Skating rinks		
Indoor	12	F-3
Outdoor, ice	4	Not applicable
Outdoor, roller	13	F-2
Slag piles	18	F-2
Slaughtering of animals or poultry	18	D-1
Soap or detergents		
Manufacture, including fat rendering	18	A
Packaging only	17	D-1
Soldering shops	16	D-2
Solvent extracting	18	A
Sorority houses (See colleges or universities)		

REFERENCE STANDARD RS 3-3 (continued)

Use or Occupancy	Zoning Resolution Use Group	Building Code Occupancy Group
Sporting equipment manufacture	17	D-1
Sporting goods stores	6	C
Stable for horses	16	B-1
Stadiums		
Limited as to capacity	12	F-2
Unlimited		F-2
Stamp stores	6	C
Stationary stores	6	C
Statuary, mannequins, figurines, religious or church art goods manufacture, excluding foundry operations	17	D-2
Steel products		
Miscellaneous fabrication or assembly	17	D-2
Structural products manufacture	18	D-2
Stock yards or slaughtering of animals or poultry	18	D-1
Stone processing or stone products	18	D-2
Storage		
Wholesale	16	B-2
Offices (See moving or storage offices)		E
Studios		
Music, dancing, or theatrical	9	F-3
Radio or television	10	F-1a (with scenery) or F-1b (without scenery)
Sugar Refining	18	D-1
Swimming pools		
Commercial	13	F-2 (outdoor) or F-3 (indoor)
Non-Commercial (See clubs)		F-2 (outdoor) or F-3 (indoor)
Table tennis halls	12	F-3
Tailor shops, custom	6	E
Tanning (See leather or fur)		A
Tapestries manufacture	11	D-1
Tar products manufacture	18	D-1
Taxidermist shops	7	C
Telegraph offices	6	E
Telephone exchanges or other communications equipment structures	6	E
Television		
Repair shops	8	C
Stores (See appliances)		C
Studios	10	F-1a (scenery) or F-1b (no scenery) or D-2 (no audience)
Towers, non-accessory		K
Tennis courts, indoor	4	F-2
Terminal facilities at river crossings for access to electric, gas, or steam lines	6	D-2
Textiles		
Bleaching	18	D-1
Products manufacture	17	D-1
Spinning, weaving, manufacturing, dyeing, printing, knit goods, yarn, thread, or cordage	17	D-1
Theaters		
Limited capacity	8	F-1a (with scenery) or F-1b (without scenery)
Unlimited capacity	8	F-1a (with scenery) or F-1b (without scenery)
Theaters, drive-in	—	F-2
Theatrical studios (See studios)		

REFERENCE STANDARD RS 3-3 (continued)

Use or Occupancy	Zoning Resolution Use Group	Building Code Occupancy Group
Tile Manufacture	18	D-2
Tire sales establishments including installation services	7	C
Tobacco		
Curing or manufacture, or tobacco products manufacture	17	D-1
Stores	6	C
Toiletries manufacture, not including soap manufacture	17	A or D-1 depending upon materials involved
Tool or hardware manufacture	17	D-2
Topsoil storage	18	B-2
Tourist cabins	7	J-1
Towel supply establishments	16	E
Toys		
Manufacture	17	D-1
Stores	6	C
Trade or other schools for adults		
Limited as to objectionable effects.	9	G
Unlimited	16	G
Trade expositions		
Limited as to rated capacity	12	F-2 (outdoor) F-3 (indoor)
Unlimited		F-2 (outdoor) F-3 (indoor)
Trailer camps	7	(See section 714.0)
Trailer		
Manufacture, including parts	17	D-1
Repairs, body	17	D-1
Sales, open or enclosed	16	C
Showrooms, with no repair services	9	E
Transit substations		
Small or medium size	17	D-2
Large	17	D-2
Travel bureaus	6	E
Truck gardens (See Agriculture)		
Truck		
Manufacture (including parts) or engine rebuilding	17	D-1
Repairs, body	17	D-2
Repairs, except body repairs	16	D-2
Sales, open or enclosed	16	C
Showrooms, with no repair services	9	E
Trucking terminals or motor freight stations		
Limited as to lot area	16	B-1
Unlimited	17	B-1
Turpentine manufacture	18	A
Typewriter stores	6	C
Typewriter or other small business machine repair shops	9	C
Typography (See printing)		
Umbrellas		
Manufacture	17	D-1
Repair shops	9	D-2
Undertakers (See funeral establishments)		
Upholstering		
Bulk, including shops not dealing directly with consumers	17	D-1
Shops dealing directly with consumers	8	D-2
Variety stores		
Limited as to floor area	6	C
Unlimited	10	C

REFERENCE STANDARD RS 3-3 (continued)

Use or Occupancy	Zoning Resolution Use Group	Building Code Occupancy Group
Varnish manufacture	18	A
Vehicles		
Dead storage of motor	16	B-2
Manufacture, children's	17	D-1
Storage, commercial or public utility, open or enclosed	16	B-1 (enclosed) (See section 710.0 for open)
Venetian blind, window shade, or awning		
Custom shops, limited as to floor area	7	C
Manufacture, with no limitation on production or on floor area	17	A or D-1 depending upon nature of materials involved
Ventilating contractors (See contractors' establishments)		
Ventilating equipment showrooms, without repair facilities	9	E
Wallpaper stores	6	C
Warehouses	16	B-1 or B-2, depending on nature of materials involved
Watch or clock stores or repair shops	6	C
Watch making	11	D-2
Waterfront shipping	17	Not applicable
Water pumping stations	6	D-2
Wax products manufacture	17	A
Weaving, hand	11	D-1
Wedding chapels	9	F-1b
Welding shops	16	D-1
Welfare centers	4	E
Wholesale establishments		
Accessory storage limited to 1,500 sq. ft.	7	B-1 or B-2 depending on nature of materials stored
Accessory storage limited to 2,500 sq. ft.	11	B-1 or B-2 depending on nature of materials stored
Unlimited accessory storage	16	B-1 or B-2 depending on nature of materials stored
Wholesale offices or showrooms, with storage restricted to samples	10	E
Window shades		
Custom shops, limited as to floor area	7	C
Manufacture, without limitation on production or on floor area	17	D-1
Wood		
Bulk processing or woodworking	18	D-1
Distillation	18	D-1
Products manufacture	17	D-1
Pulp or fiber, reduction or processing, including paper mill operations	18	D-1
Sales, open or enclosed		
Limited as to lot area	16	C
Unlimited (See lumber yards)	—	C
Woodworking shops, custom	16	A or D-1 depending upon nature of materials involved
Wool scouring or pulling		D-1

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* REFERENCE STANDARD RS-4 BUILDING LIMITATIONS

LIST OF REFERENCED NATIONAL STANDARDS

** FEMA Maps of the special flood hazard areas of the City of New York, community-panel Numbers 3604970001 to 0131 inclusive, effective date: May 21, 2001 ……..……...…. 2001

A scientific and engineering report entitled "Flood Insurance Study, City of New York, New York, Bronx, Queens, New York, Kings, and Richmond Counties" dated……... May 21, 2001

Flood Boundary and Floodway Map (multiple panels) Index No. 360497 0001-0131, whose effective date is May 21,..2001

Letter of Map Revision effective July 3, 2002, FEMA case # 01-02-045P, revising FIRM panel 0149……...2002

The Flood Insurance Study and/or maps are on file at: The Department of City Planning, Waterfront Division, 22 Reade Street, New York, New York.

The maps for Staten Island are on file at: The Office of the Borough President, Topographical Bureau, Staten Island Borough Hall, and the Borough Office of the Department of Buildings, Staten Island Borough Hall.

FEMA 55 Design and construction manual for residential buildings in coastal high hazard areas (Coastal construction manual), dated February 1986……..……...…….. 1986

FEMA 85 Manufactured home installation in flood hazard areas, dated September 1985…..…… 1985

FEMA 102 Floodproofing non-residential structures, dated May 1986……..…….. 1986

ANSI A117.1 American national standard for buildings and facilities providing accessibility and usability for physically handicapped people, as modified ……..…….. 1986

**** Local Law 33-1988; Local Law 58-1987***
***** DOB 8-11-02; 5-21-01; 9-24-00; 8-21-9***

FIRE DISTRICT MAPS

Borough of Richmond

Reference Standard RS4-1

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NOTES:

[1] **FIRE DISTRICT MAPS LEGEND**

Inside Fire District

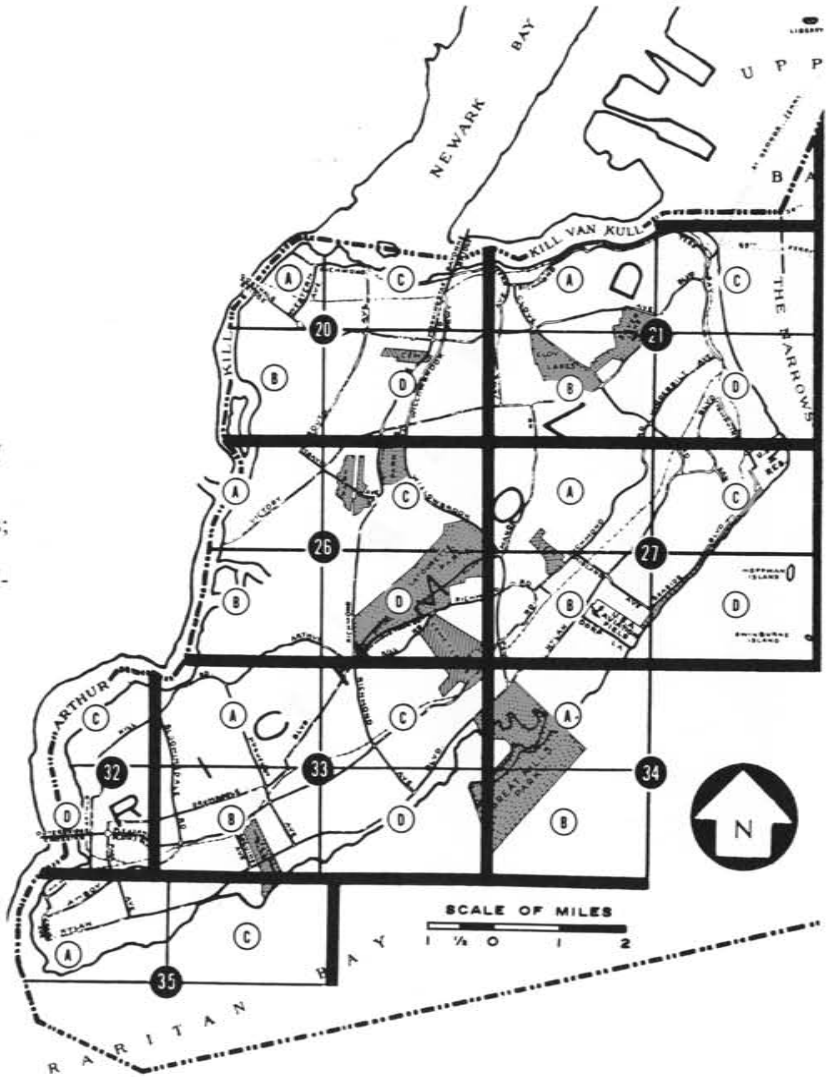
Outside Fire District

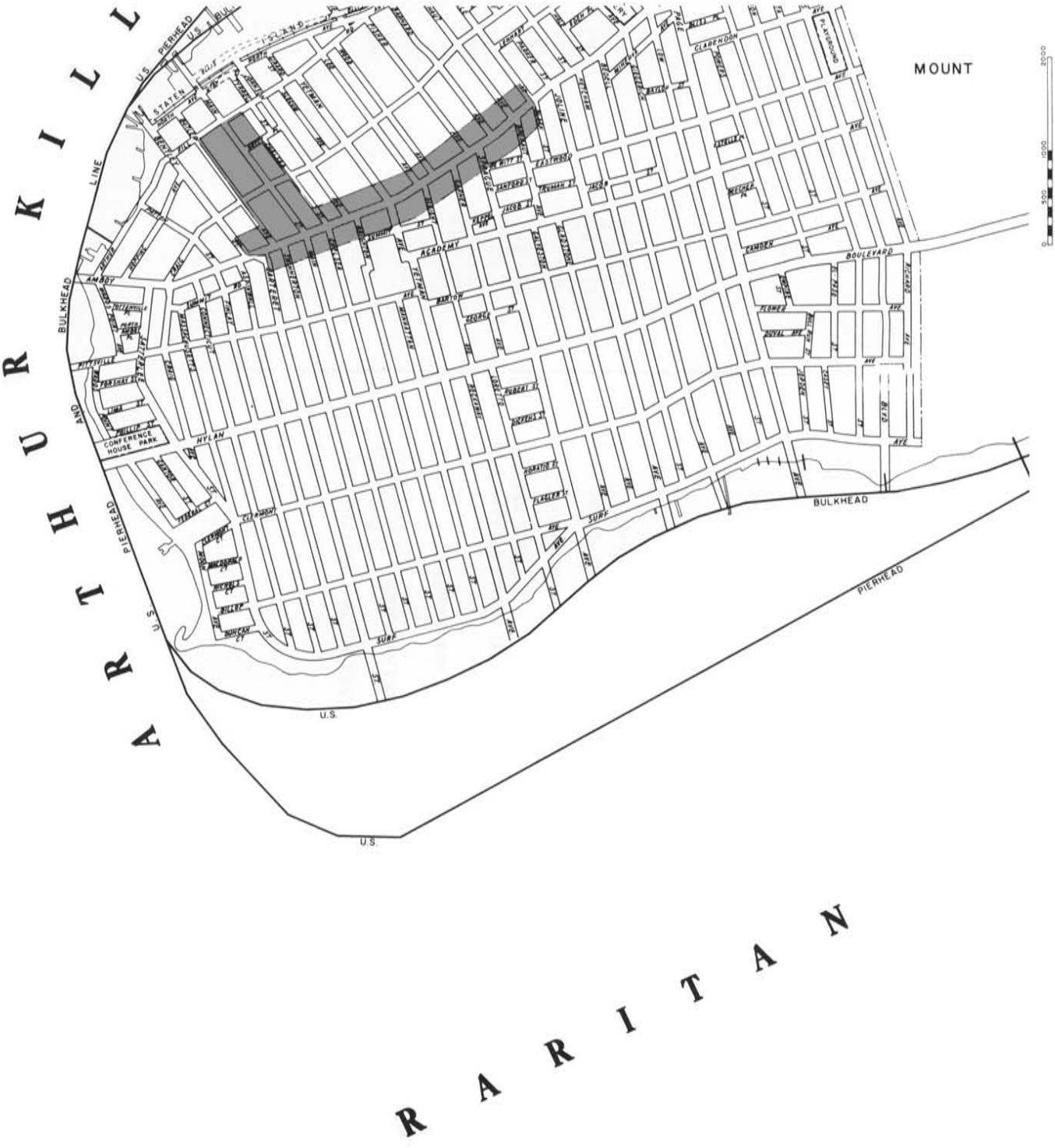
[2] **BOUNDARY LINES HAVE BEEN ESTABLISHED:**

a. On centerlines of mapped streets; or

b. 200′-0″ distant from, and parallel to, street lot lines

Index Map





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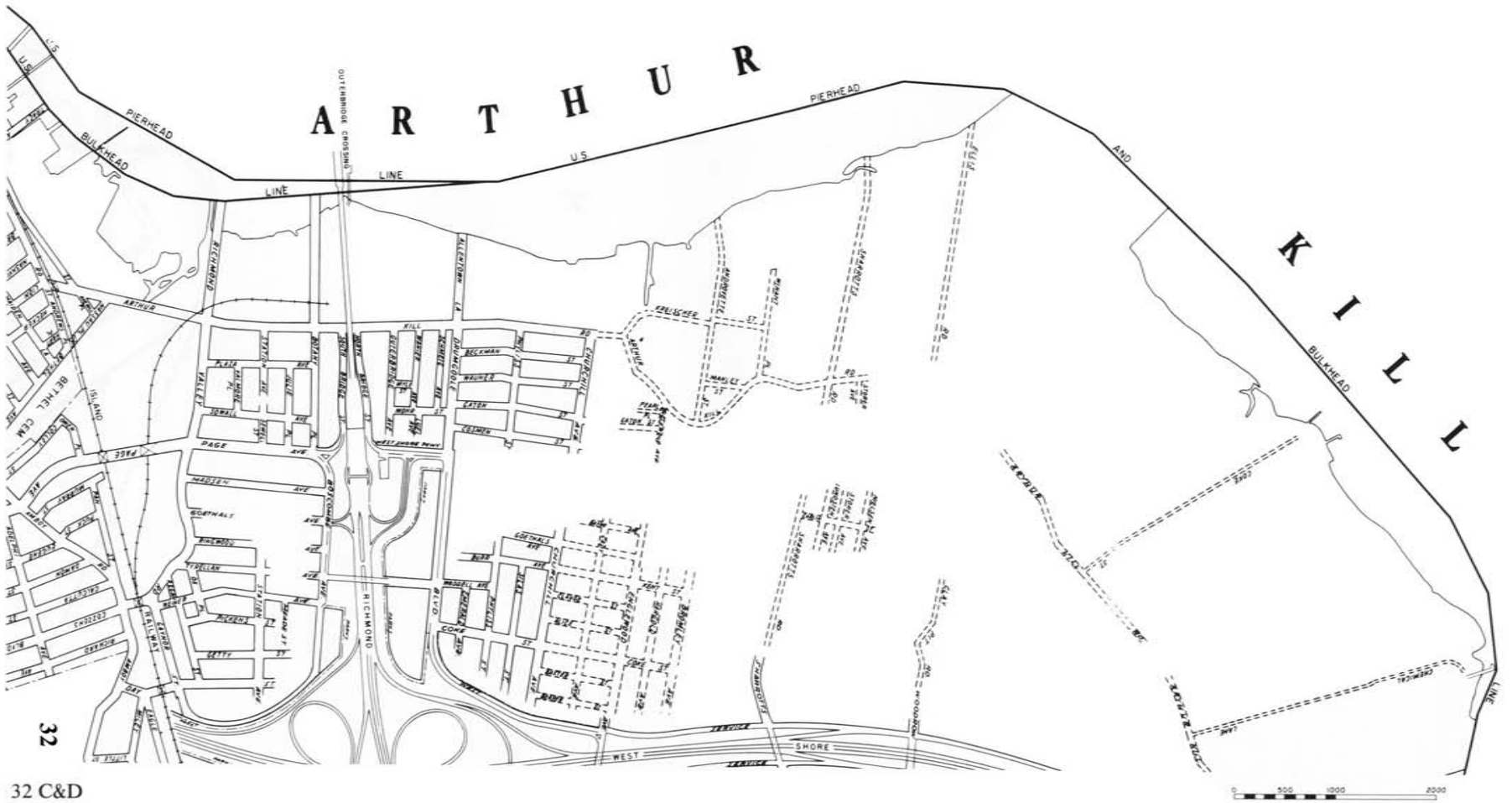

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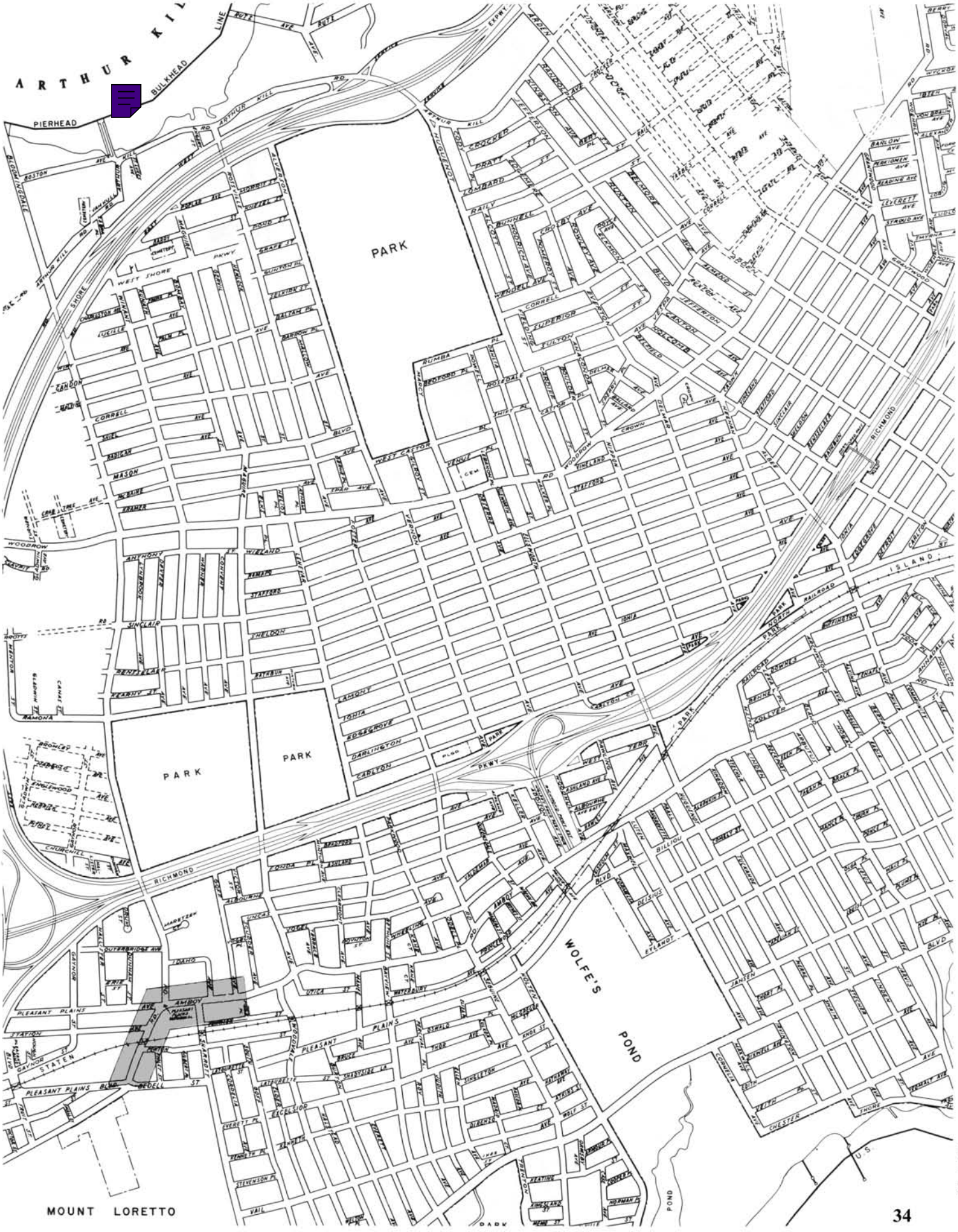

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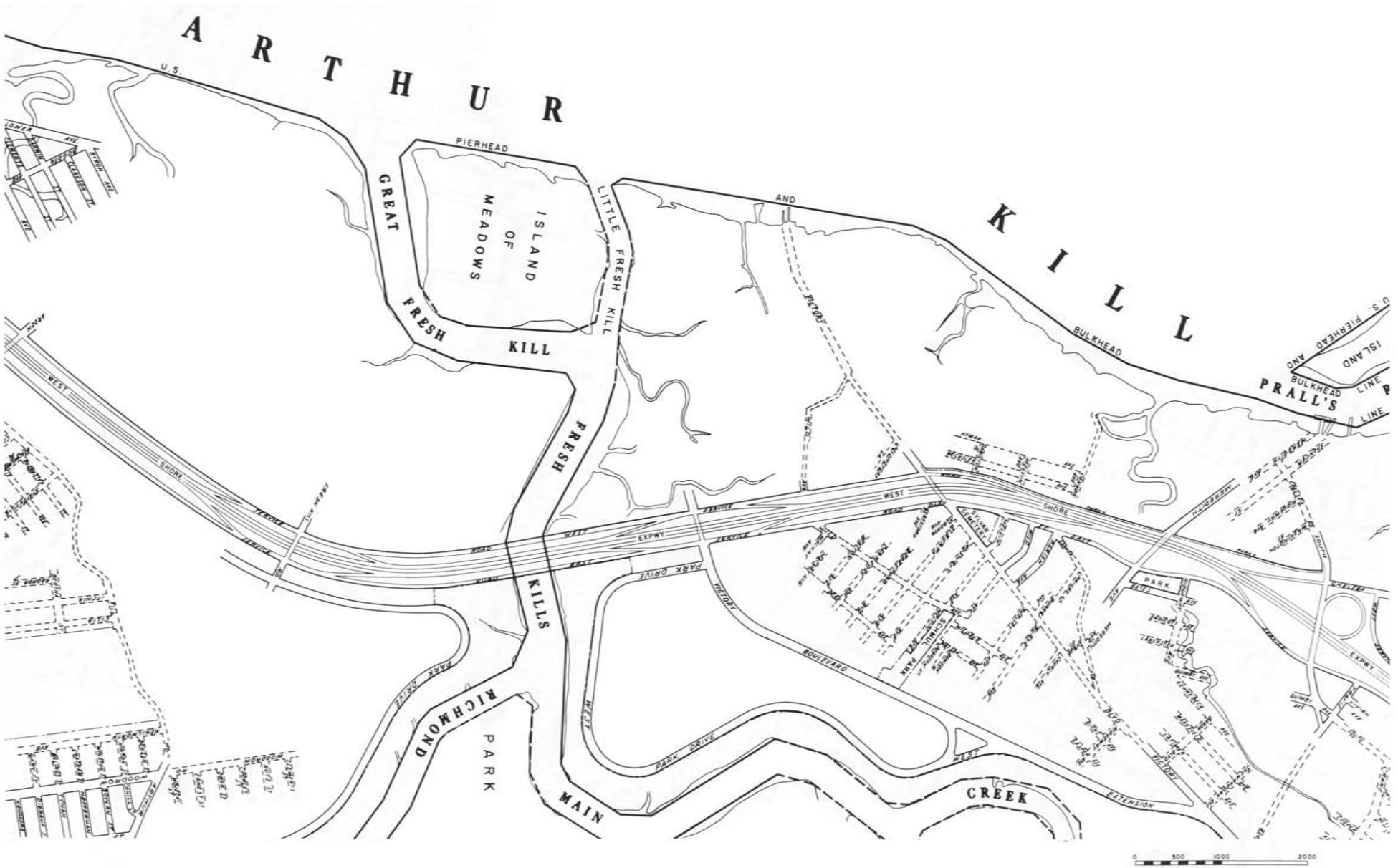
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U.S.
PIERHEAD
GREAT FRESH KILL
ISLAND OF MEADOWS
LITTLE FRESH KILL
AND
BULKHEAD
PRALL'S
WEST SHORE EXPWY
PARK DRIVE
VICTORY BOULEVARD
RICHMOND PARK
MAIN KILLS
WEST CREEK
EXTENSION
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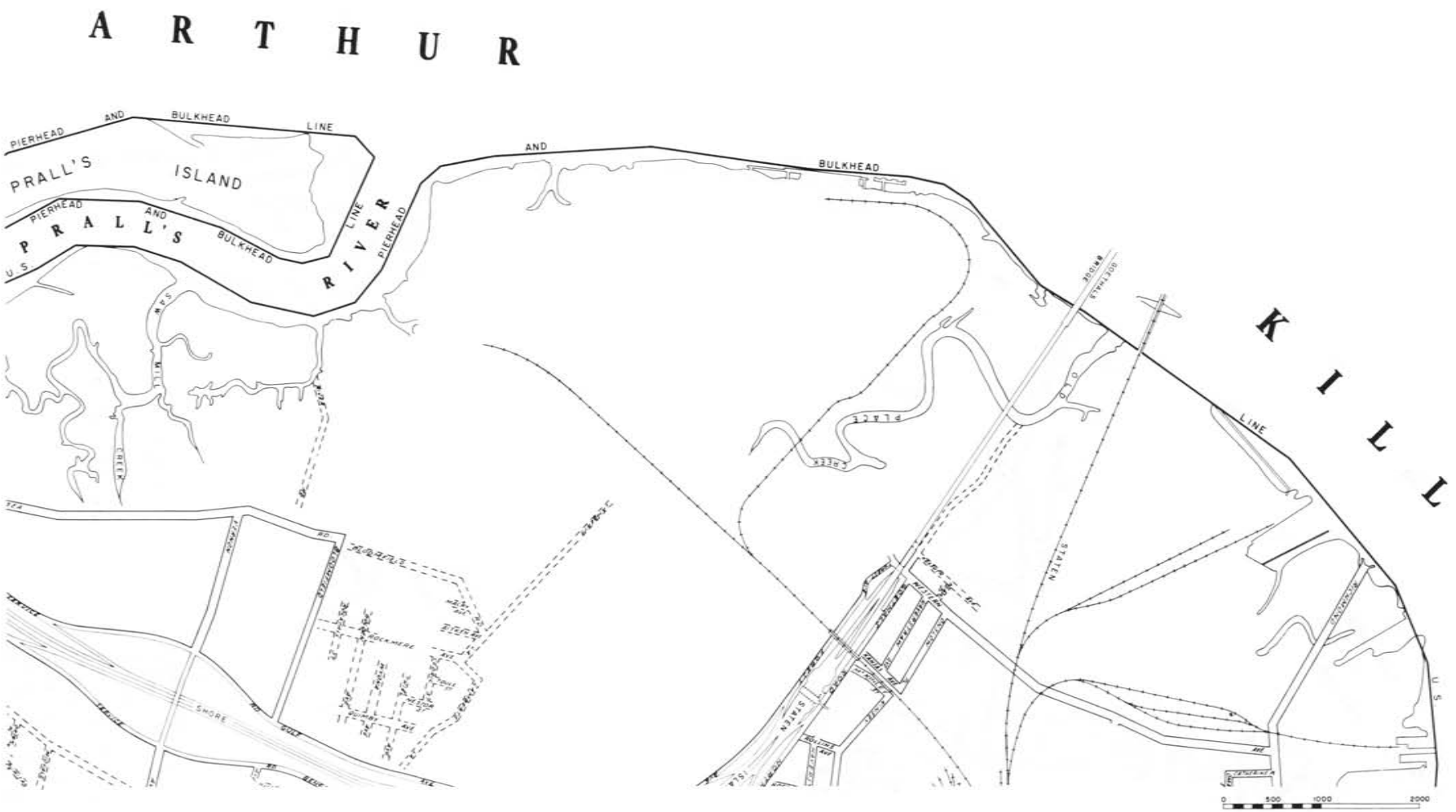
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PRALL'S ISLAND
PIERHEAD AND BULKHEAD LINE
P R A L L ' S
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R I V E R
PIERHEAD AND BULKHEAD LINE
K I L L
STATEN
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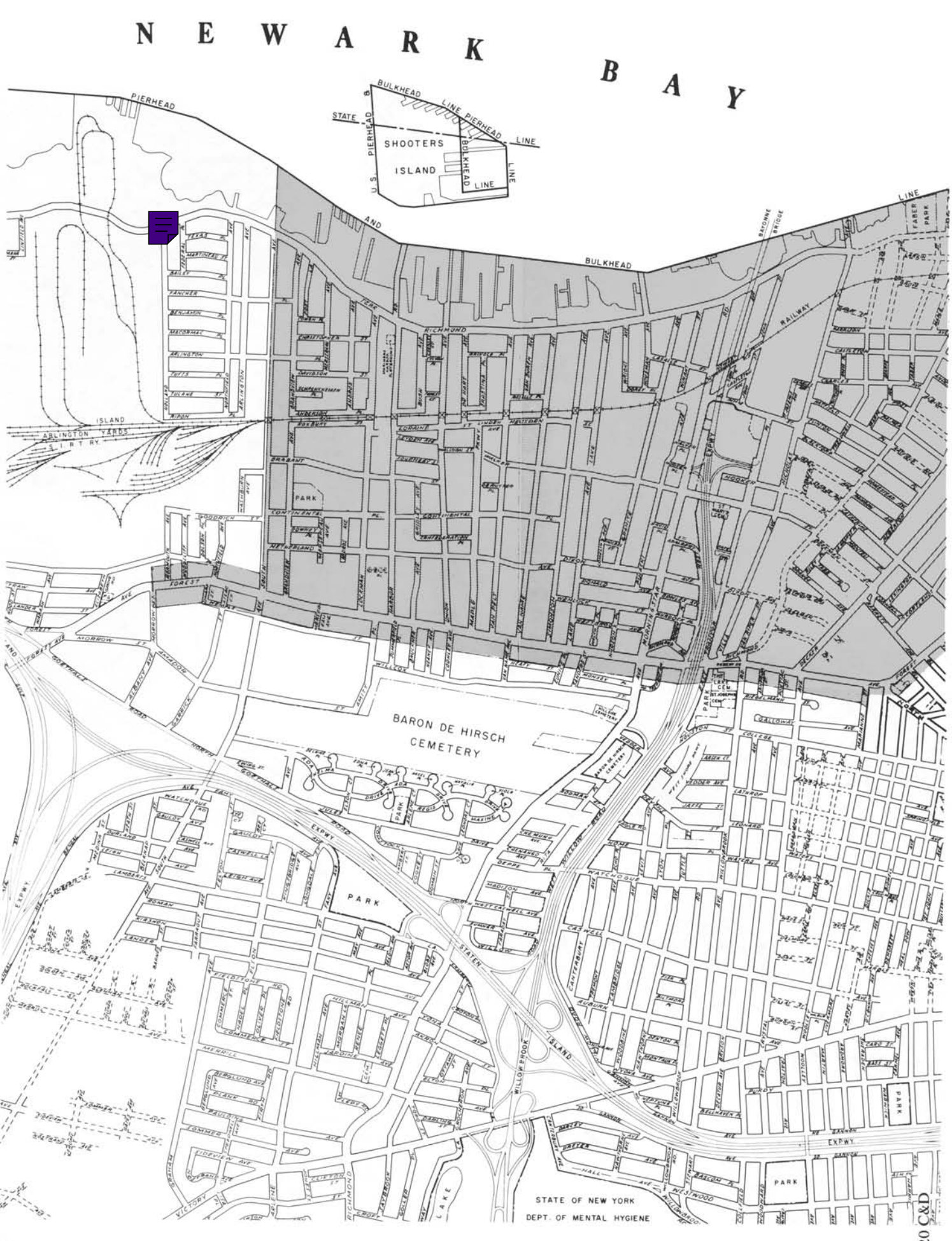
PARK
WILLOWBROOK PARK
STATE OF NEW YORK
DEP'T OF MENTAL HYGIENE
PARK
N.Y. CITY FARM COLONY
SPRINGVILLE CREEK
SEA
PARK
LATOURETTE
CREEK
PARK
MOUNT RICHMOND CEMETERY
UNITED HEBREW CEMETERY
OCEAN VIEW CEMETERY



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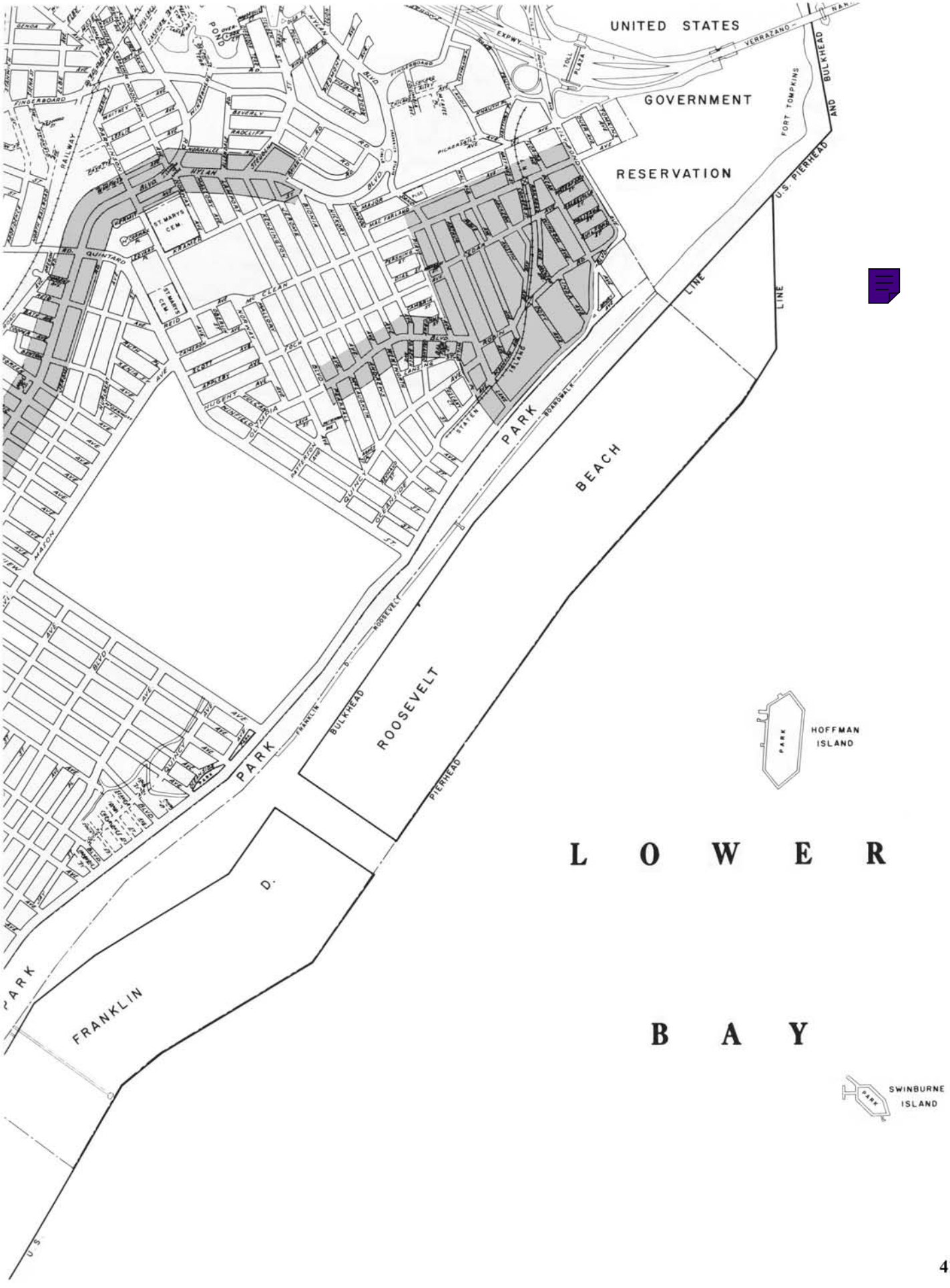

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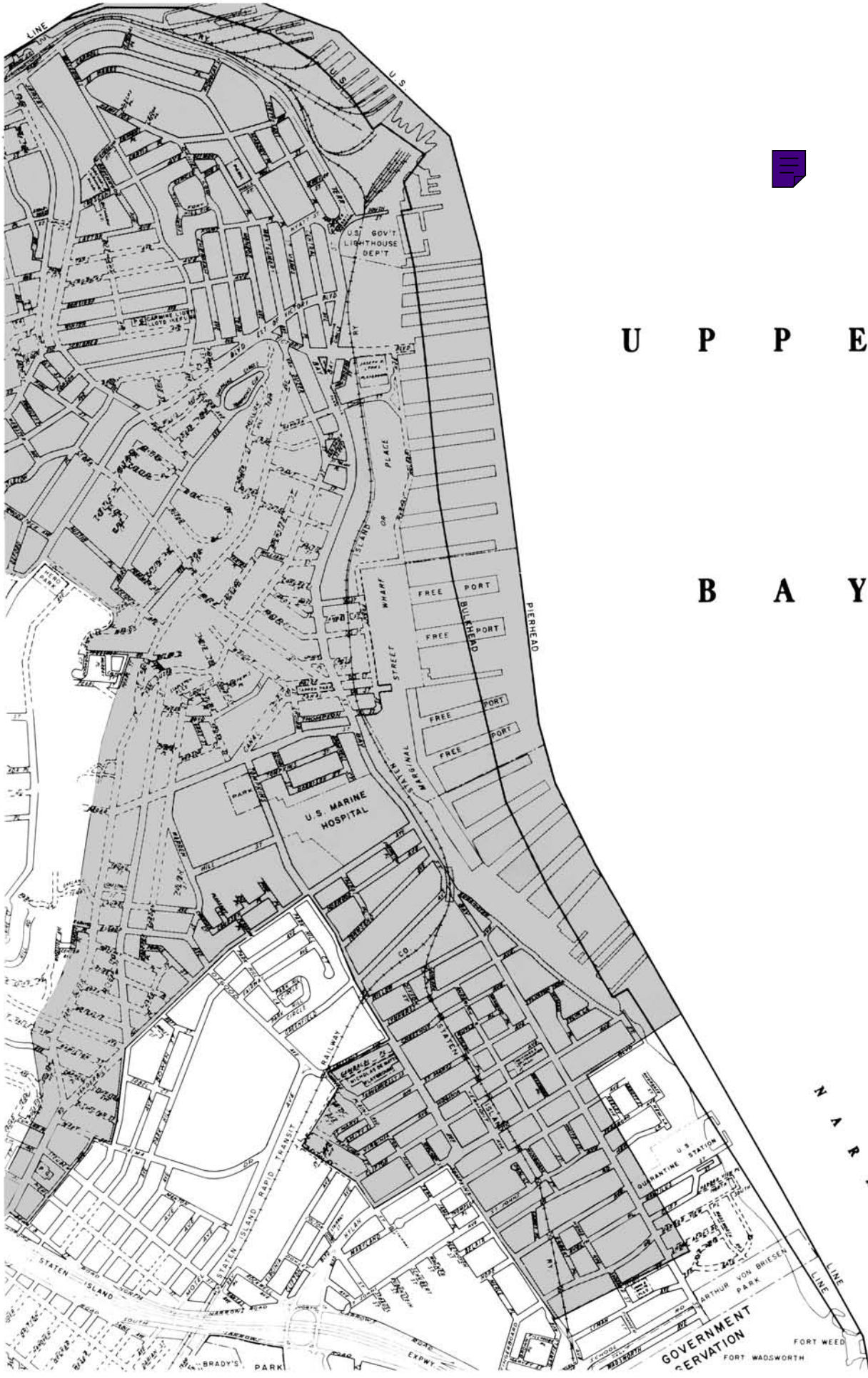

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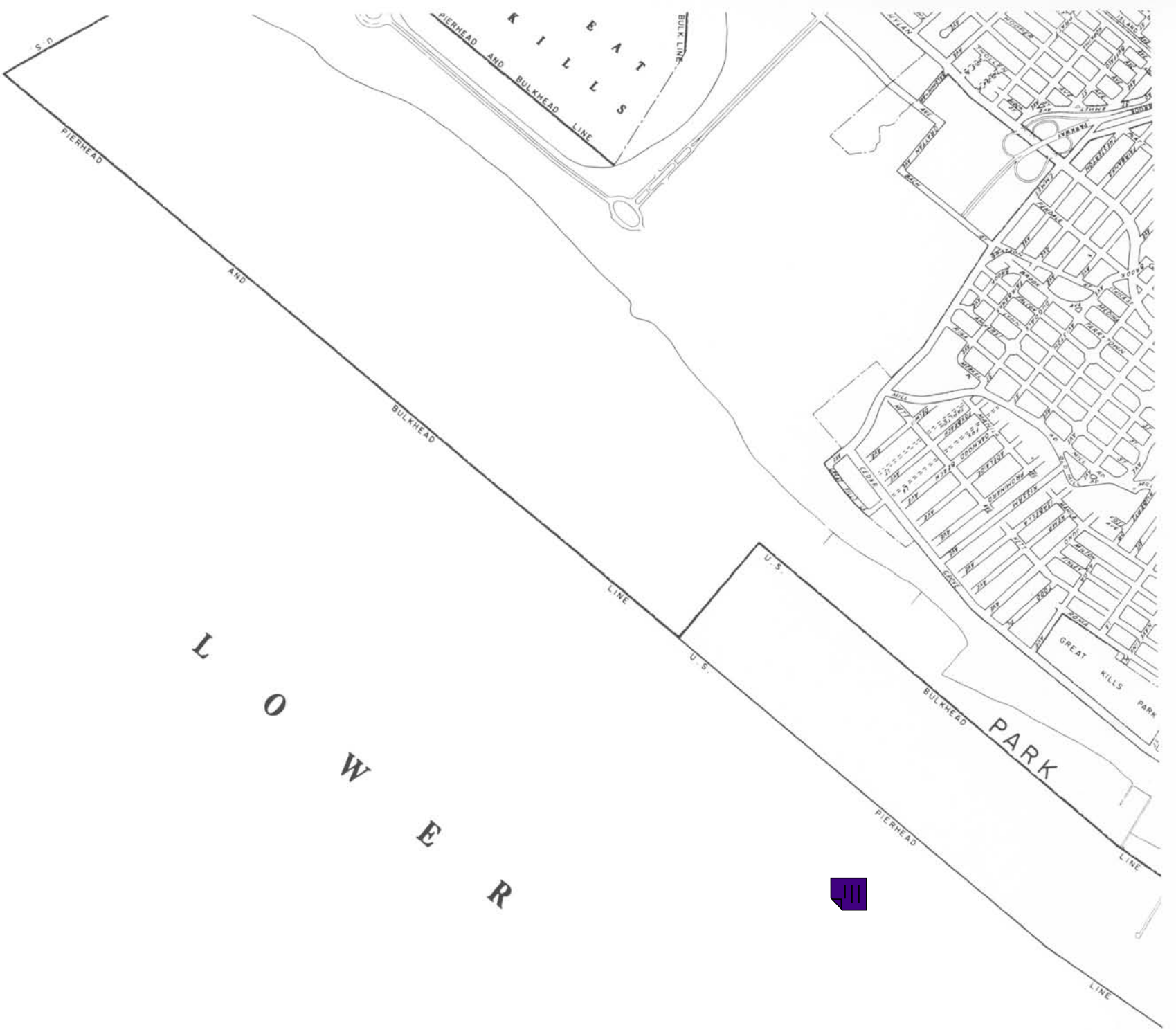
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L O W E R
111
0 500 1000 2000

FIRE DISTRICT MAPS

Borough of Queens

Reference Standard RS4-2

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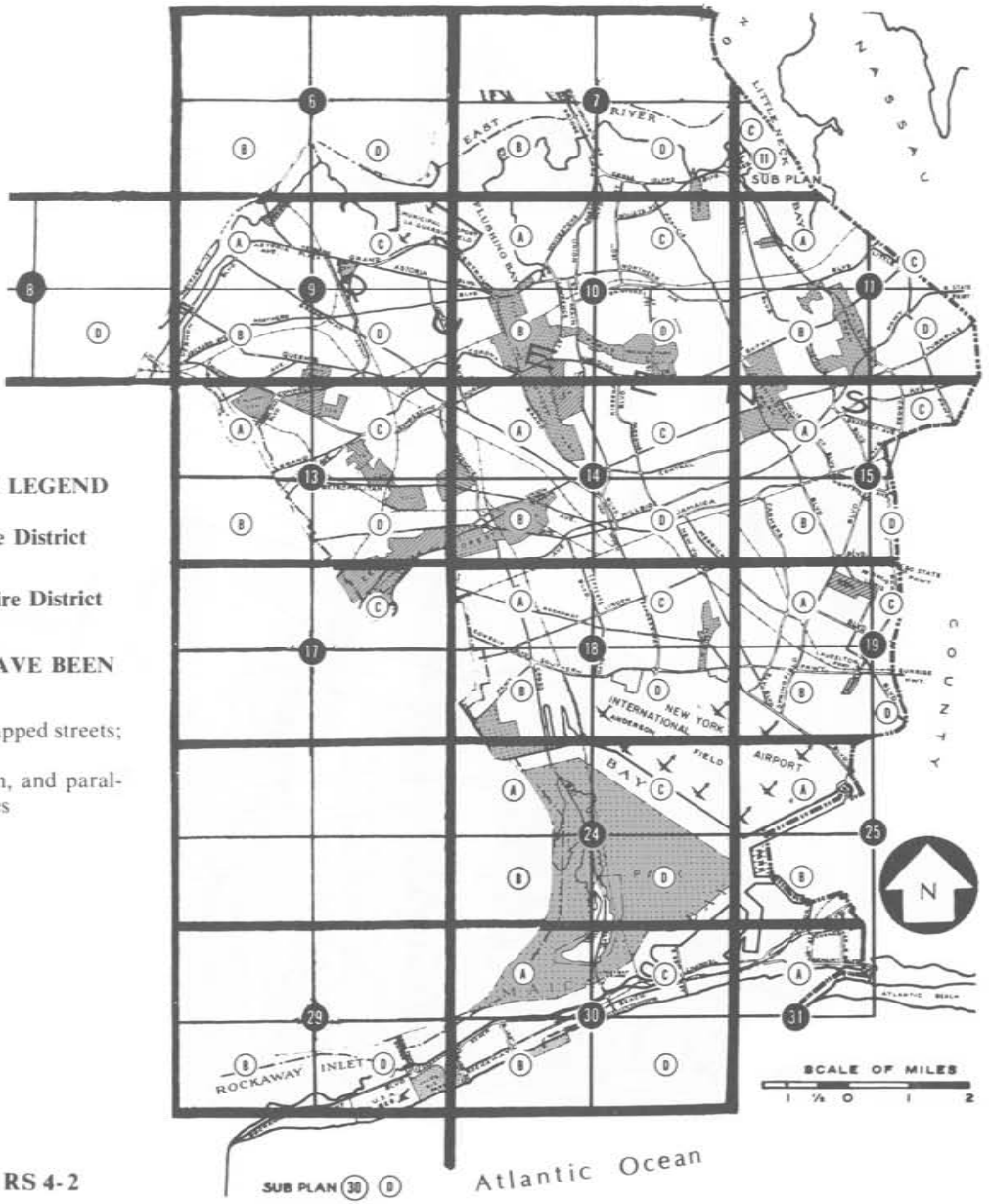
Index Map



NOTES:

[1] **FIRE DISTRICT MAPS LEGEND**

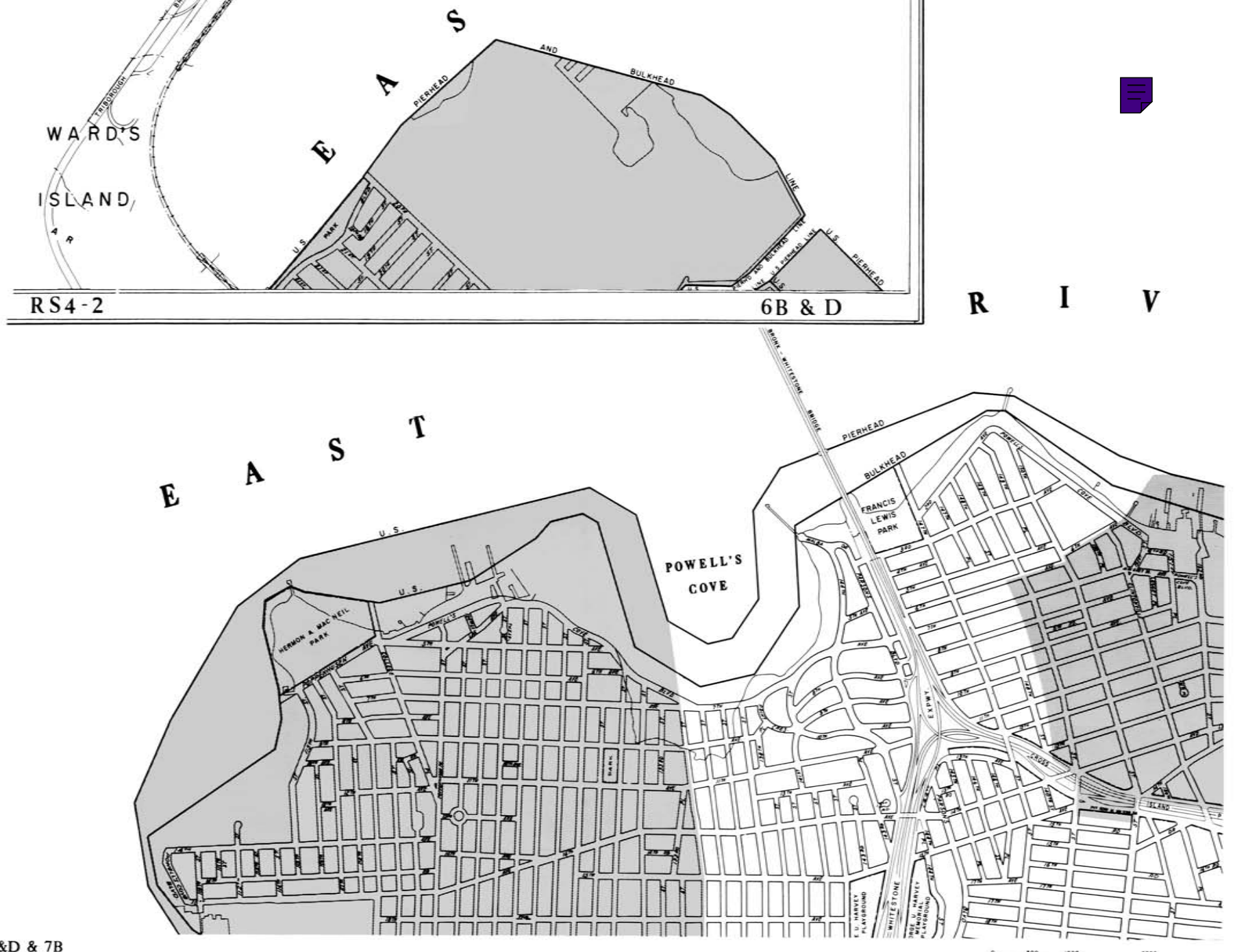
Inside Fire District

Outside Fire District

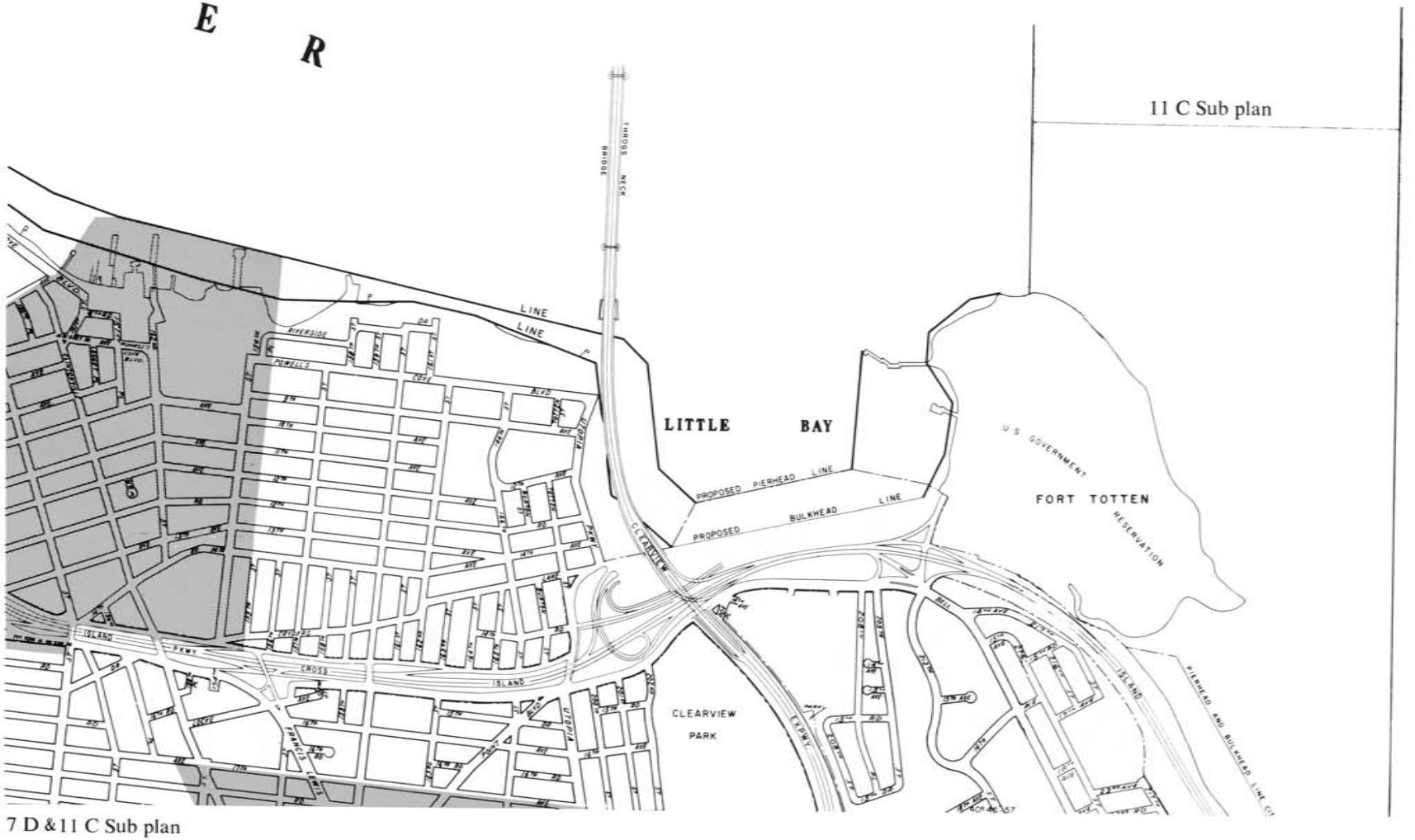
[2] **BOUNDARY LINES HAVE BEEN ESTABLISHED:**

a. On centerlines of mapped streets; or

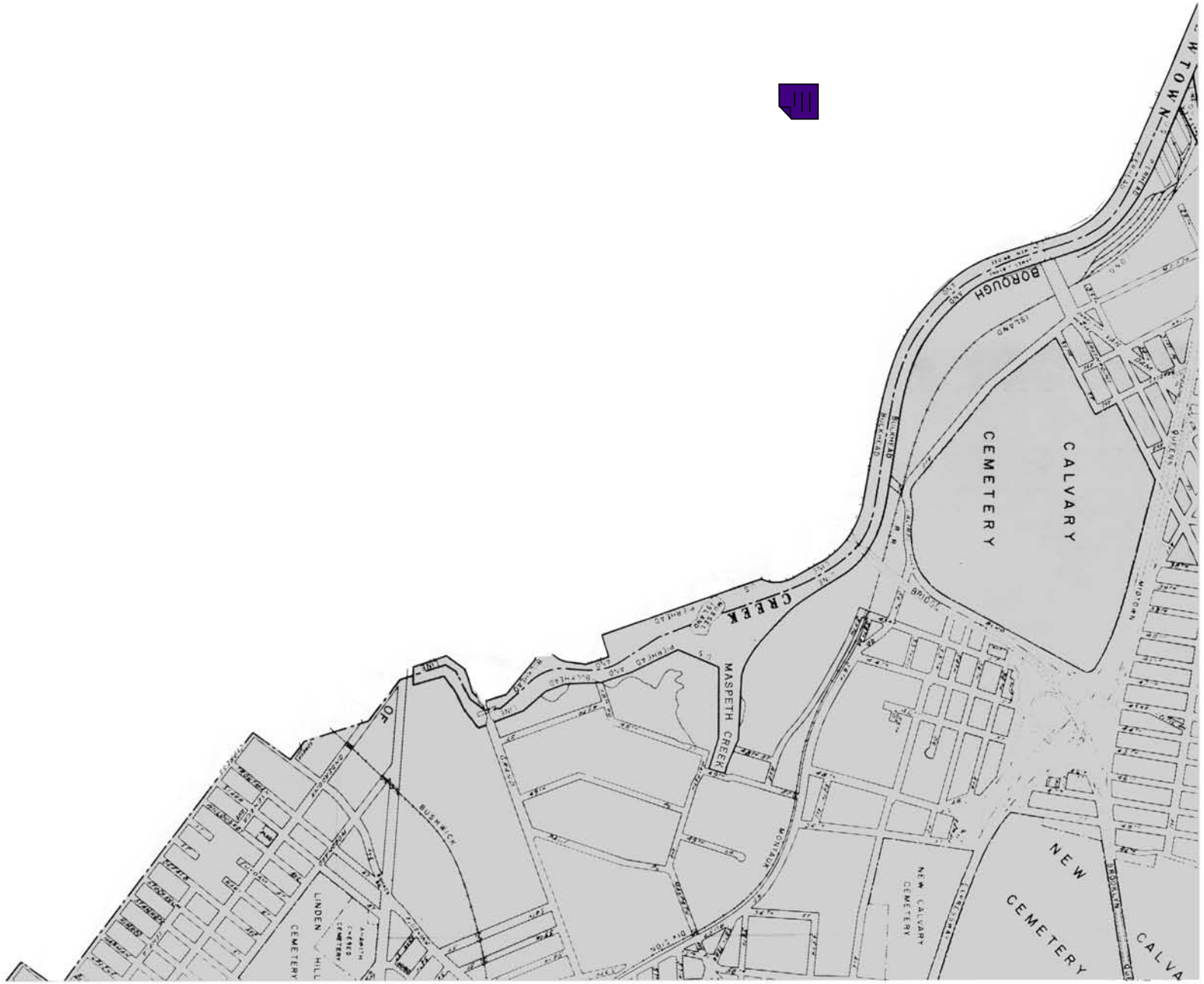
b. 200′-0″ distant from, and parallel to, street lot lines



Queens RS 4-2-1



7 D & 11 C Sub plan



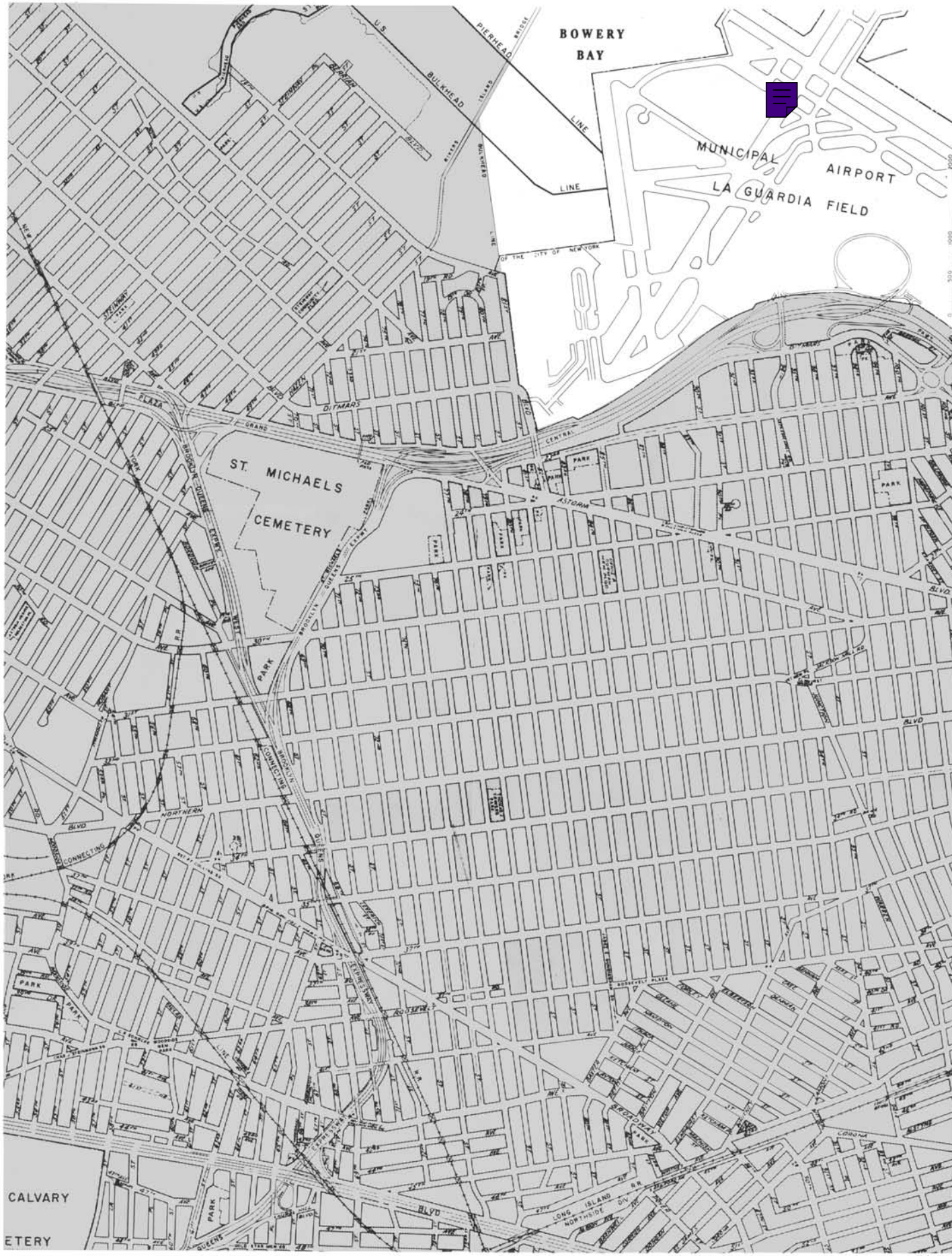
48 13 A&B

Queens RS 4-2-3

EAST RIVER
HELL GATE
EAST RIVER
POT COVE
ASTORIA PARK
HALLETTS COVE
RAINEY PARK
QUEENS BRIDGE PARK
PIERHEAD
BULKHEAD
TRIBOROUGH BRIDGE
SUNNYSIDE YARD
NEWTOWN
RS4-2- 8D
Queens RS 4-2-4
8D, 9 A&B

Queens RS 4-2-5

13 C&D

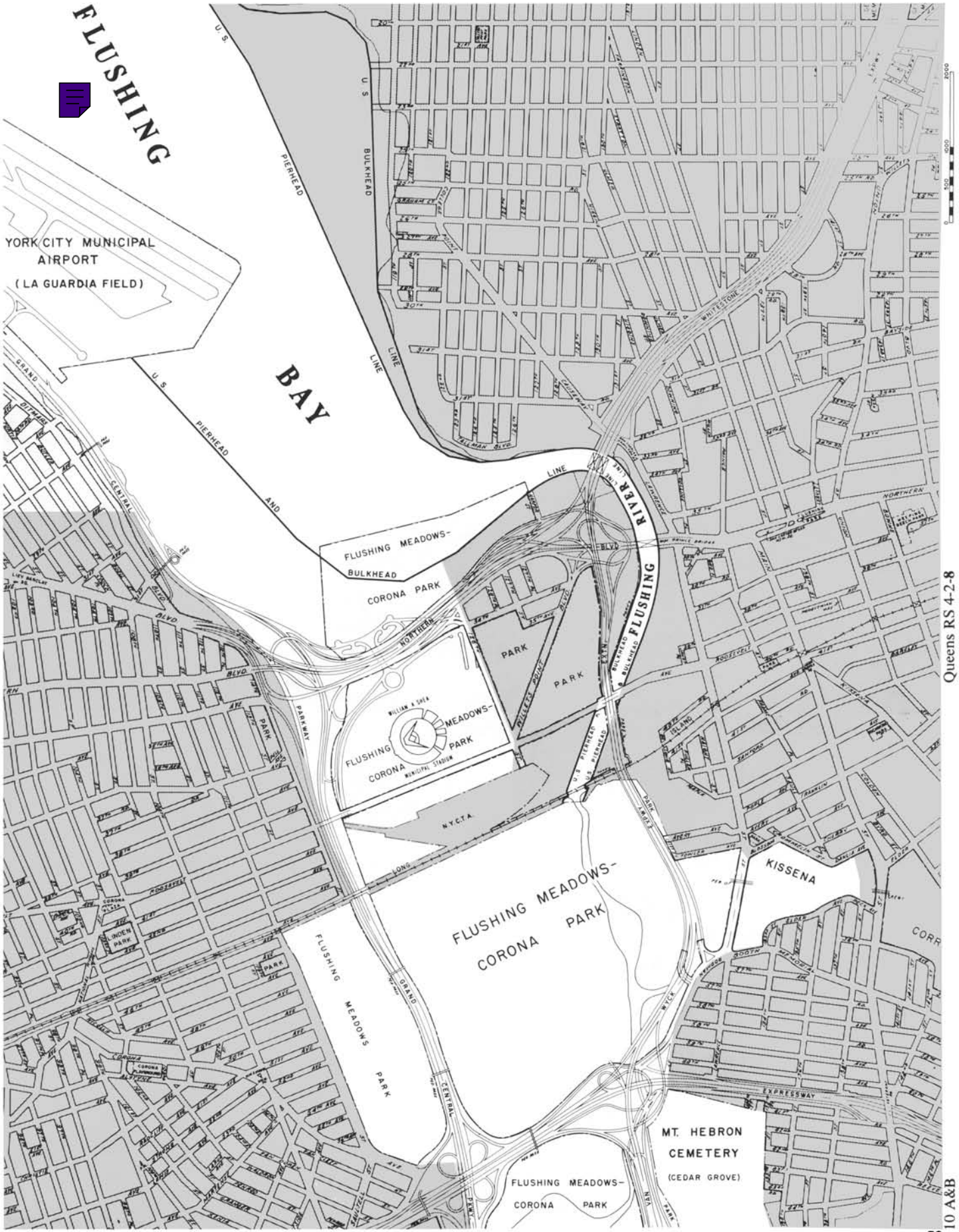


Queens RS 4-2-6

9 C&D

Queens RS 4-2-7

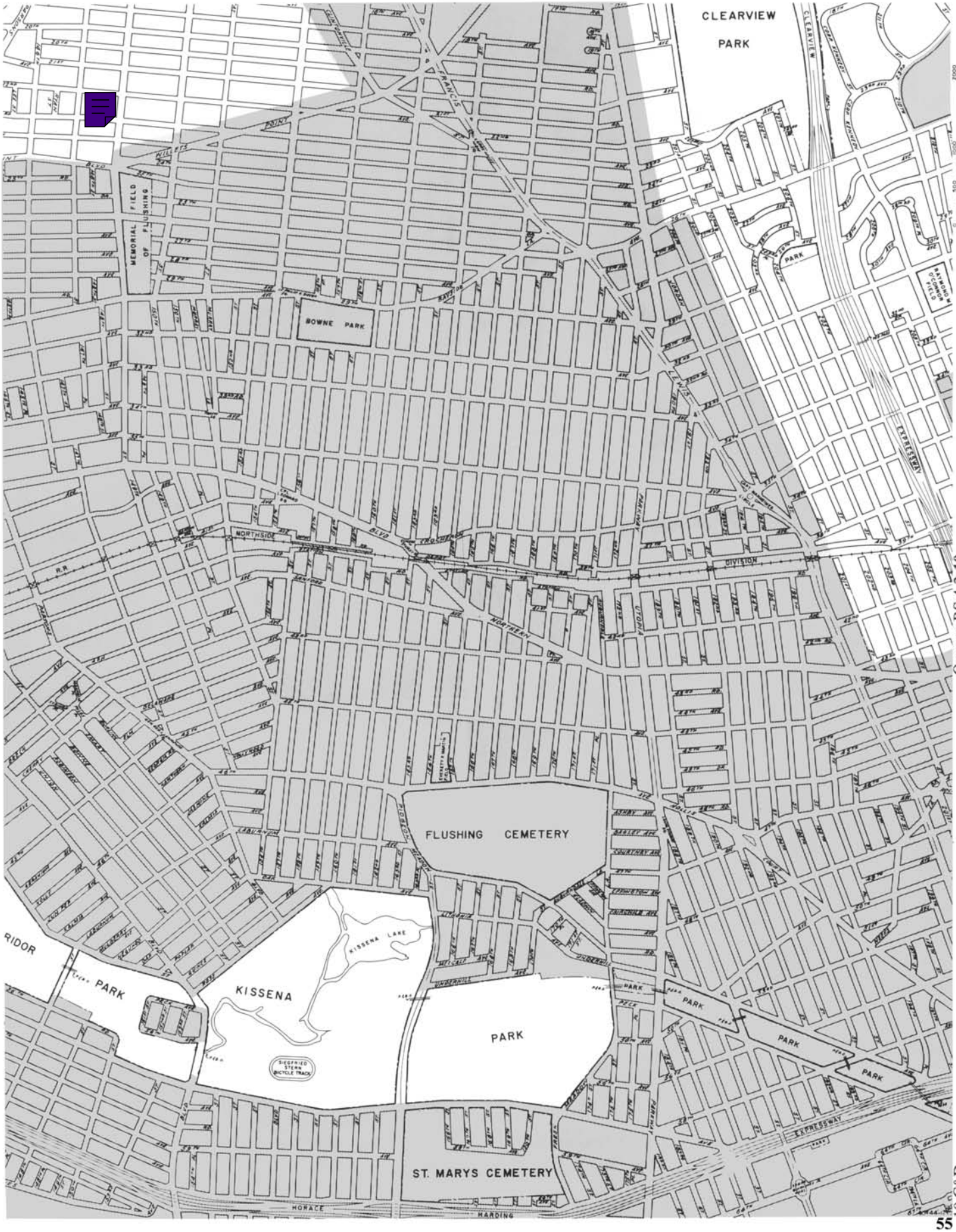
14 A&B



Queens RS 4-2-8

10 A&B

QUEENS COLLEGE
KING PARK
BOULEVARD
CEMETERY
PARK
PARKWAY
MAIN
LIBERTY PARK
SOUTHERN
PARKWAY
TURNPIKE



Queens RS 4-2-10

10 C&D

Queens RS 4-2-11

15 A&B

Queens RS 4-2-12

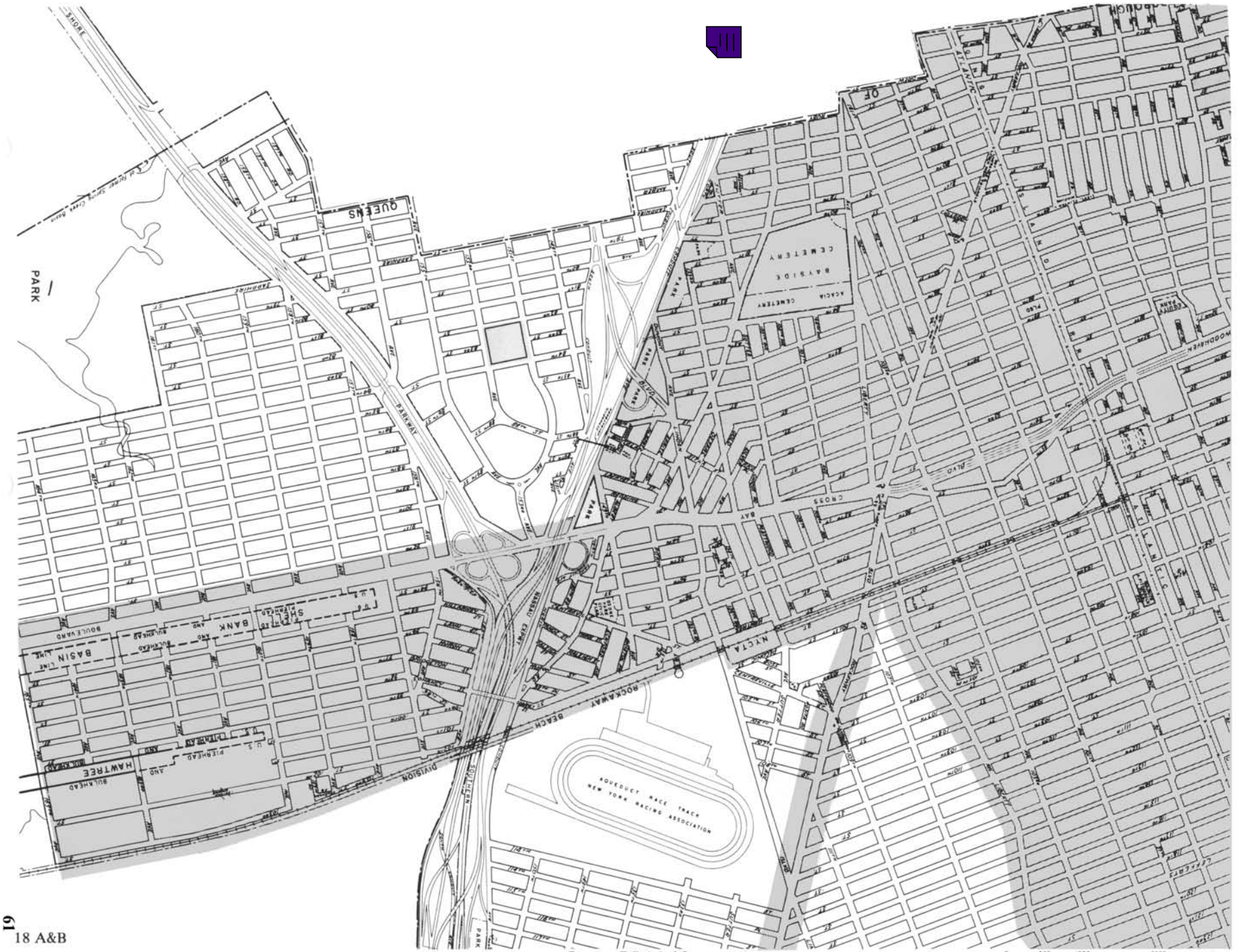
11 A&B

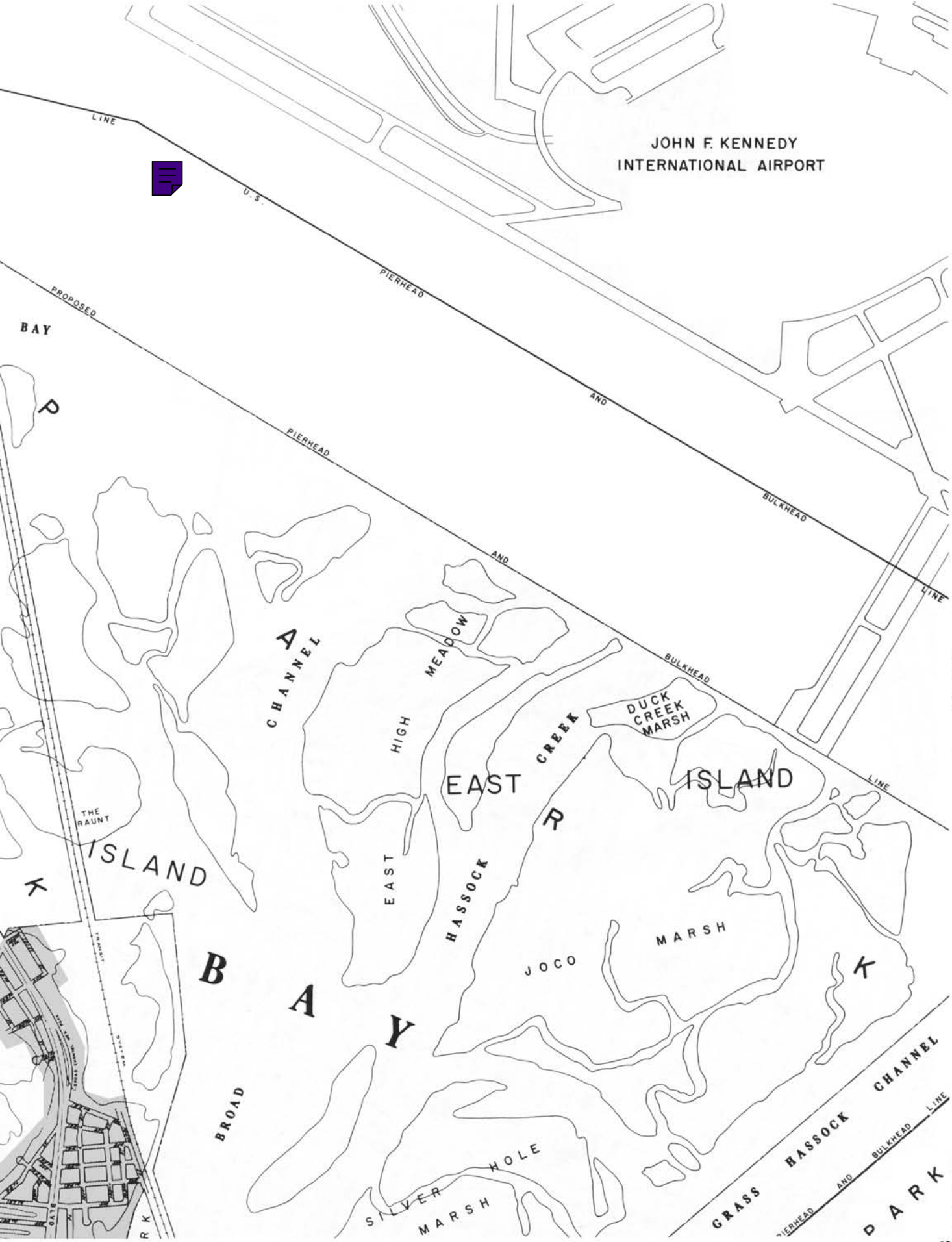
BOUNDARY LINE OF THE CITY OF NEW YORK
CROSS ISLAND
CREEDMOOR STATE HOSPITAL
RS 4 - 2
17 C
BOROUGH OF QUEENS
THE EVERGREENS
HIGHLAND PARK
RIDGEWOOD RESERVOIR
MOUNT JUDAH CEMETERY
CEMETERY
PARKWAY
INTERBOROUGH
0 500 1000 2000

Queens RS 4-2-14

Queens RS 4-2-15

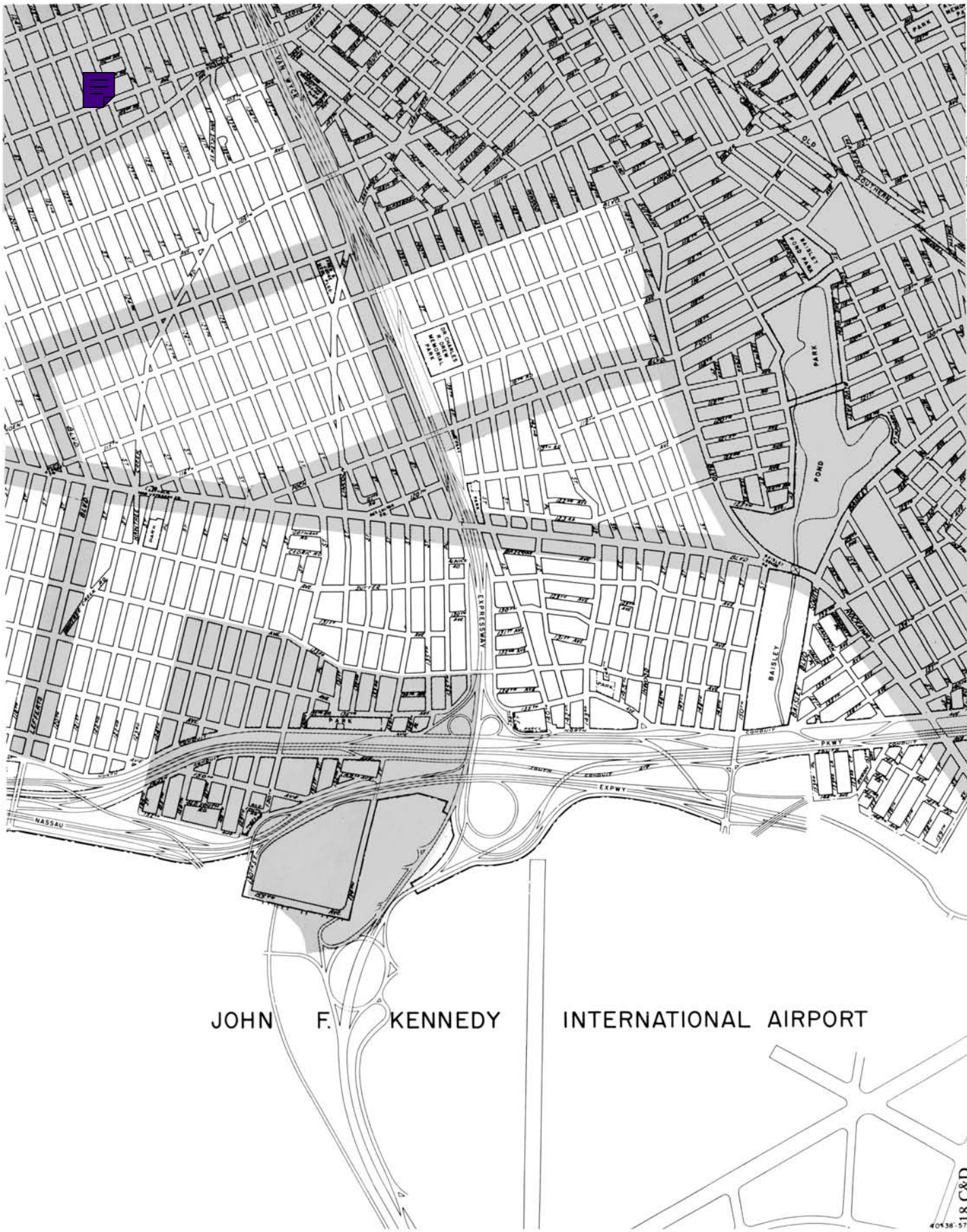
24 A&B


QUEENS
PARK
PARKWAY
BAYSIDE CEMETERY
ACACIA CEMETERY
BAY
CROSS
ROCKAWAY BEACH
DIVISION
AQUEDUCT RACE TRACK
NEW YORK RACING ASSOCIATION
BASIN LINE
BANK
HAWTREE
BOULEVARD
0 500 1000 2000



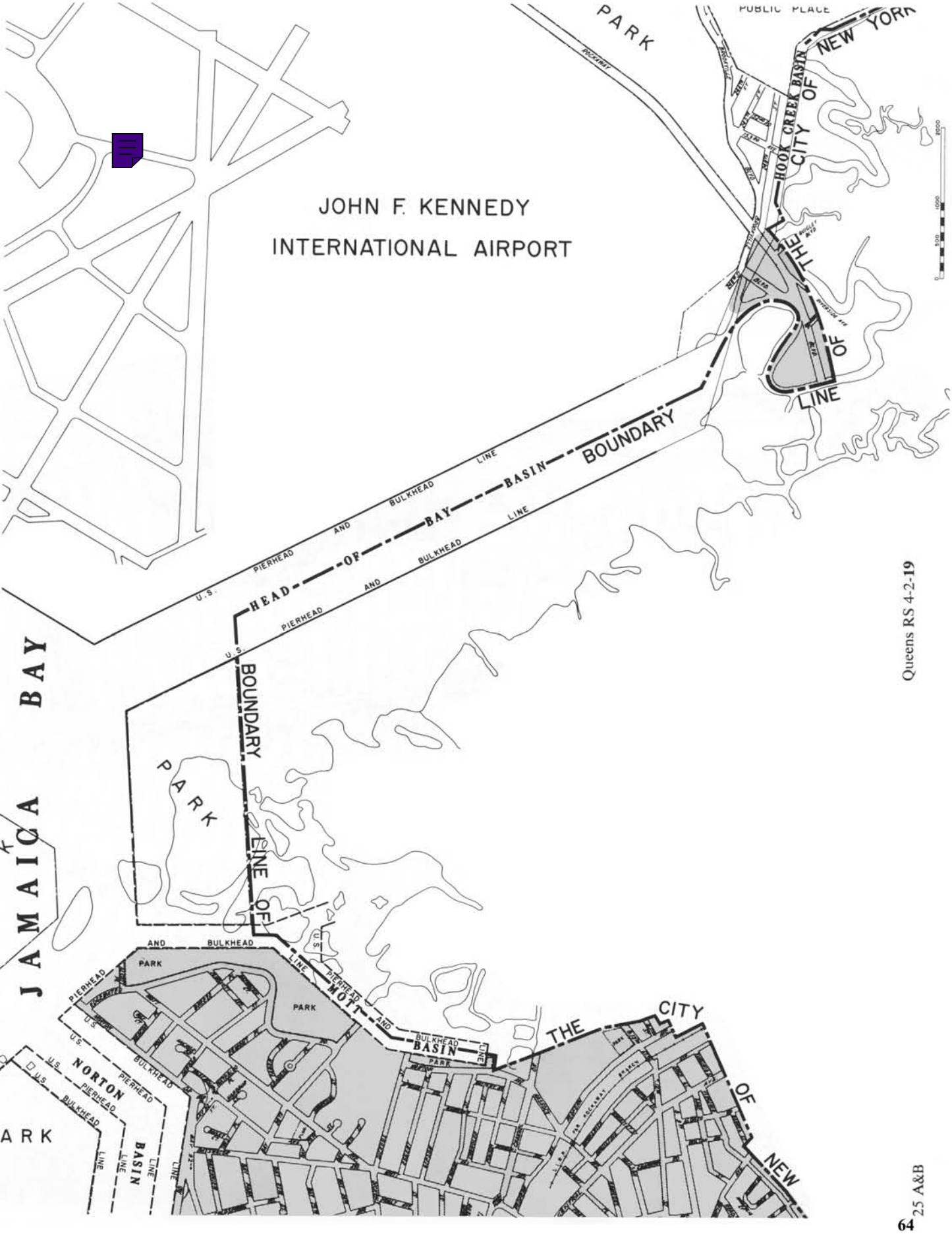
Queens RS 4-3-17

24 C&D



Queens RS 4-2-18

18 C&D

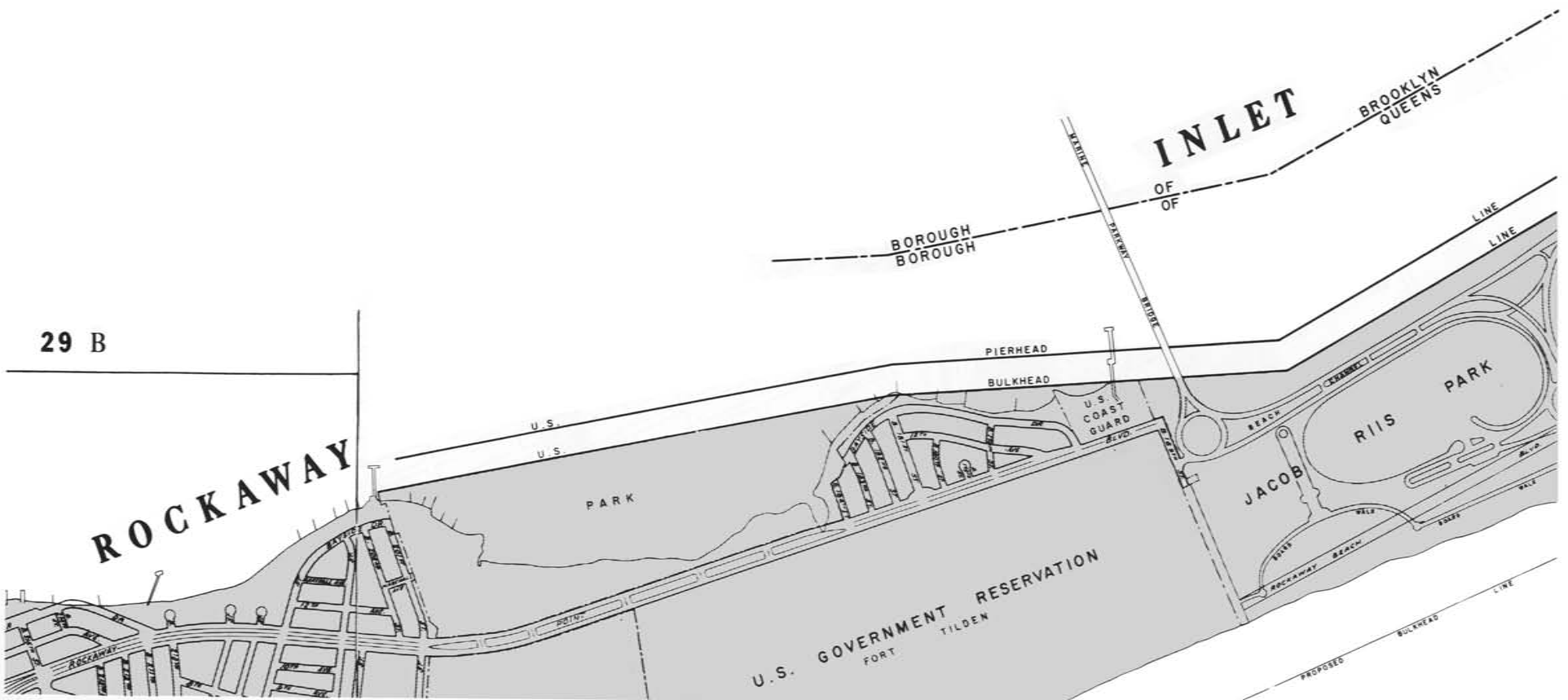


Queens RS 4-2-19

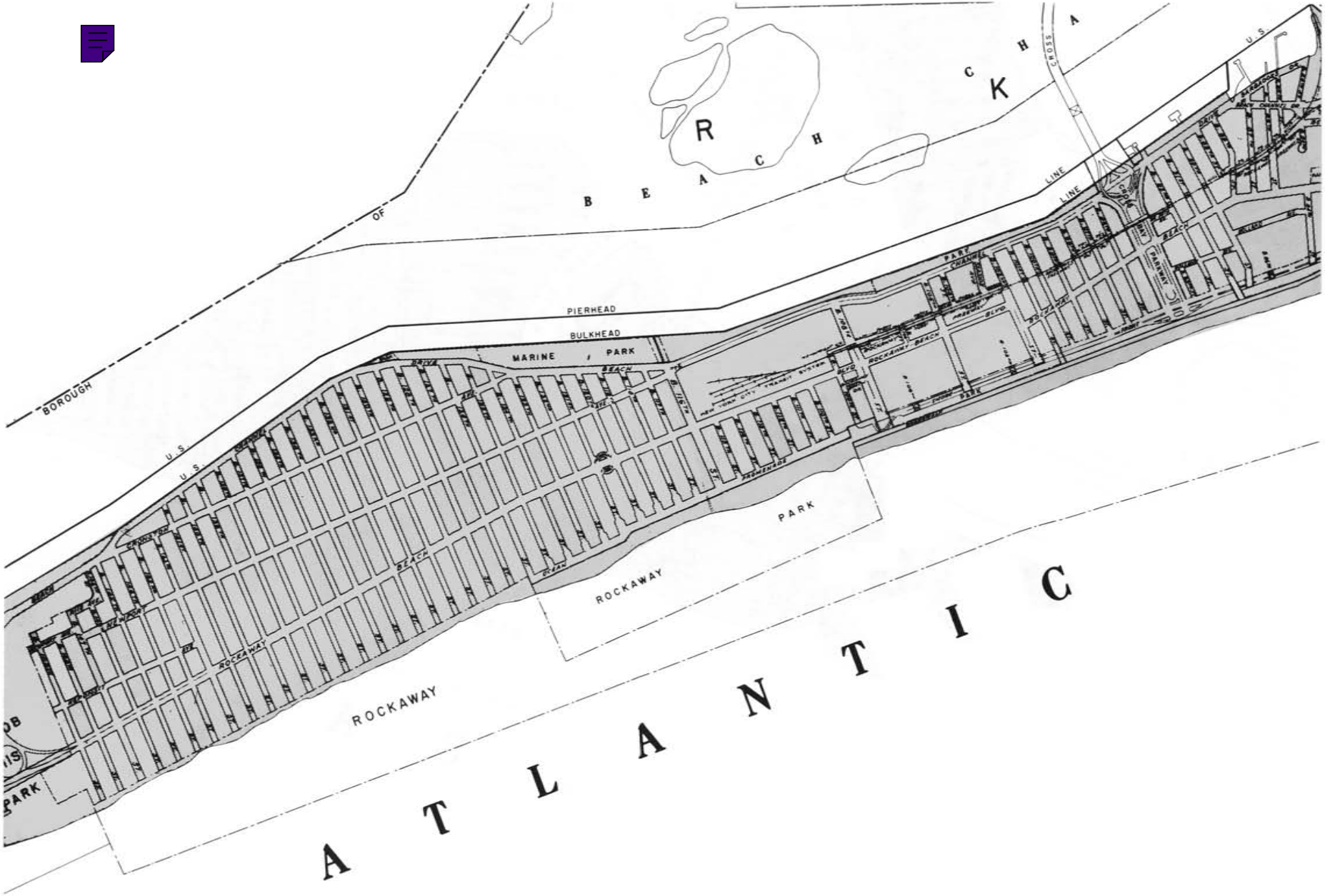
25 A&B

Queens RS 4-2-20

19 A&B

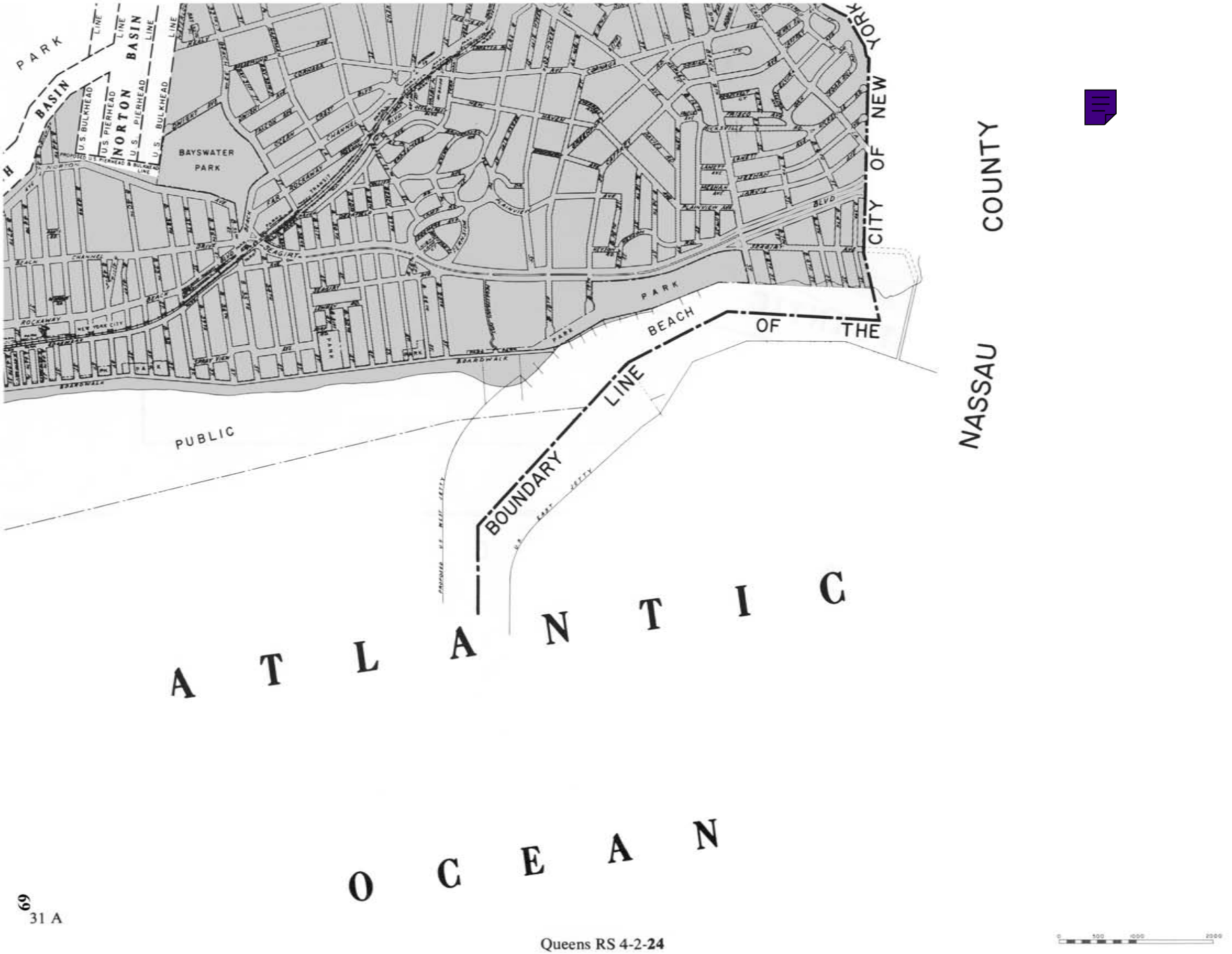


Queens RS 4-2-**21**


B E A C H
R
C K A
CROSS
U.S.
LINE
LINE
BOROUGH
OF
PIERHEAD
BULKHEAD
MARINE
PARK
BEACH
ROCKAWAY
PARK
ROCKAWAY
ROCKAWAY
A T L A N T I C

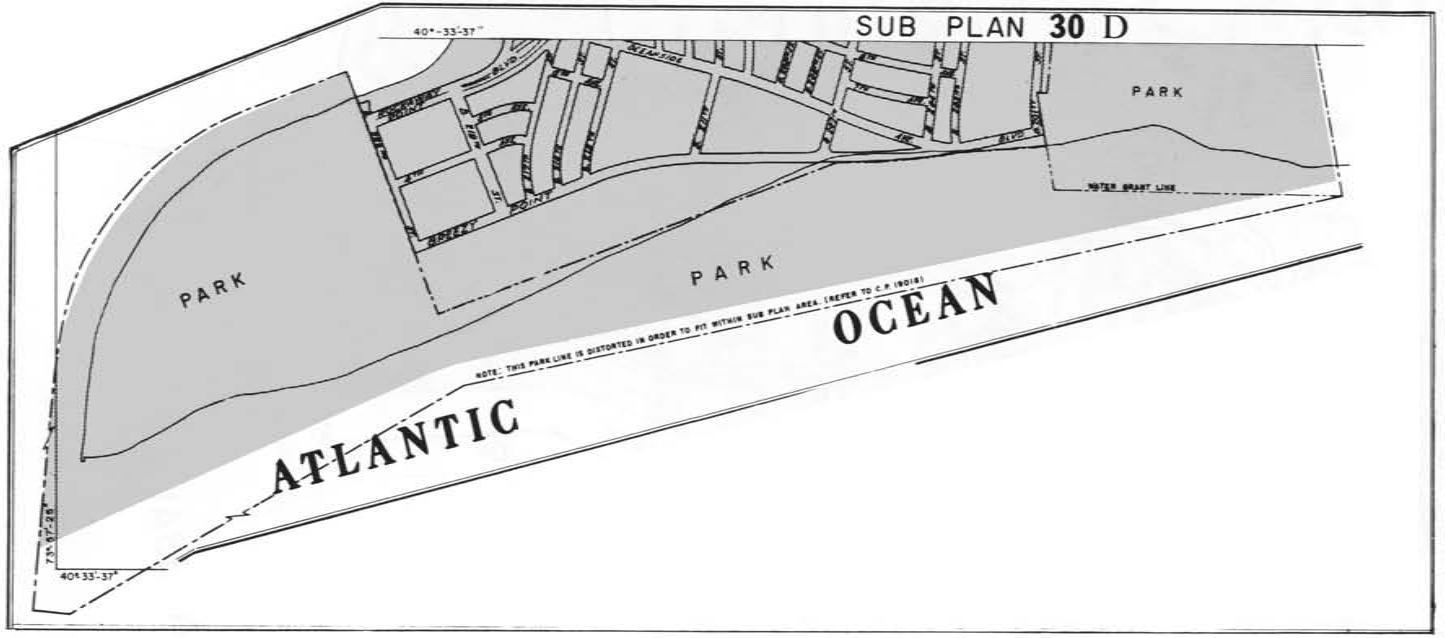
30 C

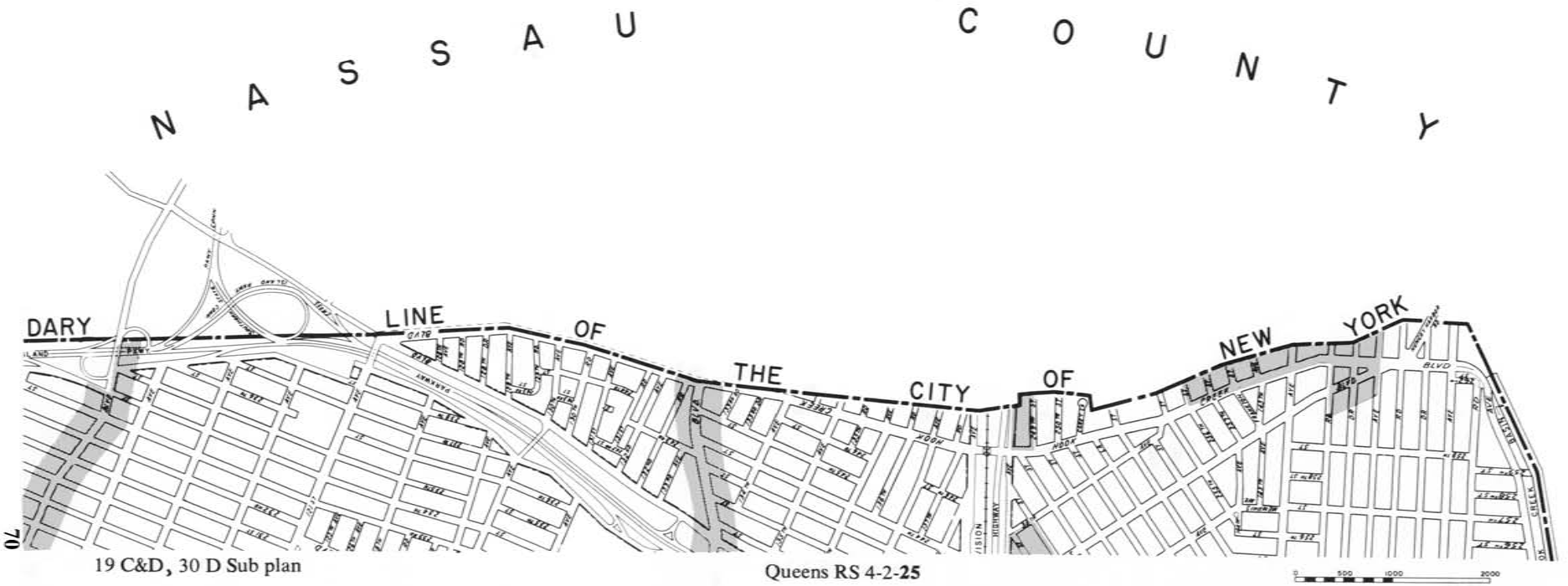
Queens RS 4-2-**23**



69
31 A

Queens RS 4-2-**24**





19 C&D, 30 D Sub plan

Queens RS 4-2-25

REFERENCE STANDARD RS 4-3
ESTABLISHED MARKET AREAS

Borough of Bronx-
Hunt's Point District:
Edgewater Road and Halleck Street between Lafayette Avenue and East Bay Avenue.
Lafayette Avenue between Edgewater Road and the Bronx River.
East Bay Avenue between Halleck Street and the Bronx River.
Hunt's Point Avenue between East Bay Avenue and the Bronx River.
Exterior Street between East 149th Street and East 157th Street.
Cromwell Avenue between East 150th Street and East 153d Street.
East 150th Street between Exterior Street and River Avenue.
Westchester Avenue between St. Ann's Avenue and Bergen Avenue.
Brook Avenue between East 150th Street and East 156th Street.
Bergen Avenue between East 149th Street and East 156th Street.
East 152d Street between Bergen Avenue and Brook Avenue.
East 153d Street between Bergen Avenue and Brook Avenue.

Borough of Brooklyn-
North 6th Street between Berry Street and Wythe Avenue.

Borough of Manhattan-
Fulton Market District:
John Street to Fulton Street between South Street and Front Street.
Fulton Street to Dover Street between South Street and Water Street.
South Street and Front Street between John Street and Dover Street.
Water Street between Fulton Street and Dover Street.
Gansevoort Market District:
Horatio Street to West 14th Street between West Street and 9th Avenue.
West Street, Washington Street, Greenwich Street, 9th Avenue and 10th Avenue between Horatio Street and West 14th Street.
West 16th Street, north side, and West 17th Street, south side, between 10th Avenue and 11th Avenue.
West 24th Street to West 26th Street, south side, between 11th Avenue and 12th Avenue.
West 27th Street, north side, to West 28th Street between 11th Avenue and 12th Avenue.
12th Avenue and St. Claire Place between 125th Street and 132d Street.
12th Avenue, west side, between 132d Street and 133d Street.

Borough of Queens-
95th Avenue, north side, between Sutphin Boulevard and 148th Street.

Borough of Richmond-
None.

* REFERENCE STANDARD RS 4-4
FLOOD INSURANCE RATE MAP

The areas of special flood hazard are identified and defined on the following documents prepared by the Federal Emergency Management Agency:

(1) Flood Insurance Rate Map (multiple panels) Index No. 360497 0001-0131, whose effective date is May 21, 2001.

(2) A scientific and engineering report entitled "Flood Insurance Study, City of New York, New York, Bronx, Queens, New York, Kings, and Richmond Counties" dated May 21, 2001.

(3) Flood Boundary and Floodway Map (multiple panels) Index No. 360497 0001-0131, whose effective date is May 21, 2001.

(4) Letter of Map Revision effective July 3, 2002, FEMA case # 01-02-045P, revising FIRM panel 0149.

The Flood Insurance Study and/or maps are on file at: The Department of City Planning, Waterfront Division, 22 Reade Street, New York, New York.
The maps for Staten Island are on file at: The Office of the Borough President, Topographical Bureau, Staten Island Borough Hall, and the Borough Office of the Department of Buildings, Staten Island Borough Hall.

DOB 8-11-02; 5-21-01; 9-24-00; 8-21-99; 8-4-94; Local Law 33-1988; 58-1983; 13-1975; 587-76 BCR.

*** REFERENCE STANDARD RS 4-5
FLOOD PROOFING NON-RESIDENTIAL STRUCTURES AND COASTAL CONSTRUCTION MANUAL

FEMA 55/February 1986-Design and Construction Manual for Residential Buildings in Coastal High Hazard Areas (Coastal construction manual).

FEMA 85/September 1985-Manufactured home installation in flood hazard areas.

FEMA 102/May 1986-Floodproofing non-residential structures.

******Local Law 33-1988; 58-1983; 13-1975; 587-76 BCR***

** REFERENCE STANDARD RS 4-6
FACILITIES FOR PEOPLE HAVING PHYSICAL DISABILITIES

*****Amended, Dated 11/19/91; Local Law 58-1987; 886-89 BCR***

ANSI A117.1-1986, as modified.-American national standard for buildings and facilities providing accessibility and usability for physically handicapped people.

Modifications.-The provisions of ANSI A117.1-1986 shall be subject to the following modifications:

Figure 29(b) Sidewall

Delete 42 min/1065 minimum dimension of sidewall grab bar.

Add 15 min/380.

Figure 47(a) clear floor space for adaptable bathrooms.

Delete 36 min/915 and 18 min/455 at the water closets.

Add 33 min/838 and 16 1/2 min/419.

Figure 48 Location of grab bars and controls of adaptable bathtubs.

Delete 15 max/380 at the control area.

4.5.2 is amended to read as follows:

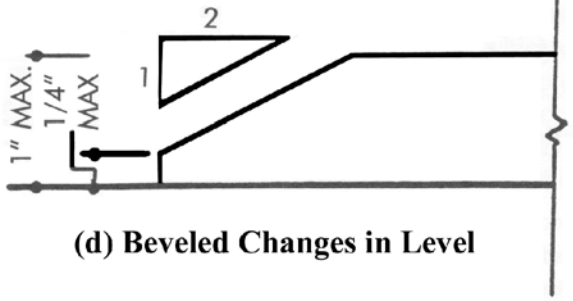
4.5.2 CHANGES IN LEVEL

Changes in level up to 1/4 inch (6 mm) may be vertical and without edge treatment. Changes in level up to 1 inch (25 mm) shall be beveled with a slope no greater than 1:2 (see figure 7 (c) and (d)). A 1-inch rise may be vertical for the first 1/4 inch. Changes in level greater than 1 inch (25 mm) shall be accomplished by means of a ramp that complies with 4.7 or 4.8.

Within a dwelling unit, when the saddle provided is made of a stone or ceramic material that by its nature cannot be brought into compliance with the code requirements for slope, then at the request of a disabled occupant, the owner must bring such a nonconforming saddle into conformance with the code by addition of an adaptable strip as show in diagram 7(e).

Figure 7(d) of such standard is deleted.

Figure 7(d) of such standard shown below is added.



(d) Beveled Changes in Level

Figure 7(e) of such standard shown below is added.

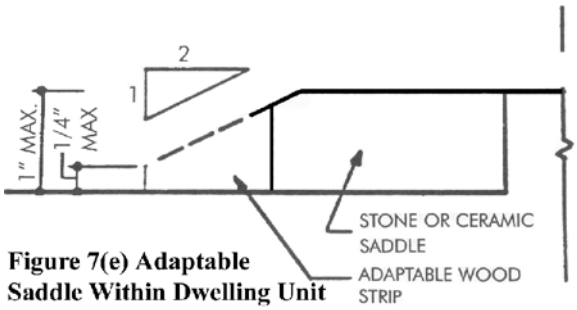


Figure 7(e) Adaptable Saddle Within Dwelling Unit

4.6.2 is amended as follows:

4.6.2 *PARKING FACILITIES. Parking spaces for physically handicapped people shall be at least 96 in. (2440 mm) wide and shall have an adjacent access aisle at least 60 in. (1525 mm) wide (See Fig. 9). Parking access aisles shall be part of the accessible route to the building or facility entrance and shall comply with 4.3. Two accessible parking spaces may share a common access aisle. No obstructions shall reduce the clear width of an accessible circulation route.

In parking facilities containing less than 30 spaces, at least one of the parking spaces required to be accessible to physically handicapped people shall have a minimum vertical clearance of 108 in. (2745 mm), a minimum width of 96 in. (2440 mm) and a minimum access aisle of 96 in. (2440 mm) ("high clearance accessible parking space"). Such a space shall be located on a vehicular access route which maintains the 108 in. (2745 mm) vertical clearance throughout its distance to the high clearance accessible parking space, including at all changes of level.

In parking facilities containing 30 or more spaces, at least two of the parking spaces required to be accessible to people with disabilities shall satisfy the requirements for high-clearance accessible parking spaces. The access aisle for high-clearance accessible parking spaces may be shared by two accessible parking spaces.

Except as otherwise provided in §4.6.2.2 and 4.6.2.3, accessible parking spaces shall be designated as reserved

for physically handicapped people by a permanently posted sign showing the symbol of accessibility (See 4.28.5). Such signs shall not be obstructed by a vehicle parked in the space.

4.6.2.1 MULTIPLE DWELLINGS

In the parking facility of a multiple dwelling, where such a facility is used exclusively on an accessory basis for parking by residents of the multiple dwelling, or employees of the management of the multiple dwelling or of the parking facility, or as provided by §25-412 of the Zoning Resolution, the accessible parking spaces may be leased, rented or assigned to a person without a physical disability on a no longer than month-to-month basis. All leases, rentals, or assignments of such accessible spaces which are not made for the benefit of a person with a disability shall be on written condition that the space shall be relinquished immediately at the end of the term of lease, rental, or assignment to a person who requests of the parking facility's management that such accessible space shall be made available for the benefit of a person with a physical disability whose vehicle bears a special identification permit or license plate. Such a beneficiary shall be a resident or employee of the multiple dwelling. It shall be the responsibility of the Parking Facility Operator to inform the non-disabled user of the parking space that a request for the parking space has been tendered. Signs stating these requirements shall be permanently and prominently posted at each entrance and office of the Parking Facility.

4.6.2.2 ATTENDED PARKING FACILITIES

For the purposes of this Section, the term "attended parking facility" shall mean parking facilities in which vehicles customarily are parked and later returned to their drivers by an attendant employed by the parking facility. Attended parking facilities shall be provided with high-clearance accessible parking facilities as provided in §4.6.2. The remaining accessible parking spaces allocated for the physically handicapped need not be designated by a sign or lines if all of the following conditions are met:

A. The location at which the attendant takes control of the vehicles complies with §4.6.3 (Passenger Loading Zones) of this Reference Standard, except that the minimum vertical clearance shall be 108 in. (2745 mm).

B. At least one parking space allocated for use by a physically handicapped person shall remain available until all the spaces allocated for physically handicapped persons are so used.

C. The attendant shall park and retrieve all vehicles not equipped with special controls entering the facility in which a physically handicapped person is either the driver or a passenger, provided space is available.

D. The attendant shall direct the drivers of vehicles equipped with special controls to parking paces allocated for use by physically handicapped persons. The attendant shall accompany such drivers to and from such space along an accessible route when they enter and exit the facility. If necessary, the accessible route and space shall be created by the repositioning of vehicles parked previously by the attendant.

E. Each high-clearance accessible parking space shall have two permanently and prominently posted signs. One shall designate the space as reserved for people with physical disabilities, as required by §4.6.2. The other shall note that vehicles parked in such spaces are subject to being moved by an attendant of the parking facility in order to accommodate a vehicle which cannot be accommodated in another accessible parking space.

4.6.2.3 SMALL RESIDENTIAL DEVELOPMENTS

Where a parking facility serving one or more particular residential buildings has less than six parking spaces, the accessible parking space need not have a sign reserving that space for such use provided that a pole suitable for mounting such a sign is present; and provided further that a Parking Facility Operator shall post such a sign at such a space upon the request of a physically handicapped person who resides in a building served by such parking facility and whose vehicle bears a special identification permit or license plate. It shall be the responsibility of the Parking Facility Operator to inform the non-disabled user of the parking space that a request for the parking space has been tendered and is required by law to be tendered. Where there is only one parking space serving those residential buildings and where the owner of one or more of those residential buildings or a member of such owner's immediate family lives in one of those buildings and uses that parking space for a vehicle driven by that owner or a member of that owner's immediate family, a physically handicapped person shall not have the right to displace that owner or member of that owner's immediate family from that space.

4.6.2.4 "FULL" SIGNS

Parking facilities which post signs indicating they are "full" shall include on all such signs, in letters of the same size as the primary message, a statement that spaces remain available for physically handicapped persons, when one or more such spaces are available. The latter indication may be by use of the word "except" and the symbol of accessibility (See 4.28.5).

4.6.2.5 SIGNS

In addition to Signs required by §4.6.2 to be posted at individual parking spaces, signs with the following texts shall be permanently and prominently posted as indicated. The appropriate number of spaces must be inserted where indicated in "A" below.

A. At Entrances and Offices to Attended Parking

Facilities:
PARKING FOR PEOPLE WITH PHYSICAL DISABILITIES
This Parking Facility contains spaces allocated for people with physical disabilities. Of those spaces are high clearance spaces reserved for use by people with disabilities who could not otherwise be accommodated in this garage; if a vehicle carrying a person with a disability is parked in a high clearance space, but could be accommodated elsewhere in this garage, a garage attendant may move such vehicle to such other space. At least one parking space allocated for physically handicapped persons shall be kept vacant for the use of our customers with disabilities unless the total number of spaces allocated for use by physically handicapped persons are already filled by vehicles of physically handicapped persons. High clearance parking spaces are indicated on the accompanying drawing.
People with disabilities are, of course, encouraged to use the full services of our attendants. A person with a physical disability may either have a garage attendant:

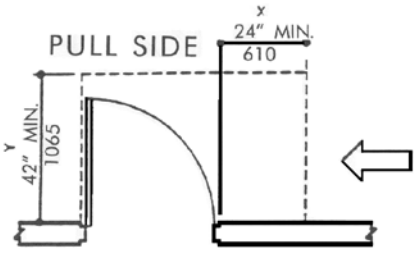
•park the car which the person with a disability is driving (or in which he or she is riding) or

•assist the driver in finding and using a space. At the request of a person with a disability, garage attendants are required to clear an access aisle for a space at the time of parking and removal of the vehicle in order to provide the number of accessible spaces required by law.
New York City Administrative Code
§27-292.19; Reference Standard RS 4-6, §4.6.2

B. At Spaces for High-Clearance Vehicles:
RESERVED PARKING FOR HIGH-CLEARANCE VANS
This space is designed to accommodate high-clearance vans which cannot be parked elsewhere in this garage. With the exception of high-clearance vans and vehicles which are specially equipped for people with physical disabilities and which cannot be moved by garage attendants, vehicles with special permits which use this space may be moved to an accessible space elsewhere in this garage should a high-clearance van or specially equipped vehicle need this space. No vehicle may use this space in any event unless the vehicle bears a special vehicle identification permit or license plate from New York State, New York City or another jurisdiction.
New York City Administrative Code
§27-292.19; Reference Standard RS 4-6, §4.6.2

C. At the Entrance and Office to Parking Facilities Accessory to Residences:
PARKING FOR PEOPLE WITH PHYSICAL DISABILITIES
This Parking Facility contains spaces designed and located to improve access for people with disabilities who need special accommodations. These accessible parking spaces may be leased, rented or assigned to a person without a physical disability on no longer than a month-to-month basis. All leases, rentals and assignments of such accessible spaces which are not made for the benefit of a person with a disability must be on written condition that the space is to be relinquished immediately at the end of the term of the lease, rental or assignment to a person who requests of the parking facility's management to lease, rent or be assigned the space for a physically handicapped person (who may be either the person making the request or another person) residing in the building and whose vehicle bears a special vehicle identification permit or license plate. The accessible parking space so transferred for the benefit of a physically handicapped person shall be the one available within the next thirty calendar days following the date of the request under the terms of its lease, rental or assignment which is not being used for a person with a physical disability.
New York City Administrative Code
§27-292.19; Reference Standard RS 4-6, §4.6.2

4.6.3 is amended to read as follows:
4.6.3 PASSENGER LOADING ZONES
Passenger loading zones shall provide an access aisle at least 48 in. (1220 mm) wide and 20 ft. (6m) long adjacent and parallel to the vehicle pull-up space (See Fig. 10). If there are curbs between the access aisle and the vehicle pull-up space, then a curb ramp complying with 4.7 shall be provided.
A minimum vertical clearance of 114 in. (2895 mm) shall be provided at accessible passenger loading zones and along vehicle access routes to such areas from site entrances.
Figure 25C (Pull side) of §4.13.6 of such standard, is amended to read as follows:



Note: y = 48 in (1220 mm)* minimum for rooms, other than powder rooms, with minimum finished dimensions less than 5'-5" x 7'-4"; y = 54 in (1370 mm) minimum if the door has a closer.

LATCH-SIDE APPROACHES - SWINGING DOORS
Figure 25 (C)

As enacted but probably intended to read "y=42 in. (1050mm)"

4.13.8 of such standard is deleted.
4.26.5 STANDARD FOR INSTALLATION.- For standards for the installation of visual and auxiliary alarms see reference standard RS 17-3C.
Add a new sentence at the end of subsection 4.32.4.1 Doors to read as follows:
Doors may swing into the bathroom of an adaptable dwelling

unit if the door, door buck and adjacent space is designed and constructed so that remounting the hinges is the only change required to swing the door out as shown in Fig. 53.

Add a new subsection 4.32.4.8 to section 4.32.4 Bathrooms to read as follows:

4.32.4.8 Minimum sized adaptable bathrooms may be shown in figure 53 and figure 54.

Fig. 53(A) shows desirable minimum conditions. Where such a plan is not possible to attain, then the arrangement in Fig. 53(B) may be acceptable.

Amend paragraph (1) of subsection 4.32.5.10 Kitchen Storage to read as follows:

(1) The adjustable maximum height shall be 48 in. (1220mm) for at least one shelf of all cabinets and storage shelves mounted above work counters (see figure 50).

Add a new subsection 4.32.5.11 to section 4.32.5 Kitchens to read as follows:

4.32.5.11 Minimum sized adaptable kitchens or kitchenettes may be as shown in figure 55, figure 56, figure 57 and figure 58.

In dwelling units where a dishwasher is provided, but where no other space otherwise is available in the kitchen for the installation of a dishwasher, one may be installed under a work surface described in subsection 4.32.5.4; provided that, at the option of a person with a disability residing in the dwelling unit, the dishwasher shall be removed, and the work surface made to conform with said subsection, by and at the sole expense of the owner of the dwelling unit.

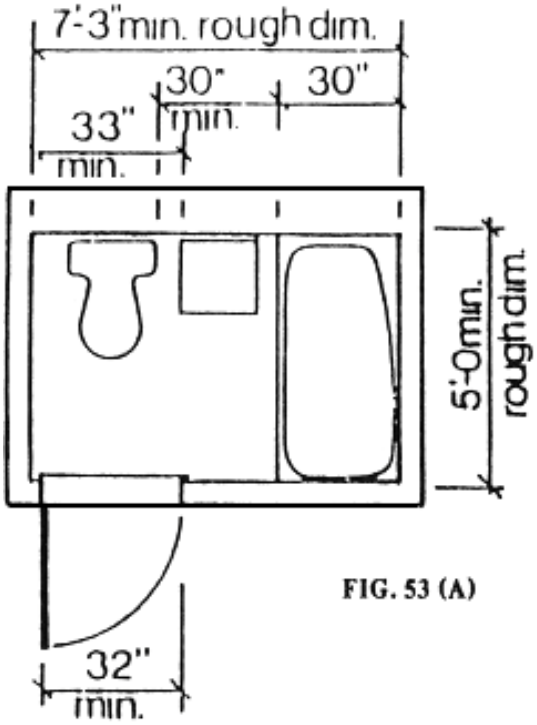


FIG. 53 (A)

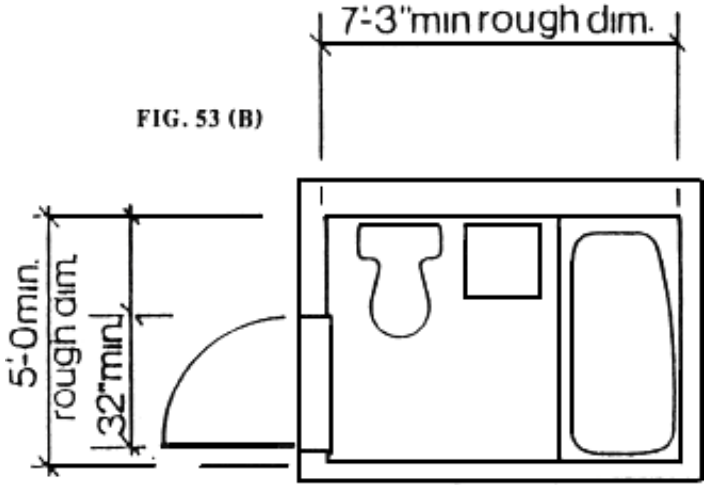


FIG. 53 (B)

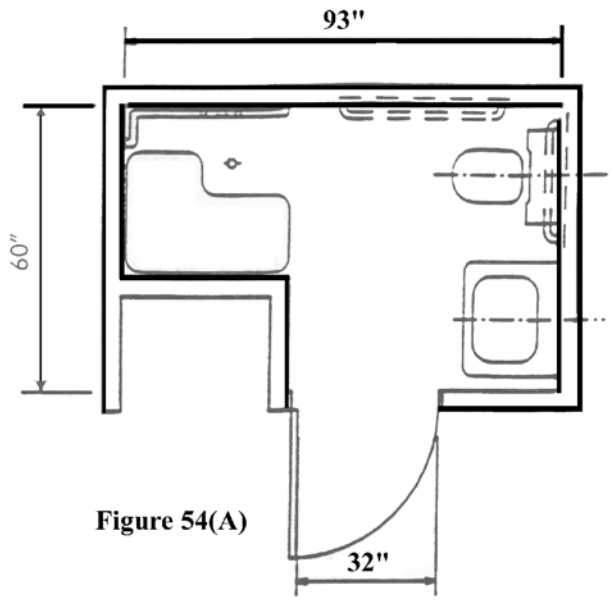


Figure 54(A)

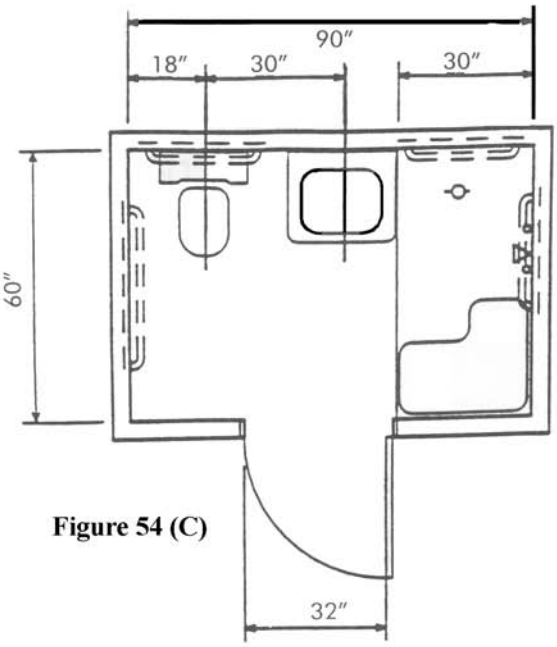


Figure 54 (C)

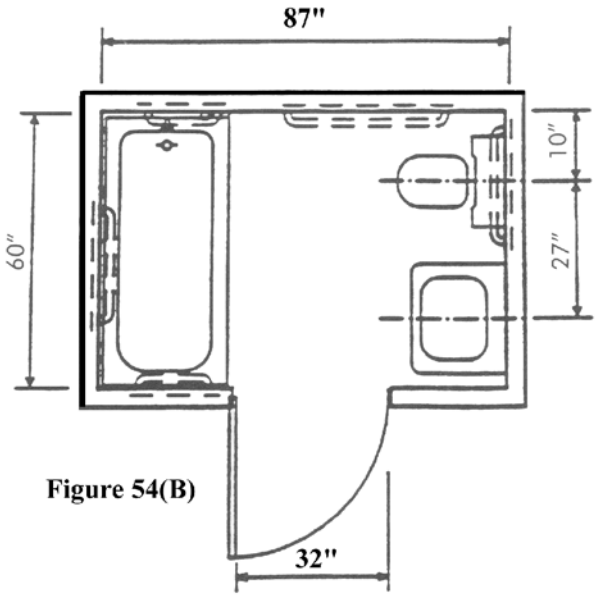


Figure 54(B)

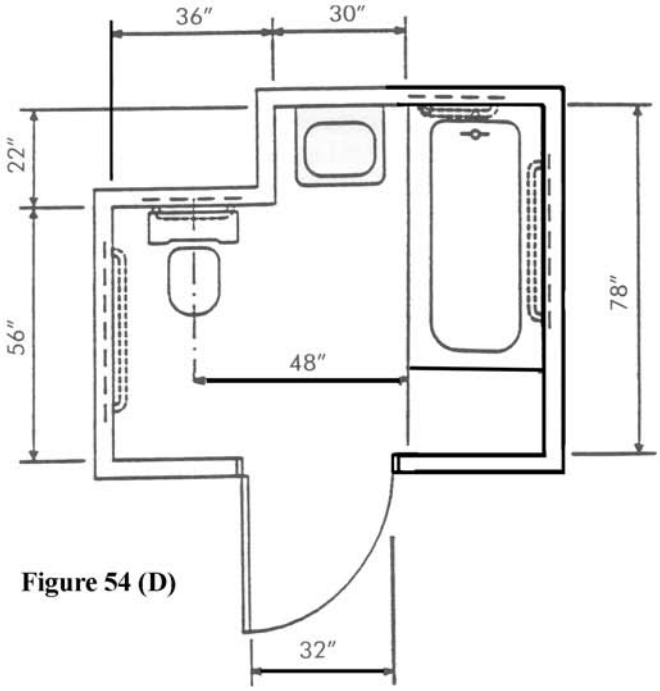


Figure 54 (D)

Symbol Key

Shower Location
Bath, Shower Controls
Drain

FIGURE 54
MINIMUM SIZED ADAPTABLE BATHROOMS

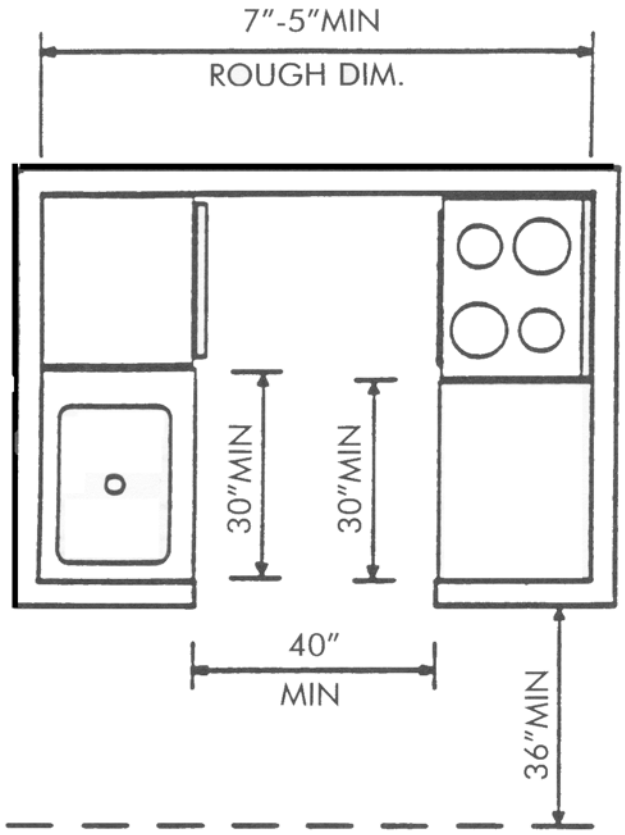
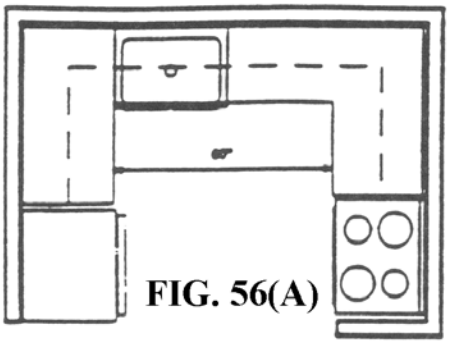
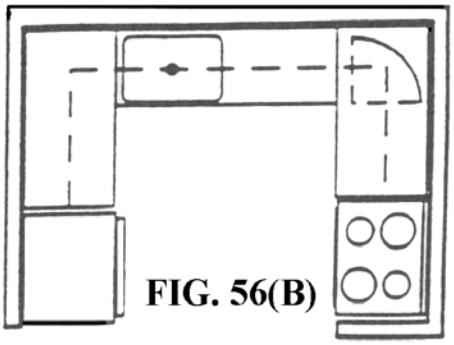
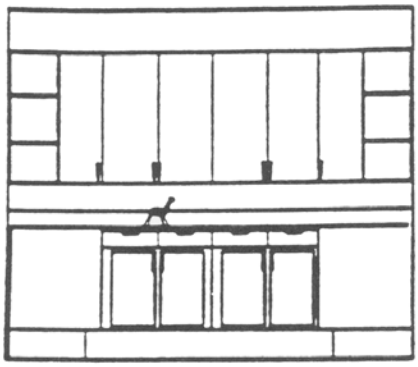
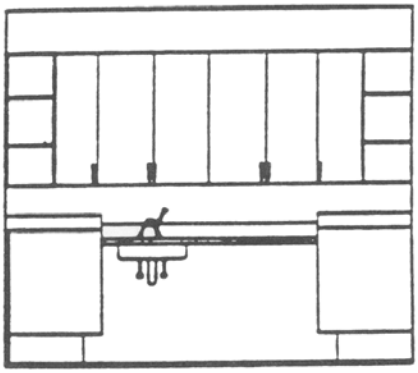


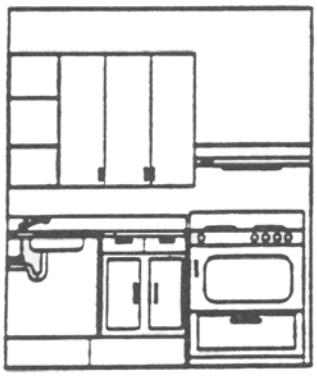
FIGURE 55
MINIMUM SIZED ADAPTABLE KITCHEN OR KITCHENETTE

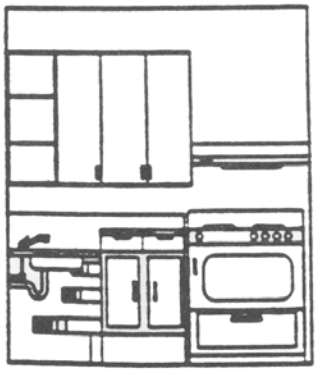












Accessible; before removal of cabinets and base

Cabinets and base removed, counter height lowered

FIGURE 56
EXAMPLE OF ADAPTABLE KITCHEN – U – SHAPED PLAN

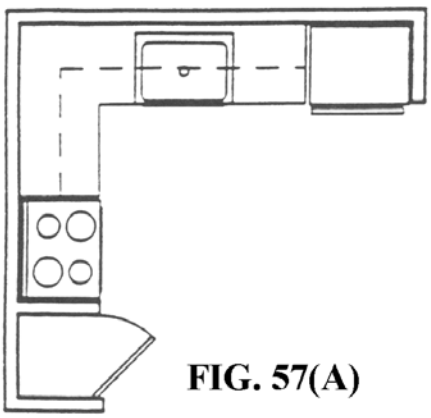


FIG. 57(A)

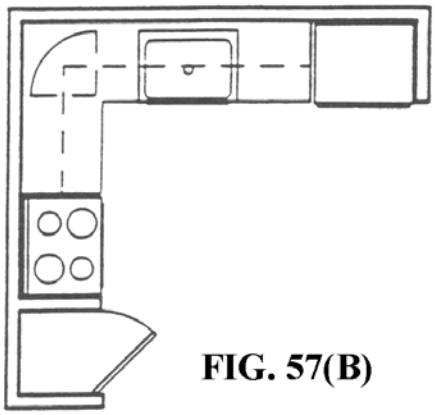
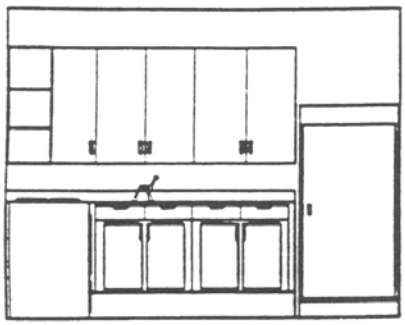
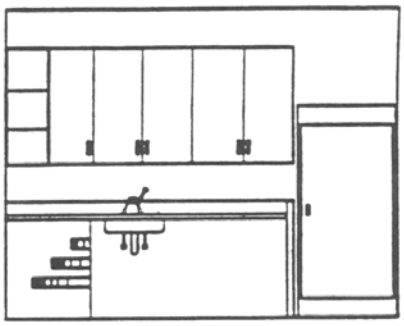
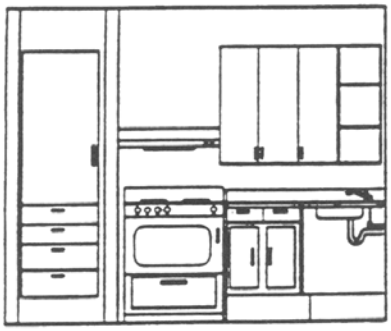


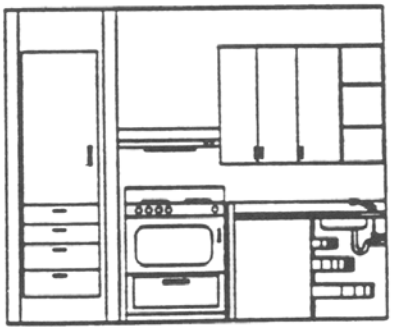
FIG. 57(B)







Accessible: before removal of cabinets and base



Cabinets and base removed, counter height lowered

FIGURE 57
EXAMPLE OF ADAPTABLE KITCHEN – L – SHAPED PLAN

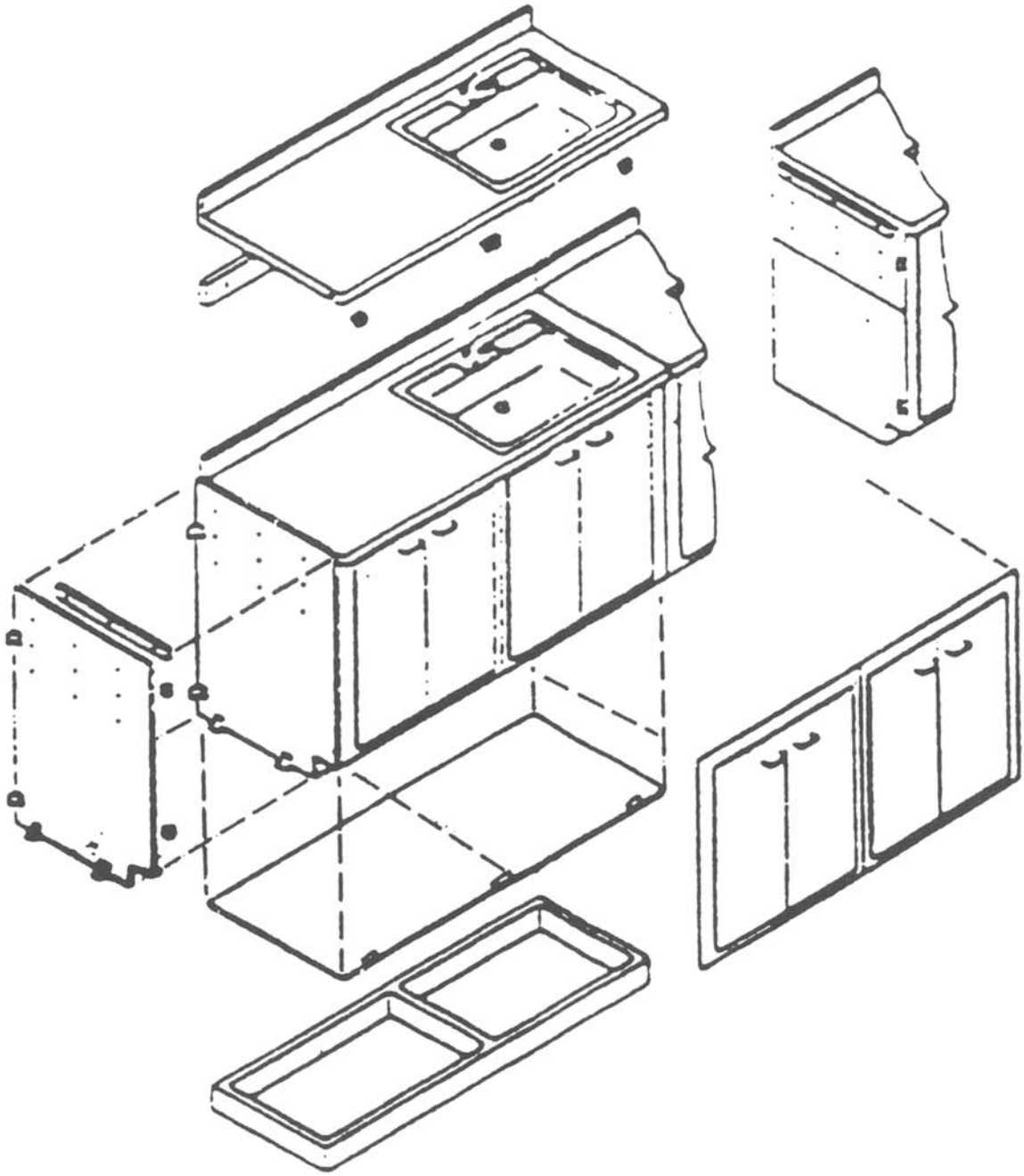


FIGURE 58
EXPLODED AXONOMETRIC FOR ADAPTABLE KITCHEN

REFERENCE STANDARD RS-5
FIRE PROTECTION
CONSTRUCTION REQUIREMENTS
* LIST OF REFERENCED NATIONAL STANDARDS

AISG	Fire Resistance Ratings, as Modified	1985
AISI FT-900-0480	Designing Fire Protection for Steel Columns, Third Edition	1980
AISI FT-901-0481	Fire Resistant Rating of Load Bearing Steel Stud Walls	1981
AISI FT-902-0285	Designing Fire Protection for Steel Beams	1984
AISI FT-227-1281	Designing Fire Protection for Steel Trusses, Second Edition	1981
GA-600	Fire Resistance Design Manual, Twelfth Edition, as Modified	1988
NFoPA	Report No. WHI-694-020, Report of Testing on a Load Bearing Stud Partition	1981
NFoPA	Report No. WHI-690-003, Report of Testing on a Load-Bearing Stud Partition	1981
ASTM/E 119	Standard Methods of Fire Tests of Building Construction and Materials	1988
AWPA C 20	Structural Lumber-Fire Retardant Treatment by Pressure Processes	1988
AWPA C 27	Plywood Fire Retardant Treatment by Pressure Processes	1988
ASTM E 84	Standard Method of Test for Surface Burning Characteristics of Building Materials	1987
ANSI/ASTM E 69	Standard Test Method for Combustible Properties of Treated Wood by Fire-Tube Apparatus	1980
ANSI/ASTM E 160	Standard Test Method for Combustible Properties of Treated Wood by Crib Test	1980
ANSI/ASTM E 152	Standard Methods of Fire Test of Door Assemblies	1981a
ANSI/ASTM E 163	Standard Methods of Fire Test of Window Assemblies	1984
NFiPA 80	Standard for Fire Doors and Windows	1986
ANSI/ASTM E 108	Standard Methods of Fire Test of Roof Coverings	1983
NFiPA 204M	Guide for Smoke and Heat Venting	1985
ANSI/ASTM D635	Standard Test for Rate of Burning and/or Extent and Time of Burning of Self-Supporting Plastics in a Horizontal Position	1981
ANSI/ASTM D568	Standard Test Method for Rate of Burning and/or Extent and Time of Burning of Flexible Plastics in a Vertical Position	1977
ANSI/ASTM D374	Standard Test Methods for Thickness of Solid Electrical Insulation	1979
ASTM E 814	Standard Method of Fire Tests of Through-Penetration Fire Stops	1983
DOC FF1	Methanine Pill Test	1970
ASTM E 648	Standard Test Method for Critical Radiant Flux of Floor Covering Systems using a Radiant Heat Energy Source	1988
ASTM E 662	Standard Test Method for Specific Optical Density of Smoke Generated by Solid Materials	1983
***UBC Std. 26-9	Method of Test for the Evaluation of Flammability Characteristics of Exterior, Nonload-Bearing Wall Containing Combustible Components Using the Intermediate Scale,Multistory Test Apparatus	1997

Local Law 13-1987; Local Law 16-1984; 242-90 BCR; 1343-88 BCR; 236-87 BCR; 1076-86 BCR; 262-86 BCR; 435-85 BCR; 252-82 BCR

****DOB 3-4-01***

**REFERENCE STANDARD RS 5-1A

AISG 1985-Fire Resistance Ratings, as modified. MODIFICATIONS-The provisions of the AISG Fire Resistance Ratings shall be subject to the following modifications:

1. Delete the following pages in their entirety: 22, 24, 45, 46***, 48, 52, 54, 76, 84, 97, 98, 99, 102, 110, 115, 117.

2. Delete the specified items on the following pages:

PAGE	DESCRIPTION-SPECIFIED ITEMS
25	Protection Type-Unprotected Rating(s) of 45 and 30 min. comb.
28	Protection Type-None Rating(s) of 45 min. comb.
29	2 1/2 slab thickness-Rating 30 min.

41 Ceiling Type-None Rating 5 min.
47 Ceiling Type-Gypsum Wallboard Rating of 30 min. comb.
48 Ceiling Type-Gypsum Wallboard Rating of 25 min. comb.
50 Ceiling Type-Plaster on Gypsum Lath Rating(s) of 45 min. and 30 min. comb.
62 Type-Calcareous Gravel Rating(s) 30 min. and 20 min. comb.
63 Type-Cinder Rating 45 min.
65 Type-Expanded clay, shale or slate (Rotary kiln) Rating 45 min.
68 Type-Siliceous Gravel Rating(s) 20 min. and 15 min.
77 Plaster Type-Gypsum Neat Rating 45 min.
83 Plaster Type-Gypsum and Sand Rating 45 min.
91 Plaster Type-Portland Cement and Sand Rating(s) 45 min. and 30 min.
95 Type-Clay or Shale Rating 45 min.
103 Finish Type-Laminated Wood Rating(s) 45 min., 30 min., 25 min., 15 min. and 10 min. comb.
104 Finish Type-Asbestos Cement Board Rating(s) 40 min. and 30 min. comb.
107 Plaster Type (4)-Gypsum and Sand Rating(s) 45 min. and 30 min. comb.
109 Plaster Type (5)-Gypsum and Sand Rating(s) 45 min., 30 min. and 20 min. comb.
111 Plaster Type-Gypsum and Sand Rating 30 min. comb. Lime and Sand Rating(s) 45 min., 30 min. and 25 min. comb.
112 Finish Type-Asbestos Cement Board Rating(s) 30 min. and 10 min. comb.
114 Finish Type-Gypsum Wallboard Rating(s) 45 min., 30 min., and 25 min. comb.
117 Finish Type-Wood Rating 45 min. comb.

3. An equivalent blend of mineral fibers and cementitious binders may be substituted for asbestos-cement material on the following pages: 46, 51, 52, 92, 104, 112, 114.

******* ***1076-86 BCR***

******** ***As enacted, but "46" probably intended to be omitted.***

* REFERENCE STANDARD RS 5-1B

GA-600 1988-Fire Resistance Design Manual, Twelfth Edition, as Modified.

MODIFICATIONS.-The provisions of GA-600-1988 shall be subject to the following modifications:

1. Revise the heading on the top of page five in the section on USE OF MANUAL to read as follows:

LIMITING HEIGHTS

(a) NONLOAD-BEARING PARTITIONS

2. Insert the following after the paragraphs on (a) NONLOAD-BEARING PARTITIONS and before the heading PERFORMANCE OF PLASTER:

(b) LOAD BEARING PARTITIONS

Lateral bracing and height limitations shall be designed in accordance with the applicable reference standard independent of the sheathing.

3. In the section on GENERAL EXPLANATORY NOTES under the heading USE OF MANUAL, add the following paragraph:

15. All concrete slabs shall be structurally adequate. Such slabs shall have a minimum compressive strength of 3000 psi., with the reinforcement and thickness at least that as shown in the test.

4. In the assemblies listed under the heading WALLS AND INTERIOR PARTITIONS, NONCOMBUSTIBLE, the following requirements are added to the Detailed Description for (LOAD BEARING) assemblies:

WP 1204, WP 1206, WP 1635, WP 1714 and WP 1716 under the GA and Company Codes:

Steel Studs.-Steel studs shall be a minimum of 3 1/2 inches wide and a minimum galvanized steel or 18 GA (.0478) or heavier, primed steel, cold-formed, and shall comply with Reference Standard RS 10-6 (Specification for the Design of Cold-Formed Steel Structural members by AISI, as modified). Lateral supporting members and all details enhancing the structural integrity of the wall assembly shall be as specified by the steel stud designer, and shall meet the applicable requirements of the Code.

5. In the assemblies listed under METAL CLAD EXTERIOR WALLS, assemblies WP 9010, WP 9060, WP 9225, WP 9325, under the GA File No. heading, are deleted in its entirety.

6. Insert the following heading after the paragraph on USE OF PLENUM SPACE in the section on FLOOR-CEILINGS:

SUSPENSION SYSTEMS

Suspended ceilings contained herein shall comply with the requirements of Reference Standard RS 5-16.

7. In the assemblies listed under FLOOR-CEILING ASSEMBLIES, NON-COMBUSTIBLE, assembly FC 4120, under the GA File No. heading, is deleted in its entirety.

8. In the assemblies listed under FLOOR-CEILING ASSEMBLIES, WOOD-FRAMED, assembly FC 5105, under the GA File No. heading, is deleted in their entirety.

9. In the assemblies listed under BEAMS, GIRDERS, AND TRUSSES, assemblies BM 3310, BM 4410 and BM 4420, under the GA File No. heading, are deleted in their entirety.

10. The following assemblies which were listed in the Gypsum Association Fire Resistance Manual, Eleventh Edition, but do not appear in the Twelfth Edition, may continue to be used:

WP 1016
WP 1260
WP 1300
FC 5010
FC 5108
WP 1725
WP 7083
WP 7086
FC 5430

****** ***242-90 BCR; 262-86 BCR***

** REFERENCE STANDARD RS 5-1C MISCELLANEOUS TEST REPORTS FOR LOAD-BEARING WALL ASSEMBLIES NON-COMBUSTIBLE: ONE, ONE AND ONE-HALF, AND TWO-HOUR FIRE RATINGS.

AISI FT-901-1981- Fire Resistance of Load-Bearing Steel Stud Walls with Gypsum Wallboard Protection with or without Cavity Insulation.

MODIFICATIONS: The provisions of AISI FT-901-1981, are modified as follows:

1. Delete all Fire Resistive Assemblies with 45 minute ratings.
2. Substitute the following for paragraph 2:

Steel Studs-Corrosion-Protected steel studs, min. 3 1/2 inches wide, min. No. 18 GSG (0.047 inch thick) galvanized steel or No. 18 MSG (0.043 inch thick) primed steel, cold-formed, shall be designed in accordance with Reference Standard RS 10-6 (Specification for the Design of Cold-Formed Steel Structural members by AISI, as modified). All design details enhancing the structural integrity of the wall assembly including the axial design load of the studs, shall be as specified by the steel stud designer and/or the producer, and shall meet all applicable requirements of the code. The maximum stud spacing of wall assemblies shall not exceed 24 inches. Studs shall be attached to floor and ceiling tracks with 1/2 inch long Type S-12 pan head, self-drilling, self-tapping steel screws on both sides of the studs, or welded in accordance with RS 10-6.

3. Substitute the following for paragraph 3:

Lateral Supporting Members (not shown)-Lateral support or bracing shall be provided in accordance with Reference Standard RS 10-6 independent sheathing.

4. Substitute the following for paragraph 4:

Wallboard, Gypsum-Gypsum wallboard shall conform to ASTM C 36 Type X and be identified as such. The wallboard shall be applied vertically with joints between layers staggered. Outer layer of three-layer construction may be applied horizontally. The thickness and number of layers and percent of design load for the 1 hour, 1 1/2 hour and 2 hour ratings shall be as specified in the table above.

5. Substitute the following for paragraph 7:

Batts and Blankets-All insulation and noise control materials included in wall assemblies shall be Approved by the Board of Standards and Appeals or Accepted by the Materials and Equipment Acceptance Division of the Department of Buildings for the intended use.

252-82 BCR

UL FIRE RESISTANCE DIRECTORY
Design U 425

Interior Walls-Wallboard Protection Both Sides of Wall		
Rating	Number of Layers and Thickness of Boards in Each Layer	Percent of Design Load
1 hr.	1 layer, 5/8 in. thick	100
1 1/2 hr.	2 layers, 1/2 in. thick	100
2 hr.	2 layers, 5/8 in. thick or	80
	*3 layers, 1/2 in. thick	100

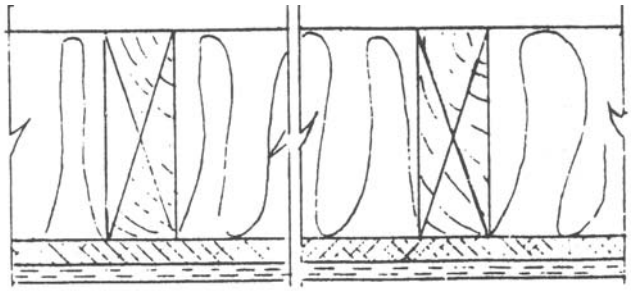
*Ratings applicable to assemblies serving as exterior walls where Classified fire resistive gypsum sheathing type wallboard is substituted on the exterior face.
*Bearing the UL Classification Marking.

Exterior Walls-Wallboard Protection on Interior Side of Wall		
Rating	Number of Layers and Thickness of Boards in Each Layer	Percent of Design Load
1 hr.	2 layer, 1/2 in. thick	100
1 1/2 hr.	2 layers, 5/8 in. thick	100
2 hr	3 layers, 1/2 in. thick	100

6. Steel Floor and Ceiling Tracks-Top and bottom tracks of wall assemblies shall consist of steel members, min. No. 20 GSG (0.036 in. thick) galv. steel or No. 20 MSG (0.033 in.) thick primed steel, that provide a sound structural connection between steel studs and to adjacent assemblies such as a floor, ceiling and or other walls. Attached to floor and ceiling, assemblies with steel fasteners spaced not greater than 24 in.

7. Fasteners-Screws used to attach wallboard to studs: self-tapping bugle head sheet steel type, spaced 12 in. o.c. First layer Type S-12 by 1 in. long; second layer Type S-12 by 1 3/8 in. long: third layer Type S-12 by 1 7/8 in. long.

8. Joint Tape and Compound-Vinyl or casein, dry or premixed joint compound applied in two coats to joints and screwheads of outer layer. Perforated paper tape, 2

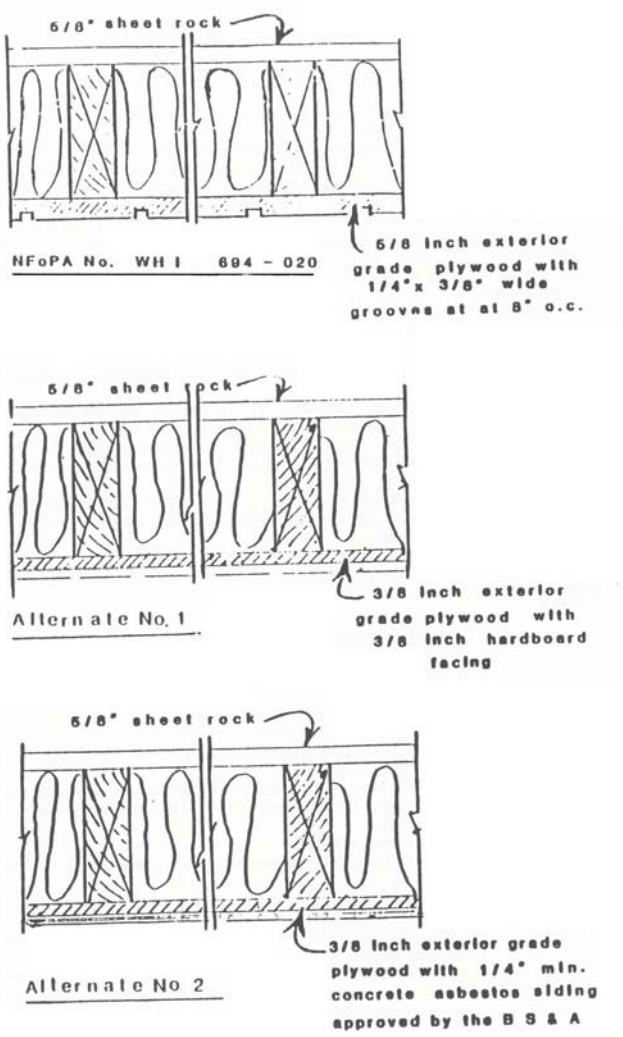


in. wide, embedded in first layer of compound over all joints of outer layer.

Report of Testing on a Load-Bearing Wood Stud Partition -Dated - October 19, 1981

Wall is constructed using 2 in. x 4 in. (nominal) wood studs spaced 16 in. on center. Fire exposed (interior) side is covered with 5/8 in. Type X Gypsum Wallboard applied vertically and fastened with 6d box nails on 7

in. centers. Unexposed side (exterior) is faced with a layer of 1/2 in. thick Fiberboard Sheathing (0.835 psf) applied vertically and fastened with 1 1/2 in. roofing nails on 3 in. centers at edges and 6 in. centers at intermediate supports. Hardboard Shiplap Edge Panel Siding, 3/8 in. thick (1.84 psf) is applied vertically over the Fiberboard Sheathing and fastened with 8d nails on 4 in. centers at edges and 8 in. centers at intermediate supports. The Cavity Spaces (stud spaces) are filled with Mineral Wool Batts having a density of 2.14 lbs./cu ft. (Mineral wool may be rock wool or slag wool of equivalent density.) All insulation and noise control materials included in wall assemblies shall be Approved by the Board of Standards and Appeals or Accepted by the Material and Equipment Acceptance Division of the Department of Buildings for the intended use. The maximum load permissible on the studs in this assembly shall be 2000 lbs. each.



COMBUSTIBLE: ONE HOUR FIRE RATINGS

Report of Testing on a Load-Bearing
Wood Stud Partition - Dated - October 9, 1981
Wall is constructed using 2 in. x 4 in. (nominal) wood studs spaced 16 in. on centers. Fire exposed side (interior) is covered with 5/8 in. Type X Gypsum Wallboard applied vertically and fastened with 6d box nails on 7 in. centers. Unexposed side (exterior) is faced with 3/8 in. thick (5/8 in. between grooves) exterior grade plywood panels applied vertically and fastened with 8d nails on 6 in. centers around edges and 12 in. centers at intermediate supports. The Cavity (stud) Spaces are filled with Mineral Wool Batts having a density of 2 lbs./cu. ft. (Mineral wool may be rock wool or slag wool of equivalent density.) All insulation and noise control materials included in wall assemblies shall be Approved by the Board of Standards and Appeals or Accepted by the Material and Equipment Acceptance Division of the Department of Buildings for the intended use.
The maximum load permissible on the studs in this assembly shall be 2000 lbs. each.

* REFERENCE STANDARD 5-1D
MISCELLANEOUS TEST REPORTS FOR LOAD BEARING STEEL COLUMN ASSEMBLIES NONCOMBUSTIBLE: DESIGN OF ONE, ONE AND ONE-HALF, TWO, THREE AND FOUR HOUR FIRE RATINGS OF PROTECTED COLUMNS

AISI FT-900-0480-1980 Designing Fire Protection for Steel Columns, third edition.

MODIFICATIONS: The provisions of AISI FT-900-0480-1980 are modified as follows:

1. In Part I-Fire Resistance Ratings for Columns Protected with Gypsum Wallboard values determined by formula shall govern when interpolating graphical or tabular results.
2. In Part I-Fire Resistance Ratings for Columns Protected with Gypsum Wallboard, all reference to approved gypsum wallboard shall infer material conforming to ASTM C36 Type X and be identified as such. All gypsum wallboard used in fire resistive steel column assemblies designed in accordance with this Reference Standard shall be installed in accordance with one of the methods recommended in this reference standard.
3. Constants C1 and C2 shall be applicable only to the materials identified in Section C of Part II-Calculating Fire Resistance Ratings for Columns Protected with Spray-Applied Materials. Constants for other spray-applied fire proofing materials shall be determined by ASTM E 119 fire tests. The tests and their evaluation shall be submitted to the Material and Acceptance Division (MEA) for acceptance.
4. The formulas for determining thickness of fire protection materials shall not be used with columns or built-up sections that have W/D ratios larger than those of the W14x233 shape. Fire protection thickness may be applied to columns larger than the W14x233 provided the thickness of fire protection materials to be applied to columns are the same as those required for the W14x233 column.
5. In absence of substantiating fire endurance test results, ducts, conduit, piping and similar mechanical, electrical and plumbing installations shall not be

embedded in any required fire protection materials.
6. The formulas in Part II for calculating the fire-resistance ratings of columns protected with spray-applied material may not be used for tubular or round columns of eight (8) inches or less in width or diameter.
435-85 BCR

** **REFERENCE STANDARD RS 5-1E**
MISCELLANEOUS TEST REPORTS FOR LOAD BEARING STEEL BEAM/GIRDER ASSEMBLIES

NONCOMBUSTIBLE ASSEMBLIES: RESTRAINED AND UNRESTRAINED

AISI FT-902-0285-1984-Designing Fire Protection for Steel Beams.

MODIFICATIONS: The provisions of AISI FT-902-0285-1984 are modified as follows:
1. In Part V Beam Substitutions, Section 2, Beam Substitution Equation, Subscript 2 and its meaning is revised to read as follows:
Subscript 2 = refers to the beam and protection thickness specified in a fire resistive assembly approved by the Board of the Standards and Appeals or accepted by the Materials and Equipment Acceptance Division.
Subsection 3) is revised to read as follows:
3) the Unrestrained Beam Rating in the approved or accepted assembly is not less than one-hour.
2. The procedures illustrated in Parts V and VI for UL listed assemblies may be applied to similar approved and accepted assemblies.
3. Beam/Girder substitutions shall only be made for similar approved or accepted fire resistive materials for similar assemblies.
4. Fire tested composite designed beams/girders shall not be substituted into assemblies that specify noncomposite beams. However, fire tested noncomposite designed beams/girders may be substituted into assemblies utilizing composite beams/girders.
5. Ducts, conduit, piping and similar mechanical, electrical and plumbing installations shall not be embedded in required fire protection materials without substantiating fire endurance test results.
236-87 BCR

* **REFERENCE STANDARD RS 5-1F**
METHODS OF ANALYTICAL DETERMINATION OF FIRE RESISTANCE OF LOAD BEARING STEEL TRUSS ASSEMBLIES

NONCOMBUSTIBLE ASSEMBLIES: RESTRAINED AND UNRESTRAINED

AISI FT-227-1281-1981-Designing Fire Protection for Steel Trusses.

MODIFICATIONS: The provisions of AISI FT-227-1281-1981 are modified as follows:
1. Analytically determined fire protection systems for trusses shall be based on fire resistive assemblies approved by the Board of Standards and Appeals or accepted by the Materials and Equipment Acceptance Division.
2. Methods of determining fire resistance of trusses utilizing the column formulas contained in AISI FT-900-0480 shall comply with the requirements and modifications specified in Reference Standard RS 5-1D.
236-87 BCR

REFERENCE STANDARD RS 5-2

ASTM E-119 – a) Standard methods Fire Test of Building Construction Materials 1988 or
b) a combination of small scale and/or half scale tests and engineering evaluation acceptable to the commissioner in conjunction with evaluation of full scale test conforming with ASTM E-119 for a variety of assemblies or combination of materials, or
c) a combination of small-scale, half-scale or full size tests representative of the actual fire exposure of the occupancy and engineering evaluations all acceptable to the commissioner. In either (a), (b), or
d) the materials or combinations of materials constructed shall be in accordance with the specifications of the materials used.
1343-88 BCR; 217-72 BCR

REFERENCE STANDARD RS 5-3

*** AWPA C20-1988-Structural Lumber-Fire Retardant Treatment by Pressure Processes.
****1343-88 BCR; 308-81 BCR; 398-71 BCR***

REFERENCE STANDARD RS 5-4

† AWPA C27-1988-Plywood Fire Retardant Treatment by Pressure Processes.
†1343-88 BCR; 308-81 BCR; 71-79 BCR

REFERENCE STANDARD RS 5-5

†† a) ASTM E84-1987-Standard Method for Surface Burning Characteristics of Building Materials, or

b) a combination of small scale tests and engineering evaluations acceptable to the commissioner in conjunction with evaluation of full scale tests conforming with ASTM E84 for a variety of assemblies or combinations of materials. In the case of fire-retardant treated wood, the small scale tests utilized in conjunction with the full scale tests shall conform to either ANSI/ASTM E69-1980-Standard Test Method for Combustible Properties of Treated Wood by Fire-Tube Apparatus or ANSI/ASTM E160-1980-Standard Test Method for Combustible Properties of Treated Wood by the Crib Test.
††1343-88 BCR; 308-81 BCR; 218-72 BCR

REFERENCE STANDARD RS 5-6

† ANSI/ASTM E152-1981a-Standard Methods of Fire Tests of Door Assemblies.
†1343-88 BCR; 308-81 BCR; 71-79 BCR

REFERENCE STANDARD RS 5-7

†ANSI/ASTM E163-1984-Standard Method of Fire Tests of Window Assemblies.
†1343-88 BCR; 308-81 BCR; 71-79 BCR

REFERENCE STANDARD RS 5-8

†ANFiPA 80-1986 Standard for Fire Doors and Windows.
†1343-88 BCR; 308-81 BCR; 71-79 BCR

REFERENCE STANDARD RS 5-9
ROOF COVERING CLASSIFICATIONS

Description	Maximum Incline (In. to Ft.)	Class A	Class B	Class C
Brick Concrete Tile		(1) Brick, 2 1/2 in. thick. (2) Reinforced portland cement, 1 in. thick. (3) Concrete or clay floor or deck tile, 1 in. thick. (4) Flat or French-type clay or concrete tile, 3/8 in. thick with 1 1/2 in. or more end lap and head lock, spacing body of tile 1/2 in. or more above roof sheathing, with underlay of one layer of Type 15 asphalt-saturated asbestos felt or one layer of Type 30 or two layers of Type 15 asphalt-saturated rag felt. (5) Clay or concrete roof tile, Spanish or Mission pattern, 7/16 in. thick, 3 in. end lap, same underlay as above. (6) Slate, 3/16 in. thick, laid American method.		
Metal Roofing	12	Sheet roofing of 16 oz. copper or of 30-*gauge steel or iron protected against corrosion. Limited to non-combustible roof decks or non-combustible roof supports when no separate roof deck is provided.	Sheet roofing of 16 oz. copper or of 30-*gauge steel or iron tile, protected against corrosion; or shingle-pattern roofings with underlay of one layer of Type 15 saturated asbestos-felt, or one layer of Type 30 or two layers of Type 15 asphalt-saturated rag felt.	Sheet roofing of 16 oz. copper or of 30-*gauge steel or iron tile, protected against corrosion; or shingle-pattern roofings, either without underlay or with underlay or rosin-sized paper. Zinc sheets or shingle roofings with an underlay of one layer of Type 30 or two layers of Type 15 asphalt-saturated rag-felt or one layer of 14 lbs. unsaturated or one layer of Type 15 asphalt-saturated asbestos felt.
Cement-Asbestos Shingles	Exceeding 4	Laid to provide two or more thicknesses over one layer of Type 15 asphalt-saturated asbestos felt.	Laid to provide one or more thicknesses over one layer of Type 15 asphalt-saturated asbestos felt.	

As enacted but "gage" probably intended

REFERENCE STANDARD RS 5-10

*(a) ANSI/ASTM E108-1987-Standard Methods of Fire Tests of Roof Coverings, or

b) a combination of small scale and/or half scale tests and engineering evaluations acceptable to the commissioner in conjunction with evaluation of full scale tests conforming with ASTM E 108 for a variety of assemblies or combinations of materials.

1343-88 BCR; 308-81 BCR; 219-72 BCR

REFERENCE STANDARD RS 5-11

** NFiPA 204M-1985-Guide for Smoke and Heat Venting.

****1343-88 BCR; 308-81 BCR***

REFERENCE STANDARD RS 5-12

***ANSI/ASTM D 635-1981-Standard Test for Rate of Burning and/or Extent and Time of Burning of Self-Supporting Plastics in a Horizontal Position.

*****1343-88 BCR***

REFERENCE STANDARD RS 5-13

†ANSI/ASTM D 568-1977-Standard Test Method for Rate of Burning and/or Extent and Time of Burning of Flexible Plastics in a Vertical Position.

†308-81 BCR

REFERENCE STANDARD RS 5-14

†ANSI/ASTM D 374-1979-Standard Test Methods for Thickness of Solid Electrical Insulation.

†308-81 BCR

REFERENCE STANDARD RS 5-15
MINIMUM COVERING OF PRESTRESSING STEEL FOR VARIOUS FIRE RESISTANCE RATINGS

Type of Unit	Cross-Sectional Area[3] Sq. In.	Rating			
		1 Hour	2 Hour	3 Hour	4 Hour
Prestressed Girders, Beams, and Joists[1,2]	40 to 150	2 in.			
	150 to 300	1 1/2 in.	2 1/2 in.		
	over 300	1 1/2 in.	2 in.	3 in[4]	4 in[4]
Prestressed Slabs, Solid or Cored [1, 2]	—	1 in.	1 1/2 in.	2 in.	2 1/2 in.

Notes:

[1]Members with less covering shall be acceptable where tests show that adequate protection is provided for the required fire resistance rating.

[2]Slab thickness to resist transmission of heat shall be as for non-prestressed concrete. Unbonded tendon anchorage devices shall have 50 per cent greater covering that in the above table.

[3]In computing the cross-sectional area for joists, the area of the flange shall be added to the area of the stem, and the total width of the flange as used shall not exceed three times the average width of the stem.

[4]Adequate provisions against spalling shall be provided by means of a light reinforcement. Reinforcement spacing shall not exceed the depth of the element and shall have a 1-inch concrete covering.

* REFERENCE STANDARD RS 5-16
ACOUSTICAL TILE AND LAY-IN PANEL CEILING SUSPENSION SYSTEMS

Section 1—General

1.1 Scope.-This standard covers ceiling suspension systems used primarily to support acoustical tile or acoustical lay-in panels weighing less than four pounds per square foot, not contributing to the fire-resistance rating of a floor or roof assembly and not used for meeting the noise control requirements of the building code.

Section 2—Definitions

2.1 Where the following terms appear in this standard, they shall have the meaning herein indicated:

Backing board.-The term "backing board" shall mean a flat sheet of gypsum board to which acoustical tile is attached using adhesive, screws, staples or other suitable means (Fig. 1c).

Carrying channel.-The term "carrying channel" shall mean the three sided or "[" shaped metal sections which support the entire structural grid network (Fig. 1 A, B, C). The carrying channels are suspended by hangers from the existing structure and main runners are then attached to the channels.

Ceiling suspension system.-The term "ceiling suspension system" shall mean the entire network or grid of structural components which provides support for acoustical ceiling tile, acoustical ceiling panels, lighting fixtures, and air diffusers.

Cross runner.-The term "cross runner" shall mean the secondary or cross beams of a mechanical ceiling suspension (Fig. 1 A). The cross runners normally support only the acoustical tile. In some forms of suspension systems, however, the cross runners also provide support for other cross runners.

Hanger.-The term "hanger" shall mean the member employed to suspend the acoustical ceiling from the existing structure (wood joists, steel bar joists, steel beams, concrete slabs, etc.) (Figs. 1 A, B, C).

Main runner.-The term "main runner" shall mean the primary or main beams of the type of ceiling suspension system in (Figs. 1 A, B). The main runners

provide direct support for cross runners, and they may support lighting fixtures and air diffusers. In addition, the acoustical tile may also be directly supported by the main runners.

Nailing bar.-The term "nailing bar" or "furring bar" shall mean the continuous sheet metal strips to which a backing board is attached using either nails or screws (Fig. 1 C). The nailing bars are installed perpendicular to and supported by the carrying channels.

Spline.-The term "spline" shall mean a strip of sheet metal or fiber inserted in the kerfs of adjacent acoustical tile to form a concealed mechanical joint seal (Fig 1 B).

Wall molding.-The term "wall molding" shall mean the edge angles or channels of a mechanical ceiling suspension system which are attached to a wall (Figs. 1 A, B). The wall molding provides support for acoustical tile, and cross runners which are located at the periphery of the ceiling.

Section 3—Design

3.1 The provisions of the building code for stresses shall apply.

3.2 The hangers shall be spaced at 4'-6" or less on centers. Each hanger shall be capable of carrying all loads suspended therefrom plus an additional 200 pounds located at midspan. The midspan deflection as attested in accordance with the test method described in Section 6 of this standard or as calculated shall not exceed 1/360 of the span. The connections of the carrying channel to the hangers shall be adequate for the load supported by the carrying channel plus 200 pounds.

3.4 The main runner or nailing bar shall be capable of carrying all loads suspended therefrom. The midspan deflection as tested in accordance with the test method described in Section 6 of this standard or as calculated shall not exceed 1/360 of the span. Each connection of the main runner or nailing bar to the carrying channels shall be adequate for the load supported by the main runner plus two hundred (200) pounds.

* ***353-72BCR***

3.5 Cross runners shall be capable of carrying all loads suspended therefrom. The midspan deflection as tested in accordance with the test method described in Section 6 of this standard or as calculated shall not exceed 1/360 of the span.

3.6 Splines shall not be considered as providing nor shall be used for providing structural support for the ceiling material.

3.7 All connection devices other than bolts shall be approved by the Board of Standards and Appeals. However, they may be accepted under the code test method when test results indicating a factor of safety of four are filed in accordance with the provisions of section 27-131 of the building code.

*REFERENCE STANDARD RS 5-16
Acoustical Tile and Lay-in Panel Ceiling Suspension Systems

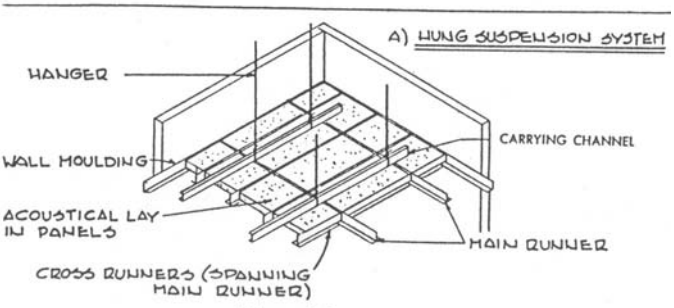


Figure 1-A

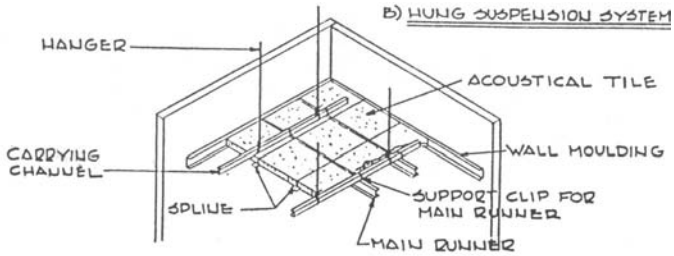


Figure 1-B

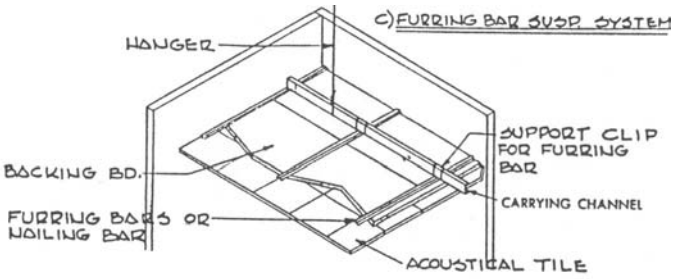


Figure 1-C

Section 4—Coatings

4.1 Protective coatings.-Component materials which oxidize or corrode when exposed to normal use environments shall be provided with protective coatings.

4.1.1 Sheet steel.-Components fabricated from sheet steel shall be given an electro-galvanized, hot dipped galvanized cadmium coating, or zinc coating.

4.1.2 Aluminum alloy.-Components fabricated from aluminum alloys shall be anodized when exposed to a corrosive atmosphere.

Section 5—Installation

5.1 Installation of components.-The components of acoustical ceiling suspension systems shall be installed in accordance with the following requirements and Figures 2A and 2B.

5.1.1 Hangers

5.1.1.1 Buildings of construction group I.-For requirements see Figs. 2A and 2B.

5.1.1.2 Buildings of construction group II.-Every other hanger supported from wood members shall be

attached by two 1/4" diameter through bolts or clinched nails. The remaining hangers shall be attached as described above or by two 1/4" diameter barbed anchor nails 2 1/4" long with oval heads. All bolts and nails shall be at least 2 in. above the bottom of the wood members.

5.1.1.3 Spacing.-Hangers for carrying channels shall be spaced at most 4'-6" on centers.

5.1.1.4 Minimum sizes and quality.-Hangers for suspending carrying channels shall be a minimum of 1/4" diameter galvanized steel rods or flat bars at least 1" x 1/8".

5.1.1.5 Use of existing hangers.-Existing hangers may not be used unless they comply, or are made to comply, with all the above provisions relating to hangers.

5.1.2 Carrying channels

5.1.2.1 Leveling requirements.-Carrying channels shall be installed so that they are level within 1/8 in. in 12 ft. leveling shall be performed with the supporting hangers taut. Local kinks or bends shall not be made in hangers as a means of leveling the carrying channels.

5.1.2.2 Attachment to hangers.-Carrying channels shall be attached to the hangers in a manner that will prevent any vertical movement or rotation.

(See Figure 2-A and 2-B)

5.1.3 Main runners

5.1.3.1 Leveling requirements.- Main runners shall be installed so that they are all level within 1/8 in. in 12 ft. Leveling shall be performed with the main runner in firm contact with the carrying channel.

5.1.3.2 Attachment to carrying channels.- Main runners shall be attached to the carrying channels in a manner that will prevent any vertical movement or rotation.

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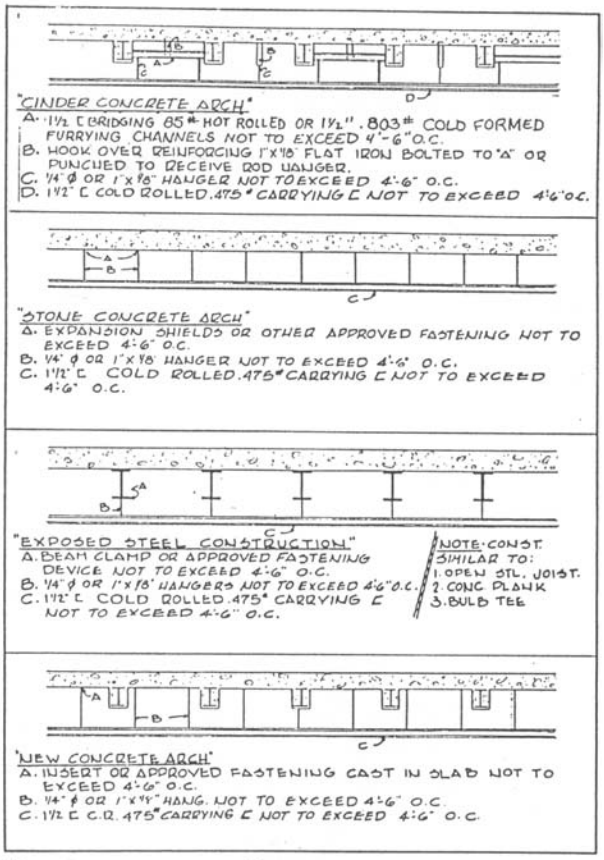
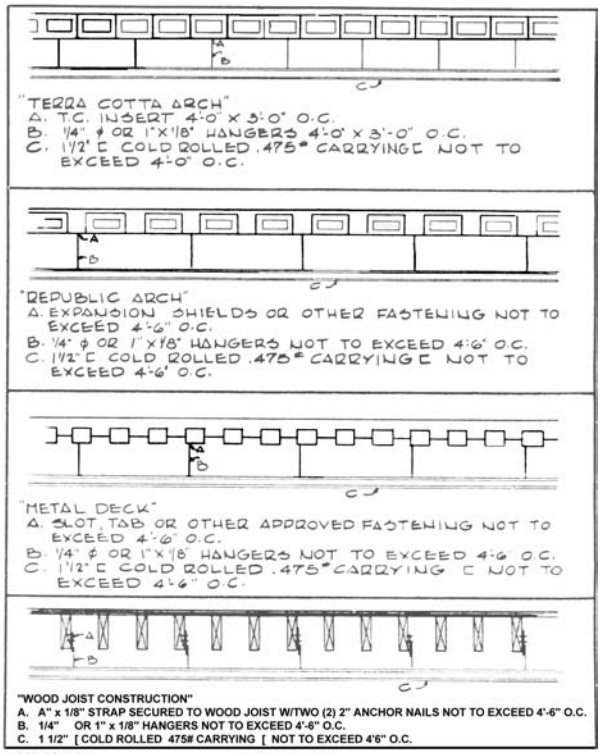


*Figure 2-A

*353-72 BCR



*353-72-BCR

*Figure 2-B

5.2 New suspended ceilings below existing suspended ceilings

5.2.1 Buildings of construction group 1.-In buildings of construction group 1 not more than one existing suspended ceiling may be retained above the new suspended ceiling. All other existing ceilings must be removed. Where an existing ceiling is retained, the new main runners shall be supported directly from the carrying channels adjacent to the hangers.

5.2.2 Buildings of construction group II.-In buildings of construction group II, all existing suspended ceilings shall be removed prior to installation of new suspended ceiling.

5.2.3 Existing hangers.-Existing hangers shall not be used for new suspended ceilings unless found to be in sound structural condition and comply with all the requirements of this standard relating to hangers.

5.3 Ceiling fixtures

5.3.1 General.-Fixtures installed in acoustical tile or lay-in panel ceilings shall be mounted in a manner that will not compromise ceiling performance. Figures 3A, 3B and 3C are to be used as a guide.

5.3.2 Maximum fixture weights.-Fixtures exceeding 80 lbs. in weight shall be supported independent of ceiling suspension system. Fixtures weighing 80 lbs. or less may be supported from the carrying channels. Fixtures weighing 50 lbs. or less may be supported from the main runners.

5.3.3 Eccentric loading.-Fixtures shall be installed so that the main runners or carrying channels will be eccentrically loaded unless suitable accessory devices (Figs. 3 A, B, C) are employed and the main runner and/or carrying channel design provides for the torsional stresses.

5.3.4 Plans.-The plans shall show the necessary details of the acoustical ceiling to satisfactorily identify the number, size, spacing, location, weights, and types of fixtures and means employed to comply with this section.

Section 6—Test Method for Determining Deflection

6.1 Introduction.-The test method outlined provides the means by which data can be secured for characterizing the structural performance of individual suspension systems. The method consists of placing structural members as beams on simple supports, and subjecting them to simulated uniformly distributed loads over their length. The loading is incrementally imposed and the performance of the structural member is obtained from observing the resulting beam deflections.

6.2 Scope.-The test method shall be used for evaluating the load deflection performance of structural members of all acoustical tile and lay-in panel suspension systems. A simple experimental facility is described which can be adjusted as required to permit testing of structural members of different sizes, having various section configurations, and on different appropriate span lengths.

Some suspension systems incorporate a locking assembly system which enhances performance by providing some continuity or load transfer capability between adjacent sections of the ceiling grid. This test method does not provide the means for making a complete evaluation of continuous beam systems, nor for assessing the continuity contribution to overall system performance. However, the method can be used for evaluating primary structural members in conjunction with secondary members which interlock, as well as with those of noninterlocking type.

6.3 Loading facility.-The loading of structural members shall be performed in a manner which closely simulates their use in suspension systems. Span distances, spacing between secondary supports, etc., shall be typical of ceiling grid designs in which the structural member is used.

6.3.1 Support frame.-A rectangular support frame having the essential features of the unit described below shall be provided.

6.3.1.1 The frame (Fig. 4) shall have the capability for length adjustment to permit testing of structural members on clear spans for a maximum of 8 ft. to a minimum of 3 ft. It shall have the capability for overall width adjustment with a maximum length of 4 ft. and a minimum length of 1 ft.

6.3.1.2 The support frame shall have sufficient stiffness so that no significant deflection occurs within the frame during load tests of suspension system structural members.

6.3.1.3 The support frame may either be ceiling mounted or floor supported.

6.3.2 Test loading.-The main runner weight shall not be used for evaluating load-deflection performance. One-half the weight of the cross runners shall be included as part of the test load.

6.3.2.1 Individual test weights appropriate for evaluating the structural member shall be provided. Loads weighing up to 1 lb. shall be provided so that their actual weight is within 0.01 lb. of their marked weight. Weights over 1 lb. shall be within 1 percent of their marked weight. Loading weights of the sizes required can be conveniently provided by weighing lead shot into cloth bags and tying them closed.

6.3.2.2 A sufficient number of weights of suitable mass shall be provided to permit evaluation of the structural member through its elastic range by loading in approximately ten equal load increments. When elastic performance of the member under test is exceeded, loading shall continue using a suitably reduced load increment until significant sectioning yielding has been produced.

6.3.2.3 A complete load increment shall be applied simulating a uniformly distributed load imposed over the entire section length before measuring the deflection of the structural member.

6.3.2.4 Provision shall be made for imposing test loads on the structural member in a symmetrical manner.

6.3.3 Deflection measurements.-The deflection of structural members shall be observed after application of each full load increment during the entre test.

6.3.3.1 The deflection of structural members being tested shall be measured with dial indicators capable of direct reading to 0.001 in.

6.3.3.2 Dial indicators shall be mounted from a separate gauge frame (Fig. 4) having three points of support. The gauge frame shall be supported from the test loading frame and be properly positioned to locate the dial stems vertically over the structural member being tested.

6.3.3.3 The dial indicators used shall have sufficient travel capability to permit the deflection performance of the structural members to be observed during the entire test without requiring resetting.

6.4 Structural members.-The manufacturer, installer, or architect or engineer, shall determine the load-deflection performance.

6.4.1 The structural members tested shall be identical to the sections used in the final system design. All cutouts, slots, etc., as exist in the system component shall be included in the sections evaluated.

6.4.2 Allowable mill variations of sheet stock thickness have a significant effect on section stiffness and load carrying ability. Consequently, load-deflection studies of structural members shall utilize sections fabricated in accordance with system manufacturers published metal thicknesses and dimensions.

6.5 Procedure.-The procedures used for evaluating performance of suspension system structural members shall utilize the general principle of following actual field installation practice wherever possible. As an example of the general procedure to be followed, the setup and testing of a primary structural member is described below.

6.5.1 Experimental setup.-In preparation for testing, the length and width of the support frame shall be adjusted to the typical grid dimensions that are established as appropriate to the evaluation of the structural member. The primary structural member shall be installed along the longitudinal centerline of the frame and supported at its end as an essentially simply supported beam (Fig. 4). Where secondary members are used, they shall be installed normal to the direction of the primary structural member and at the midpoint and quarterpoint locations along the test span length. One end of such secondary members shall be supported from the side of the test frame and at the other from the flange of the primary structural member (Fig. 4.). Clearances between ends of the secondary structural member in the test setup shall be typical of that which exists in the actual ceiling grid.

Where interlocking secondary structural members are used, they shall be assembled into the central primary structural member being tested in customary fashion and using conventional center distance spacing. The other end of the secondary member shall be simply supported from the perimeter support frame. No interlocking of the secondary member and the perimeter support frame shall be permitted.

6.5.2 Section loading.-With the structural member to be evaluated installed in the support frame, the gauge frame shall be positioned to mount the vertical displacement deflection dials directly over the test section at the midspan and quarterspan locations at which time dials are positioned to read zero (Fig. 4). The test loads shall be applied to the structural member in a manner representative of that which exists in service. For test purposes simple wire hangers shall be provided to suitably introduce the load to the section. Extending from such hangers, attachment wires, cords or lightweight chains shall be provided to permit the preweighed incremental test weights to be added as required. The weight of hangers, wires, pans, etc. shall be incorporated as part of the test load.

The test weights, simulating the weight of ceiling tile or panel, shall be applied to the structural member starting 6 in. from the end supports, and at 1 ft. intervals thereafter, always proceeding from the ends toward the center of the span in applying load. After the first uniformly distributed load increment has been applied, the midspan and quarterspan deflection of the structural member shall be measured and recorded. Loading of the structural member shall be continued in the same manner, applying successive increments of uniformly distributed load and observing deflections after each increment. Loading shall be continued until it is apparent that the test section has yielded.

The load deflection performance of secondary structural members of acoustical tile and lay-in panel ceiling systems shall be similarly determined. The units shall be set up and tested in a manner appropriate to their use in actual grid systems.

6.6 Experimental data.-A test log shall be prepared to record all pertinent data regarding the structural member being evaluated and the principal accessory items used. Such information as the following shall be provided:

Manufacturer's name.

Suspension system identification.

Test section identification.

Description of section: Measured overall height and thickness of basic stock, type of material, section weight, etc.

Test span length.

Spacing of lateral supports.

Identification of accessory items and how used.

Sketch of experimental setup, giving dimensions of grid, dial gauge locations, load spacing, etc.

Record of the incrementally applied uniformly distributed loads and the resultant midspan and quarterspan deflection and the resultant midspan and quarterspan deflection measurements for each loading.

6.7 Section performance.-The performance of structural members of suspension systems shall be represented by individual load-deflection plots obtained from tests performed at each different span length used in service.

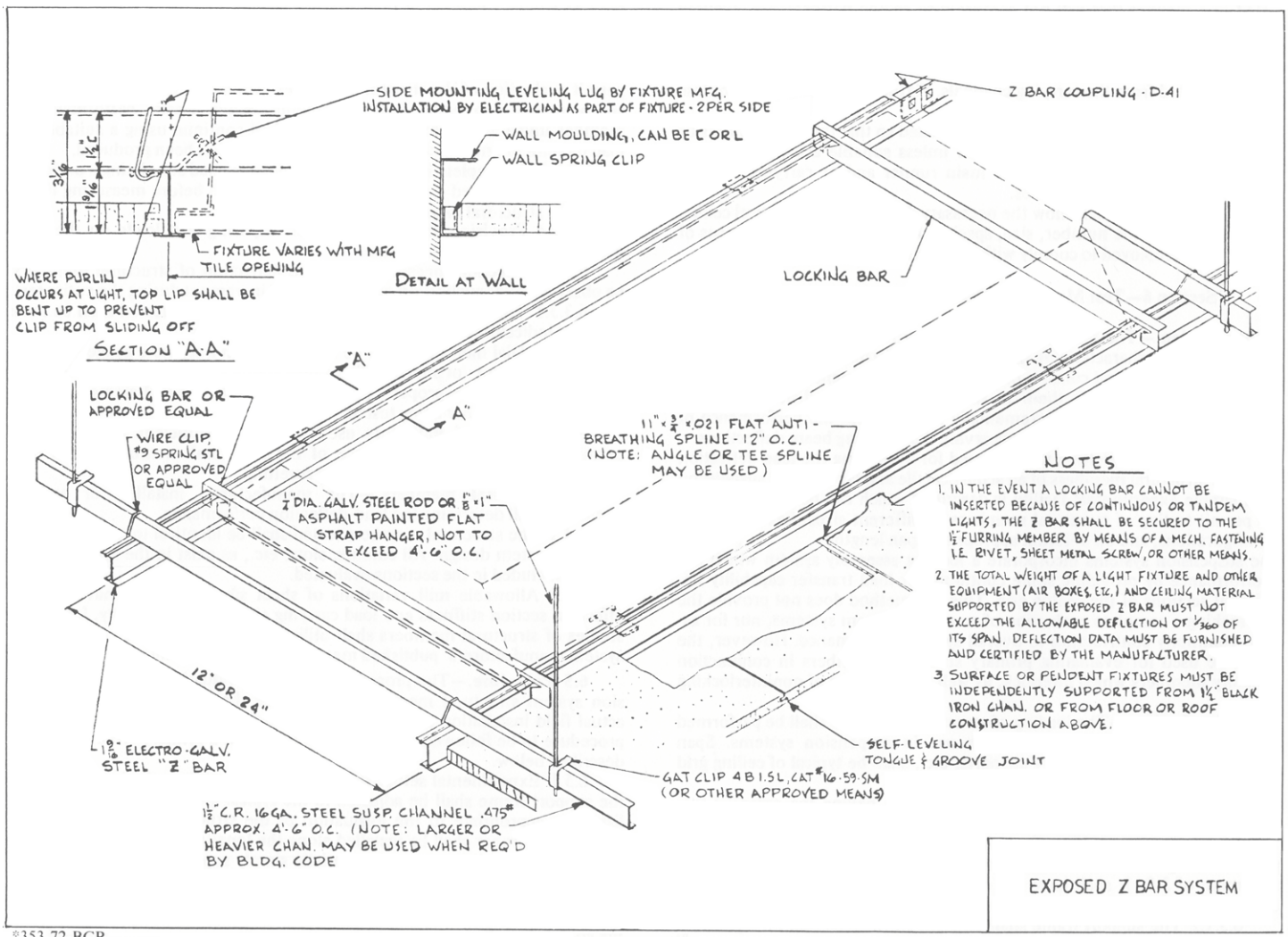
6.7.2 The results of replicate tests of three individual sections each tested on the same span length, shall be plotted and averaged to obtain a characteristic load-deflection curve for the structural member.

6.7.3 The average load-deflection curve shall be used to establish the maximum uniformly distributed load which the structural member can successfully sustain prior to reaching the deflection limit of 3/360th of the span length in inches (Fig. 5.).

6.7.4 The load-deflection curve shall be used to establish the maximum loading intensity beyond which the structural member begins to yield.

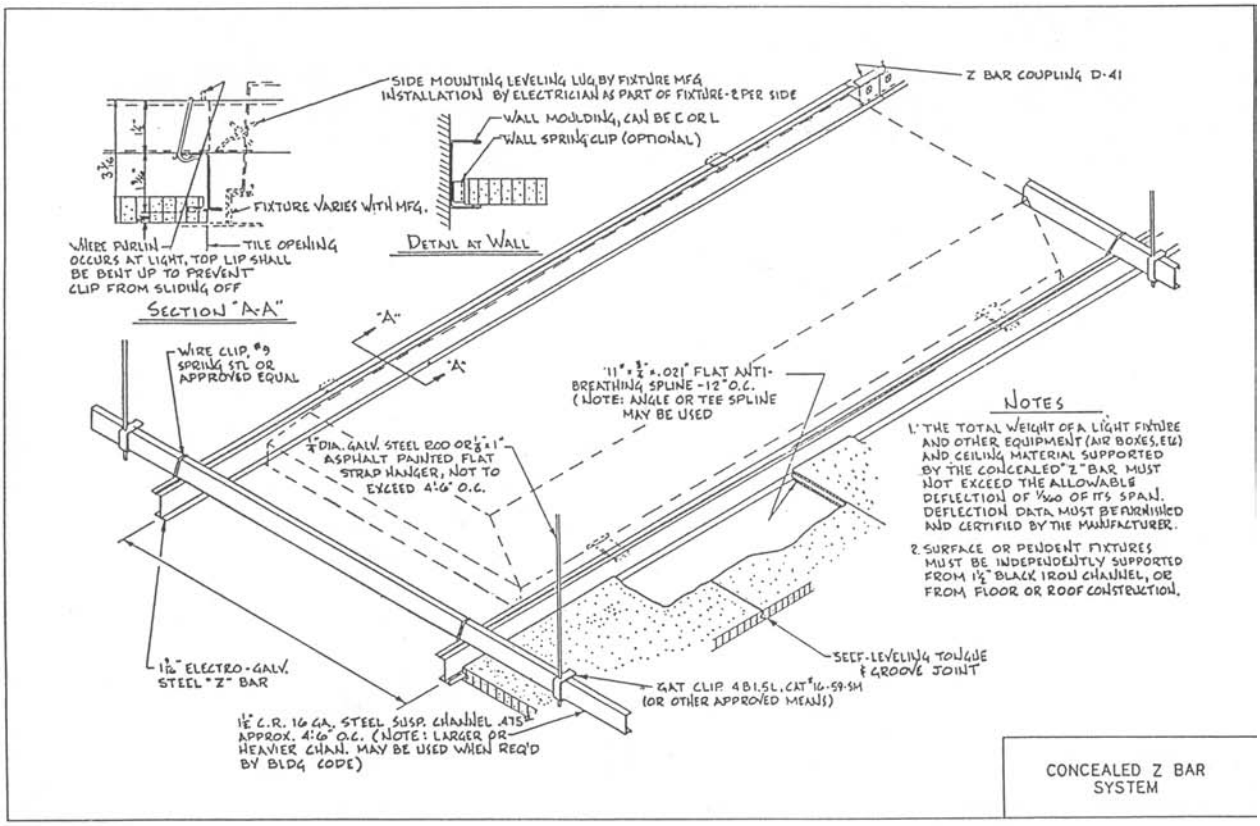
6.8 Suspension system performance.-Published performance data for individual suspension systems shall be developed by the manufacturer upon the basis of results obtained from load-deflection tests of its principal structural members. Where a ceiling design incorporates a number of components, each of which experiences some deflection as used in the system, the additive nature of these displacements shall be recognized in setting an allowable system deflection criteria.

353-72 BCR



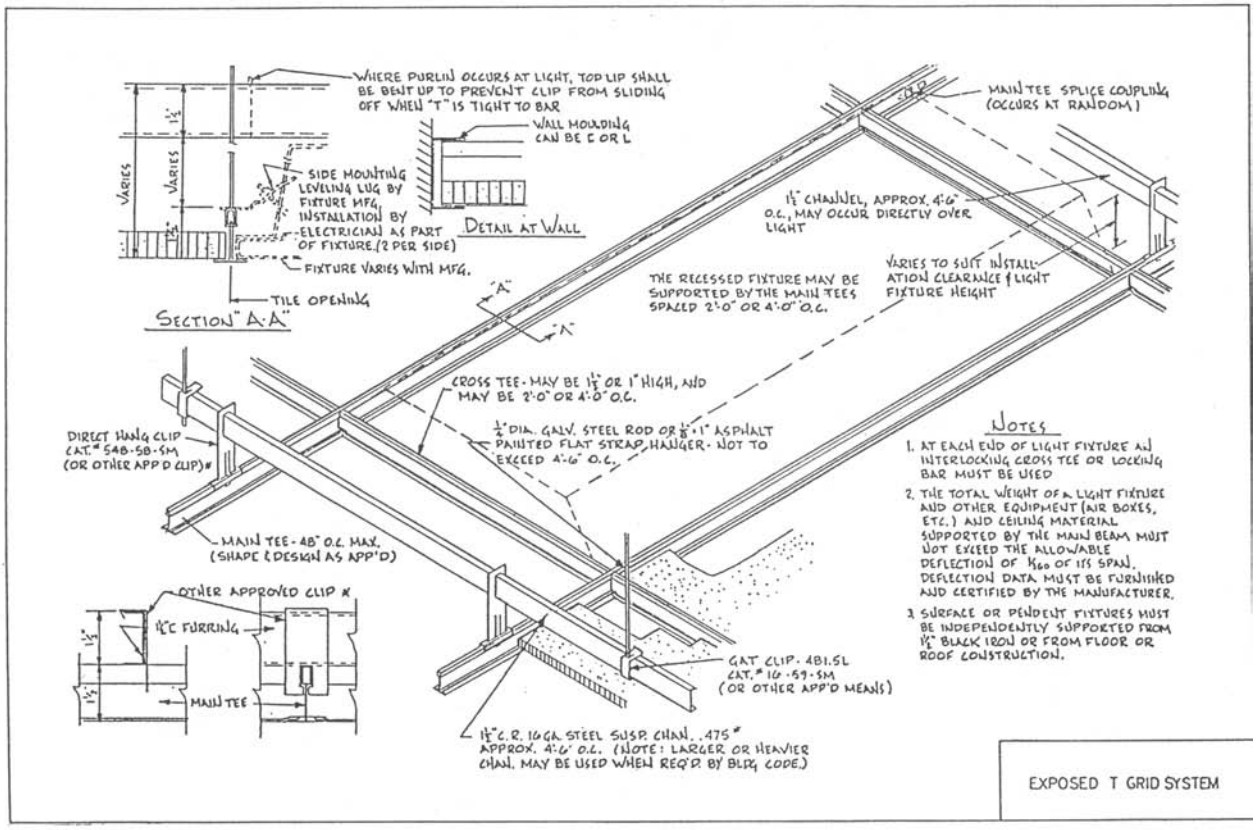
*353-72-BCR

***Figure 3-A**



*353-72 BCR

*Figure 3-B



*353-72 BCR

*Figure 3-C

***
REFERENCE STANDARD RS 5-17
Standards for the Installation of Smoke Shafts

1. Smoke shafts shall be constructed as required for shafts in section 27-344.
2. Shafts may serve more than a single compartment on a given floor but in all cases shall have at least one wall common to or abutting the compartments served, or each added compartment shall be connected to the shaft by an individual duct with the same fire resistive rating as required for the smoke shaft.
3. The size of the shaft shall be uniform throughout and of such dimensions as to provide 60 air changes per hour in the largest compartment served and at a velocity of not less than 1,600 fpm nor more than 4,000 fpm.
4. Openings into the shaft shall be provided at each floor and shall be of a size to permit the number of air changes prescribed in 3 above at a maximum air velocity of 3,000 fpm. Such openings shall be located as high as possible and designed to vent the entire compartment. They shall be equipped with an opening protective or closure having a fire protective rating complying with table 5-3 (§27-342). Such closures shall be automatically openable individually upon the activation of a detector located at the return shaft of the compartment and upon the activation of any other detectors installed within the compartment.
5. An approved, automatically controlled, exhaust fan of such capacity as to exhaust 60 air changes per hour from the largest compartment served by the shaft and capable of maintaining not less than a 2-inch negative static pressure at its inlet under flow conditions shall be installed in the shaft.

a. The fan shall be located so that the bottom of the fan inlet is located not less than 3 feet above the top of the automatic protective closure in the highest fire floor served by the shaft.
b. The shaft shall terminate at least 3 feet above the roof level where it penetrates the roof and shall be provided with a protective weather closure which can be opened manually from the outside.
c. When the closure in the required opening on a floor opens, this shall automatically open the weather closure and start the fan.
d. The shaft exhaust fan shall also be controlled from a local start-stop station at the fan, and at either the mechanical control center or the fire command station.
e. The fan shall be operated from circuits that are separate from the general lighting and power circuits, either taken off ahead of the main switch or connected to an emergency power source when such source is provided.

*********Local Law 5-1973***

**
REFERENCE STANDARD RS 5-18
Standards for the Pressurization of Stairs

1. Each stair shall be provided with air in such amount as to satisfy the following requirements:

a. The air shall be mechanically supplied at one or more levels.
b. Each fan shall supply 100 percent outdoor air.
c. Any opening shall be provided with an intake closure complying with the requirements for opening protectives of Title 27, Chapter 1 of the administrative code with an approved smoke detector located between the outside air intake and the supply fan. Upon the activation of this detector, only the system serviced by such detector shall shut down.
d. The maximum velocity of air supplied at the openings into the stair shall not exceed 3,000 fpm at its point of discharge within the stair enclosure.
e. Intake closures shall open and the supply fan or fans shall start upon the activation of any detector in the building except that called for in paragraph c above. However, only the fan system associated with the activation of the detector shall shut down.

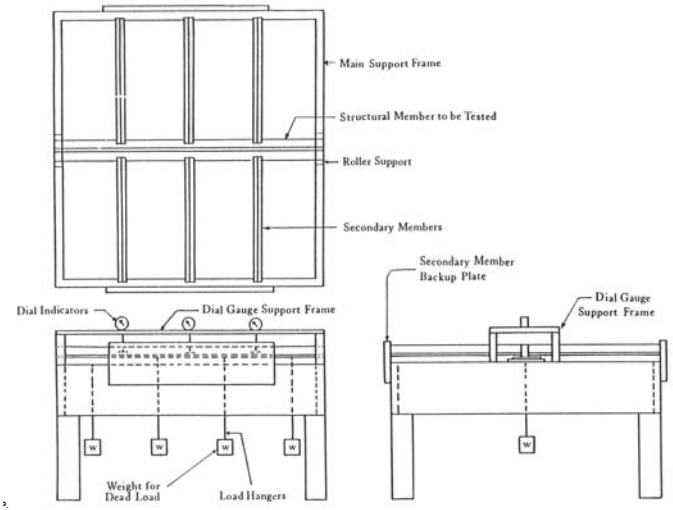


Figure 4 Schematic Diagram of Experimental Loading Facility
353-72 BCR

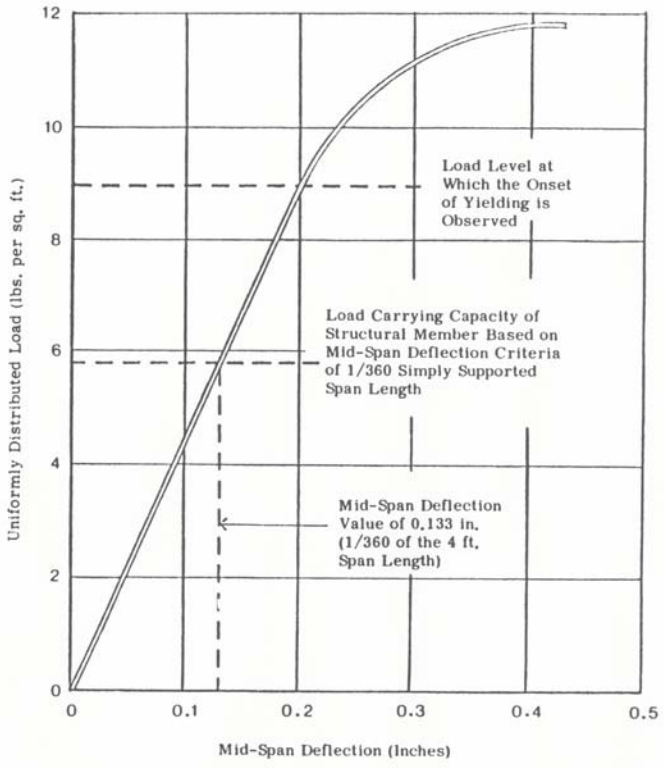


Figure 5. Applied Load vs. Mid-span Deflection for a Hypothetical Structural Member Having a Simply Supported Span Length of 4 Ft.
****** 353-72 BCR***

2. An approved, automatically controlled louver and weather closure open to the exterior at the highest floor served by the stair shall be installed in the case of a fan or fans producing an upward flow of air, or at the furthest point or points from the fan or fans when more than one fan is used, or at the lower end of the stair venting to outside if a single fan is located at the upper end of the shaft. The size shall be not less than 2 sq. in. per 100 cu. ft. of total shaft volume. Any existing fixed ventilating opening may be included in meeting this requirement. The louver shall be normally closed and shall open automatically by fusible link or other approved device when subjected to a temperature of 135°F. or to a rapid rise in temperature at a rate of 15 to 20°F. per minute, and the louver shall also be remotely operable from the fire command center. Such louver shall also satisfy the requirements of subdivision d of section 27-344.

3. The total supply of air introduced into each stair shall be equal to and not less than the algebraic sum of 24,000 cfm plus 200 cfm per story of stair.

4. Other operating requirements.

a. All weather closures may normally be in closed position.

b. The air supply fans shall provide positive pressure differential between the stair shaft and each floor at a maximum of 0.4 inches of water column whether doors are open or closed. Minimum positive pressure differentials between the stair shafts and each floor of 0.10 inches of water column when all doors are closed, and no less than 0.050 inches of water column when any three doors are open, shall be maintained. As an alternative to the maintenance of 0.050 inches of water column, a minimum average velocity of 400 feet per minute, measured in the plane of any open door, with any three doors open, shall be maintained.

c. Excess positive pressure within the stair closure may be relieved at one or more levels through protected openings in the stair enclosure in the following manner:

(1) Each opening shall be provided with an approved adjustable barometric backdraft damper so arranged as to permit air flow out of the stair enclosure only and shall be adjusted to close if the pressure differential is less than 0.05 inches of water column, and to remain open if the pressure differential is greater than 0.4 inches of water column.

(2) Each opening shall be protected with two 1 1/2-hour fire dampers arranged in series, each with fusible links rated to melt at 125°F.

(3) Acceptable alternative systems for the relief of excessive positive pressure other than through the protective openings in the stair enclosure may be installed, subject to the approval of the Commissioner.

(4) Spill ducts located entirely within the stair enclosure and utilizing barometric dampers may be installed as an acceptable alternative system referred to in sub-paragraph 3 above.

d. Air supply fans shall also be controlled from a local start-stop station at the fans and from the fire command station. In addition, fan controls may also be located at the mechanical control center. These controls shall over-ride the automatic detection shut-down.

e. The fans shall be operated from circuits that are separate from the general lighting and power circuits taken off ahead of the main switch and connected to an emergency power source when such source is provided.

*** 5. Full system testing shall be required for each installation and shall be subject to controlled inspection. Pressure or velocity measurements shall be taken for the purpose of determining whether the desired control of smoke will be established and reports of such measurements shall be made and copies thereof filed with the department as provided in Section 27-132 for controlled inspection. A full system test shall be performed after any construction and/or modifications to the stair enclosures altering the volume of such enclosures.

*** 6. Operational tests of the stair pressurization systems shall be conducted every twelve months by building maintenance personnel and witnessed by the Fire Safety Director or by a Registered Architect or Professional Engineer to ensure that each system functions. The owner or his authorized representative shall retain at the premises a record of each test performed for Building and Fire Departments' use.

*** 7. Operational tests shall determine that initiating devices such as fire alarms, sprinkler alarms, elevator recall, manual switches, and smoke detectors other than those designed to cause the shutdown of outside air intake systems, will cause the stair pressurization systems' intake dampers to open and fans to start.

**** Local Law 84-1979***

****DOB 8-26-98***

* REFERENCE STANDARD RS 5-19

ASTM E814-1983 Standard Method of Fire Tests of Through-Penetration Fire Stops.

****Local Law 16-1984; 1343-88 BCR***

* REFERENCE STANDARD RS 5-20

Standards for the flammability of Carpets

DOC FF1-1970 Methane Pill Test.

ASTM E648-1988 Standard Test Method for Critical Radiant Flux of Floor Covering Systems Using a Radiant Heat Source.

ASTM E662-1988 Standard Test Method for Specific Optical Density of Smoke Generated by Solid Materials.

****Local Law 16-1984; 1343-88 BCR***

*** REFERENCE STANDARD RS 5-21

UBC Std. 26-9-1997 Method of Test for the Evaluation of Flammability Characteristics of Exterior, NonloadBearing Wall Assemblies Containing Combustible Components Using the Intermediate-Scale,Multistory Test Apparatus.

***DOB 3-4-01; Local Law 13-1987; 1343-88 BCR

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REFERENCE STANDARD RS-7
SPECIAL USES AND OCCUPANCIES

* LIST OF REFERENCED NATIONAL STANDARDS

NFiPA No. 701 Standard Methods of Fire Tests for Flame-Resistant Textiles and Films 1977
888-80 BCR

* REFERENCE STANDARD RS 7-1

Deleted.
888-80 BCR

** REFERENCE STANDARD RS 7-2
RESTRICTED LOCATIONS FOR PROJECTING SIGNS

Borough of Manhattan -
No permanent projecting sign shall be erected on any building on:
5th Avenue between Washington Square north and 110th Street,
34th Street between Park Avenue and 7th Avenue,
Madison Avenue between 23d Street and 96th Street,
57th Street between Lexington Avenue and Broadway,
Vanderbilt Avenue between 42d Street and 47th Street,
Park Avenue between 32d Street and 40th Street,
Park Avenue between 45th Street and 96th Street,
33rd Street between Lexington Avenue and 5th Avenue,
35th through 41st Streets between Lexington Avenue and 5th Avenue,
43rd through 56th Streets between Lexington Avenue and 5th Avenue,
58th Street between Lexington Avenue and 5th Avenue,
60th Street between Lexington Avenue and 5th Avenue,
Nassau Street between Wall Street and Frankfort Street, or
John Street between Broadway and William Street.
No permanent illuminated projecting sign shall be erected on any building on:
72rd Street between Central Park West and Riverside Drive.
Borough of Brooklyn-
No permanent projecting sign shall be erected on any building on:
Fulton Street between Flatbush Avenue and Joralemon Street and Willoughby Street.
No permanent illuminated projecting sign shall be erected on any building on:
Fulton Street between Flatbush Avenue and Prospect Street and Henry Street,
Washington Street between Myrtle Avenue and Prospect Street,
Court Street between Fulton Street and Livingston Street,
Pierrepont Street between Fulton Street and Clinton Street,
Montague Street between Court Street and Clinton Street,
Remsen Street between Court Street and Clinton Street,
Joralemon Street between Court Street and Clinton Street.
82-88 BCR

* REFERENCE STANDARD RS 7-3

NFiPA No. 701-1977 - Standard Methods of Fire Tests for Flame-Resistant Textiles and Films.
888-80 BCR*

* REFERENCE STANDARD RS 7-4

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*888-80 BCR

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REFERENCE STANDARD RS-8
PLACES OF ASSEMBLY

* LIST OF REFERENCED NATIONAL STANDARDS

ANSI/SMPTE 223M	Specifications for Motion-Picture Film-Safety Film	1985
ANSI PH 1.25	Specifications for Photography (Film-) Safety Photographic Film.....	1984
ANSI/NFiPA 40	Cellulose Nitrate Motion-Picture Film	1982

739-86 BCR; 260-86 BCR; 745-80 BCR

** REFERENCE STANDARD RS 8-1

ANSI/SMPTE 223M-1985-Specifications for Motion-Picture Film-Safety Film.
ANSI PH 1.25-1984-Specifications for Photography (Film-) Safety Photographic Film.
ANSI/NFiPA 40-1982-Cellulose Nitrate Motion-Picture Film.

***739-86 BCR; 260-86 BCR*

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REFERENCE STANDARD RS 9 LOADS
* LIST OF REFERENCED NATIONAL STANDARDS

**AASHTO HB-13	Standard Specifications for Highway Bridges, Thirteenth Edition and 1984, 1985 and 1986 Interim Specifications…… 1983
AREA	Specifications for Steel Railway Bridges, Chapter 15, Steel Structures, Manual for Railway Engineering……...1987
*UBC SECTION 2312	Earthquake Regulations With Accumulative Supplement……..1990

***135-88BCR**
****** Local Law 17-1995.**

REFERENCE STANDARD RS 9-1
MINIMUM UNIT DESIGN DEAD LOADS FOR STRUCTURAL DESIGN PURPOSES

	Weight (psf)
WALLS AND PARTITIONS (unplastered).—	
Clay brick—	
High absorption (per 4 in. wythe)……..	33
Low absorption (per 4 in. wythe)……..	45
Concrete brick—	
4 in……..	46
4 in. lightweight aggregate……	33
8 in……..	89
8 in. lightweight aggregate……..……..	68
12 in……..……	130
12 in. lightweight aggregate……..……	98
Sand-lime brick—	
per 4 in. wythe……..……	38
Solid concrete block—	
4 in……	40
4 in. lightweight aggregate……..……..	27
8 in……	67
8 in. lightweight aggregate……..……..	48
12 in……..……..	108
12 in. lightweight aggregate……..……	72
Hollow concrete block—	
4 in……	30
4 in. lightweight aggregate……..……..	20
8 in……	53
8 in. lightweight aggregate……..……..	38
12 in……..……..	85
12 in. lightweight aggregate……..……	55
Solid gypsum block—	
(per in. thickness)…… ……	6
Hollow gypsum block—	
2 in……	9.5
4 in……	12.5
6 in……	18.5
Clay, tile, load bearing—	
4 in……	24
8 in……	42
12 in……..……..	58
Clay tile, non-load bearing—	
2 in……	11
4 in……	18
8 in……	34
12 in……..……..	46
Facing tile—	
2 in……	16
6 in……	29
8 in……	41
Split terra cotta furring tile—	
1 1/2 in…..……	8
2 in……	10
3 in……	12
Glass block—	
4 in……	20
PLASTER PARTITIONS—	
2 in. thick, solid cement plaster on metal lath……..……	25
2 in. thick, solid gypsum plaster on metal lath……..……	18
Metal studs, any lath, and 3/4 in. gypsum plaster, both sides……..……	18
Wood studs, any lath, and 3/4 in. gypsum plaster, both sides……	19

EQUIVALENT UNIFORM PARTITION LOADS

Partition Weight (plf)	Equivalent Uniform Load (psf) (To be added to floor dead and live loads)
50 or less……	0
51 to 100……	6
101 to 200……..	12
201 to 350……..	20
Greater than 350……	20 plus a concentrated live load of the weight in excess of 350 plf..

	Weight (psf)
PLASTER ON MASONRY SURFACES.—	
Gypsum, with sand aggregate, per in…….	8.5
Gypsum, with lightweight aggregate, per in……..	4
Gypsum, with wood fibers, per in……..	6.5
Cement, with sand aggregate, per in……..	10
Cement, with lightweight aggregate, per in……...	5
FLOOR FINISHES (Excluding fill or base).—	
Resilient flooring (asphalt tile, linoleum, etc.)……..	2
Asphalt block, 2 in…….	24
Wood block, 3 in……	10
Hardwood flooring, 7/8 in…….	4
Softwood sub-flooring, per in……	3
Plywood sub-flooring, 1/2 in……..……	1.5
Ceramic or quarry tile, 1 in……	12
Terrazzo, 1 in……	12
Slate, 1 in……	15
Cement, 1 in……...	12
FLOOR FILL—	
Cinders, no cement, per in……..	5
Cinders, with cement, per in……...	9
Sand, per in. ……...	8

FLOORS — WOOD JOIST CONSTRUCTION
(With double layer wood flooring - no ceiling)

	Total Weight (psf)	
**Joint Sizes (in.)	12 in. Joist Spacing	16 in. Joist Spacing
2 x 6	6	5
2 x 8	6	6
2 x 10	7	6
2 x 12	8	7
3 x 6	7	6
3 x 8	8	7
3 x 10	9	8
3 x 12	11	9
3 x 14	12	10

***** As enacted but "joist" probably intended.***

	Weight (psf)
CEILINGS: (including suspension system).—	
Plaster on tile or concrete—see "Plaster on Masonry Surfaces"	
Suspended metal lath and gypsum plaster, 3/4 in. ……..	9
Suspended metal lath and cement plaster, 3/4 in..……	11
Suspended acoustical tile…….	2
ROOF AND WALL COVERINGS—	
Clay roofing tiles……..	14
Built-up roofing:	
3-ply……..	1.5
5-ply……..	2.5
Gravel, 1/4 to 5/8 in……..	4
Slag, 1/4 to 5/8 in……..	3
Crushed rock, 1/4 to 5/8 in……...	4.5
Aluminum sheet:	
0.050 in. thick, flat……	0.72
0.032 in. thick, corrugated……	0.55
0.032 in. thick, V-Beam……	0.58
Steel, 20 gauge, protected V-Beam……..	2.3
Tin sheet, 28 gauge……..	1

Asbestos-cement, corrugated roofing, 3/8 in	4
Fiberboard, 1/2 in	0.8
Gypsum sheathing, ½ in	2
Wood sheathing, per in	3
Wood shingles, in place	3
Asphalt shingles, in place	6
Asbestos-cement shingles, in place	4
Cement tile, 3/8 in. in place	16
Stucco (cement), per in	10
Slate, 3/16 in. in place	7
Slate, 1/4 in. in place	10
Skylight, metal frame, 3/8 in. wire glass	10
MISCELLANEOUS MATERIALS—	
Glass—	
singlestrength	1.2
double strength	1.6
plate, wired or structured, 1/8 in	1.6
insulating, double 1/8 in. plates w/air space	3.5
insulating, double 1/4 in. plates w/air space	7.1
Insulation—	
fiber glass, per in	1.5
foam glass, per in	0.8
Urethane, 1 in	1.0
2 in	1.2
cork, per in	1.0
vegetable fiber boards, per in	1.5
bats and blankets, per in	0.5
vermiculite, loose fill—0.6 pcf	
expanded polystyrene—1.0 pcf	
Marble, interior, per in	14
Plastic, acrylic, 1/4 in	1.5
Slate, per in	15
Asphaltic concrete	144
Cast-stone masonry (cement, stone, sand)	144
Cinder fill	57
Concrete, plain (other than expanded aggregates)—	
cinder	108
slag	132
stone (including gravel)	144
Reinforced concrete—	
Add 6 pcf to unit weights shown for plain concrete	
Cork, compressed	14
Earth	100
Masonry, ashlar—	
granite	165
limestone (crystalline)	165
limestone (oolitic)	135
marble	173
sandstone (bluestone)	144
Masonry, rubble w/ mortar—	
granite	153
limestone (crystalline)	147
limestone (oolitic)	138
marble	156
sandstone (bluestone)	137
Masonry, dry rubble—	
Granite	130
limestone (oolitic)	125
marble	130
Sandstone (bluestone)	110
Terra cotta, architectural—	
voids filled	120
voids empty	72
Timber, seasoned—	
pine, Douglas fir, and similar species	35
oak, elm, and similar species	45

*As enacted but “gage” probably intended.

REFERENCE STANDARD RS 9-2
MINIMUM REQUIREMENTS FOR UNIFORMLY DISTRIBUTED AND CONCENTRATED LIVE LOADS UNIFORMLY DISTRIBUTED LIVE LOADS

Occupancy or Use of Spaces	Live load (psf)
Assembly spaces	
Drill rooms……..	150
Assembly spaces having fixed seats, including auditorium areas in churches, schools, theaters, courthouses, lodges, lecture halls, and similar buildings……	60[a]
Dance floors, restaurant serving and dining areas, mess halls, museums, gymnasiums, skating rinks, promenades, and roof gardens…….	100
Private assembly spaces, including conference rooms and card rooms……..	50
Stadium, grandstand, and reviewing stand seating areas……	100
Other assembly spaces……	See note [d]
Balconies	
Exterior……	See note [b]
Interior (as required for occupancy or use)	
Mezzanines (as required for occupancy or use)	
Catwalks	30
Corridors	
(1) Corridors in schools…….	100
(2) Corridors, elevators, and stairs in office buildings (other than first floor lobbies)……...	75
(3) Corridors serving first floor elevator lobbies, auditoriums, and similar areas of public assembly…...	100
(4) Other (same as that required for the occupancy of the area being served)……	100
Elevator machine rooms (see Reference Standard RS 18)	
Equipment rooms, including pump rooms, generator rooms, transformer vaults, and areas for switch gear, ventilating, air conditioning, and similar electrical and mechanical equipment……	75
Fire escapes	
Multiple dwellings……..	40
Others……..	100
Hospitals	
Operating rooms, laboratories, and service areas……	60
Rooms and wards……	40
Personnel areas……	40
Other (as required for occupancy or use of the area)	
Libraries	
Reading and study room areas……...	60
Stack areas (see Storage)	
Other (as required for occupancy or use of the area)	
Lobbies and similar areas…….	100
Manufacturing and repair areas……	100
Marquees……..	60
Office areas (not including record storage areas)…….	50
Parking areas	
For passenger cars, provided that the clear headroom at the entrance does not exceed 8 ft……...	50
Penal institutions	
Cell blocks……..	40
Other (as required for occupancy or use of the area)	
Plaza areas (open) accessible to the public (including landscaped portions)	100
Recreational areas	
Bowling alleys (alleys only)……	40
Poolrooms……...	75
Other (see assembly areas)	
Residential areas	
Dormitories	
Non-partitioned……..	60
Partitioned……..	40
Dwellings	
Multi-family units	
Apartments ……..	40
Public rooms (as required for occupancy or use)	
One- and two-family units	
First floor……..	40

Upper floors and habitable attics……..	30
Uninhabitable attics……..	20[c]
Hotels	
Guest rooms……..	40
Public rooms (as required for occupancy or use)	
Schools	
Classrooms……..	40
Shops (automotive and press shops)…….	100
Shops (others)…….	60
Other (as required for occupancy or use of the area)	
Stairs and exit passages (same as Fire escapes)	
Storage	
Light……	100
Warehouse……..	150
Stores	
Wholesale sales……..	100
Retail sales	
Basement and first floor……	100
Upper floors……..	75
Telephone equipment rooms……	80
Theaters	
Dressing rooms……	40
Projection room……...	100
Stage floor……...	150
Toilet areas……...	40

*** Notes:**

[a] Uniform load shall be applied to the gross floor area.

[b] 150 per cent of live load on adjoining occupied area, but not more than 100 psf.

[c] Live load need be applied to joists or to bottom chords of trusses or trussed rafters only in those portions of attic space having a clear height of 42 in. or more between joist and rafter in conventional rafter construction; and between bottom chord and any other member in trussed or trussed rafter construction. However, joists or the bottom chords of trusses or trussed rafters shall be designed to sustain the imposed dead load or 10 psf, whichever is greater, uniformly distributed over the entire span.

[d] Live loads for assembly spaces other than those described in this reference standard shall be determined from the occupant load requirements as established by section C26-601.2 using the formula 100/net floor area per occupant but shall not be less than 50 psf nor more than 100 psf.

****Local Law 39-1972***

CONCENTRATED LIVE LOADS

Use or Location	Load (lbs.)[a]	Remarks
Elevator machine room floor		See Reference Standard RS 18
Gratings, checkered plates and similar metal decks	200 (on area of 1.0 sq. in.)	Nonconcurrent with uniform live load.
Floor registers and similar floor insets	250 (on area of 2 ft. x 2 ft.)	Nonconcurrent with uniform live load.
Parking areas—passenger vehicles accommodating nine passengers, or less	2,500 (on area of 20 sq. in.) For slab or deck design	The concentrated load may be assumed to represent the reaction of a jack placed under one end of the vehicle. Omit uniform live load in area (6 ft. x 9 ft.) representing one half the vehicle, adjacent to the point of load concentration.
	1,500 (each wheel)	To be used in lieu of uniform live load in stalls of mechanized garages where there is no slab or deck.
Parking areas—trucks, buses and passenger vehicles accommodating more than nine passengers	150 per cent of maximum wheel load with vehicle loaded (on area of 20 sq. in.)	Same as for Parking areas—passenger vehicles accommodating nine passengers, or less.
Floor of office areas	2,000	Nonconcurrent with uniform live load.
Resident and multiple dwellings	200 (on area of 4.0 sq. in.)	Nonconcurrent with uniform live load.
Scuttles and skylights ribs	200	Nonconcurrent with uniform live load.
Steel joists—for each individual joist	800 (for trussed joists apply at a panel point)	Nonconcurrent with uniform live load.
Roofs	250 (on area of 2 ft. x 2 ft.)	Nonconcurrent with uniform live load. Not applicable for awnings, canopies, and similar constructions where access by persons is difficult and not intended.
Stair and fire escape treads	300 (on area 1 ft. wide by depth of the tread and spaced at 3 ft. center-to-center)	Nonconcurrent with uniform live load.
Boiler rooms	3,000	The concentrated load of 3,000 lbs. may be assumed to represent the weight of minor items of equipment (pumps, etc.) in temporary locations during installation. In addition provision shall be made for supporting the weight of the empty boiler at pertinent locations on the floor to provide for replacement of the boiler.

Note:-

[a] Except when otherwise indicated loads are assumed to be applied over an area 2 1/2 ft. x 2 1/2 ft.

UNIFORMLY DISTRIBUTED AND CONCENTRATED LIVE LOADS FOR CONSTRUCTION ELEVATOR AND MATERIAL HOIST TOWER BACK STRUCTURES

DEFINITION:
Back Structure: A system of landing platforms and/or supports designed to transmit construction elevator or material hoist tower loads into the building structure.
WALKWAY PLATFORMS
{L} Live load
1. Uniformly Distributed: 100 psf defined by the area enclosed by handrail, or by the gross area of the walkway if handrails are not provided.
2. Concentrated: 40% of the highest rated capacity of the hoist cars, non-concurrently with the uniform load,acting on a 4 square inch area anywhere within the boundary of handrail, or within the gross area of the walkway if handrails are not provided.
FRAME STRUCTURE
{L} Live load values determined by detailed analysis performed by the design professional acting on any combination of differing floor levels equal to the number of hoist cars plus one but not less than 50 psf or the carrying capacity of the elevator cars and hoist cars, whichever is greater.
SNOW LOAD
{S} 20 psf acting on the top two floors of gross plan area of the back structure.
ICE LOAD
{I} 40% of the dead load or a detailed analysis performed by the design professional based on the equivalent of one-quarter inch ice.
DYNAMIC LOADING
{d} Lateral force and moment resulting from the starting and stopping of the hoist cars. When more than one car is in operation, the dynamic loading shall reflect the most critical combination. The Dynamic loading is to be considered basic loading. Impact loading need not be considered.
DEAD LOADS {D}– REFER TO RS 9-1
WIND LOADS {W} & {w}– REFER TO RS 9-5
DESIGN LOAD COMBINATIONS
For Allowable Stress Design, factors used in loading combinations conform to section 27-594 of the Building Code. The back structures shall be designed for the critical combination of:
1. {D} + {L} + {d}
2. 0.67 ({D} + {W})
3. 0.75 ({D} + {L} + {d} + {w})
4. 0.67 ({D} + {I} + {w} + {S})

Load factors for LRFD designs shall adhere to the LRFD recommendations and guidelines contained in the reference standard for the material used.
DOB 9-2-01

* REFERENCE STANDARD RS 9-3

AASHTO HB-13-1983-Standard Specifications for Highway Bridges, Thirteenth Edition, and 1984, 1985 and 1986 Interim Specifications.
135-88 BCR

* REFERENCE STANDARD RS 9-4

AREA-1987-Specifications for Steel Railway Bridges, Chapter 15, Steel Structures, Manual for Railway Engineering.
135-88 BCR

REFERENCE STANDARD RS 9-5
MINIMUM DESIGN WIND PRESSURES

1. DESIGN WIND PRESSURES ON STRUCTURAL FRAMES.-Minimum design pressures due to wind acting on vertical surfaces shall be in accordance with table RS 9-5.1, and minimum design pressures acting normal to horizontal or inclined surfaces shall be in accordance with table RS 9-5.2. The occurrence of the pressures on vertical, horizontal, and inclined surfaces of the building shall be considered as simultaneous.

TABLE RS 9-5.1 DESIGN WIND PRESSURES ON VERTICAL SURFACES

Height zone (ft. above curb level)	Design Wind Pressure on Vertical Surfaces (psf of projected solid surface)	
	Structural Frame	Panels Glass
0-50 (signs and similar constructions of shallow depth only)…….	15	—
0-100……	20	30
101-300……	25	30
301-600……	30	35
601-1000…….	35	40
Over 1000……	40	40

TABLE RS 9-5.2 DESIGN WIND PRESSURES ON HORIZONTAL AND INCLINED SURFACES

Roof Slope	Design Wind Pressure Normal to Surface
30 degrees or less	Either pressure or suction equal to 40 per cent of the values in Table RS 9-5.1 over the entire roof area
More than 30 degrees	Windward slope—pressure equal to 60 per cent of values in Table RS 9-5.1. Leeward slope—suction equal to 40 per cent of values in Table RS 9-5.1.

2. WALL ELEMENTS.-For design of mullions, muntins, girts, panels, and other wall elements (including their fastenings), other than glass panels, the wind pressure acting normal to wall surfaces shall be 30 psf or a 20 psf suction, for all height zones up to 500 ft. These values shall be deemed to include allowance for gust pressures. For height zones over 500 ft., the applicable design pressures shall be specifically investigated, but shall not be less than the values indicated in table RS 9-5.1.

3. ROOF ELEMENTS.-The wind pressures acting on purlins, roofing, and other roof elements (including their fastenings) supporting small contributory areas of wind presentment shall be 1 1/2 times the values given in table RS 9-5.2.

4. OTHER BUILDING ELEMENTS.-Minimum wind pressures to be used in the design of other building elements shall be the values in table RS 9-5.1 multiplied by the following shape factors given in table RS 9-5.3.

TABLE RS 9-5.3 SHAPE FACTORS

Construction	Shape Factor
Signs (and their supports), or portions thereof, having 70 per cent or more of solid surface……	1.5
Signs (and their supports), or portions thereof, having less than 70 per cent of solid surface……	2.0
Tanks, cooling towers, and similar constructions……..	1.5
Upright, circular cylindrical surfaces……..	0.7
Square and rectangular chimneys….	1.5

For special structures such as curved and saw-toothed roofs, guys and cables, open trussed structures, parallel solid girders, and spheres, the design wind pressure shall be determined on the basis of recognized engineering analysis or by test.

5. EAVES AND CORNICES.-Eaves, cornices, and overhanging elements of the building shall be designed for upward pressures of twice the values given in table RS 9-5.1.

6. WIND LOAD BY MODEL TEST.-In lieu of the design wind pressures established in sections 1 and 2 of this reference standard, and subject to review and approval of the commissioner, design wind pressures may be approximated from suitably conducted model tests. The tests shall be predicated on a basic wind velocity of 80 mph at the 30 ft. level, and shall simulate and include all factors involved in considerations of wind pressure, including pressure and suction effects, shape factors, functional effects, gusts, and internal pressures and suctions.

**7. CONSTRUCTION ELEVATOR AND MATERIAL HOIST TOWER BACK STRUCTURES DEFINITIONS:

Back Structure: A system of landing platforms and/or supports designed to transmit construction elevator or material hoist tower loads into the building structure.

Inland: As defined by ASCE 7-98, exposure Category A

Coastal: As defined by ASCE 7-98, exposure Category D

WIND LOADS

{W} Storm Wind Load: equivalent to 25 yr. Mean recurrence wind per ASCE 7-98 standard, taking into account the exposure terrain, height zone, shielding

coefficients, etc. In lieu of detailed analysis by the design professional, the following values may be used:

Design storm wind (25 yr. Mean Recurrence)
Wind pressure loading (in psf) on gross cross sectional area of the back structure

Zone/ Elevation	0-50 feet	50-150 feet	150-400 feet	400-700 feet	>700 feet
Inland	14.4	20.7	25.6	33.8	40
Coastal	14.4	25.6	43.2	65.5	69.6

Unless the structure is fully enclosed in curtain walls, the following wind loading shall be analyzed:

1. Parallel to the building façade per the above table.
2. Normal to the building façade at one-half the value of the above table.

Wind directions shall be considered to be non-concurrent.
{w} In-Service wind: a 35 mph (wind pressure of 3.13 psf) from any direction acting on the back structure.
***** DOB 9-2-01***

* REFERENCE STANDARD RS 9-6 EARTHQUAKE LOADS

UBC SECTION 2312-1990
Earthquake Regulations with Accumulative Supplement
MODIFICATIONS- The provisions of UBC Section 2312 shall be subject to the following modifications. The subdivisions, paragraphs, subparagraphs and items are from this section.
Subdivision (a) General.
Paragraph 1. Minimum seismic design.
Delete this paragraph and substitute the following:
"The following types of construction shall, at a minimum, be designed and constructed to resist the effects of seismic ground motions as provided in this section:
new structures on new foundations;
new structures on existing foundations; and
enlargements in and of themselves on new foundations.
Buildings classified in New York City occupancy group J-3 and not more than three stories in height need not conform to the provisions of this section.
The Commissioner may require that the following types of construction be designed and constructed to incorporate safety measures as necessary to provide safety against the effects of seismic ground motions at least equivalent to that provided in a structure to which the provisions of the section are applicable:
new buildings classified in occupancy group J-3 and which are three stories or less in height; and
enlargements in and of themselves where the costs of such enlargement exceeds sixty percent of the value of the building.
Pursuant to section 27-191 of the code the Commissioner shall have the authority to reject an application for a building permit which fails to comply with the requirements of this section.
Subdivision (b) Definitions.
Delete the definitions of the following terms and substitute the following new definitions:
"ECCENTRIC BRACED FRAME (EBF) is a steel-braced frame designed in conformance with reference standard RS 10-5C.
ESSENTIAL FACILITIES are those structures which are necessary for emergency operations subsequent to a natural disaster.
STORY DRIFT is the displacement of one level relative to the level above or below, including translational and torsional deflections."
Add the following definition before "SHEAR WALL":
"REINFORCED MASONRY SHEAR WALL is that form of masonry wall construction in which reinforcement acting in conjunction with masonry is used to resist lateral forces parallel to the wall and which is designed using reinforcement in conformance with Chapter 7 of reference standard RS 10-2."
Delete the definitions of the five frames under the SPACE FRAME paragraph and substitute the following stand-alone definitions:
"INTERMEDIATE MOMENT-RESISTING FRAME (IMRF) is a concrete frame designed in accordance with the requirements of Chapters 1 through 20 and Sections 21.1, 21.2 and 21.9 of reference standard RS 10-3.
MOMENT-RESISTING FRAME is a frame in which members and joints are capable of resisting forces primarily by flexure.
ORDINARY MOMENT-RESISTING FRAME (OMRF) is a moment-resisting frame conforming to the requirements of Chapters 1 through 20 of reference standard RS 10-3 or reference standards RS 10-5A and RS 10-5C but not meeting special detailing requirements for ductile behavior.
SPECIAL MOMENT-RESISTING FRAME (SMRF) is a moment-resisting frame conforming to reference standards RS 10-3 or RS 10-5A and RS 10-5C and specially detailed to provide ductile behavior by complying with the requirements of Chapters 1 through 20 and Sections 21.1 through 21.8 of reference standards RS 10-3 or reference standards RS 10-5A and RS 10-5C.
VERTICAL LOAD-CARRYING FRAME is a frame designed to carry all vertical gravity loads."
Subdivision (d) Criteria Selection.
Paragraph 1. Basis for design.
Delete the word "zoning" in the first sentence and delete the last sentence.
Paragraph 2. Seismic Zones.
Delete the title and paragraph and substitute the following:

"2. Seismic Zone. The seismic zone factor, Z, for buildings, structures and portions thereof in New York City shall be 0.15. The seismic zone factor is the effective zero period acceleration for S_1 type rock."

Paragraph 3. Site geology and soil characteristics.

Delete the title and the paragraph and substitute the following:

"3. Site geology, soil characteristics and foundations.

A. General.

Soil profile type and site coefficient, S, shall be established in accordance with Table No. 23-J.

B. Liquefaction.

(i) Soils of classes 7-65, 8-65, 10-65 and non-cohesive class 11-65 below the ground water table and less than fifty feet below the ground surface shall be considered to have potential for liquefaction.

(ii) The potential for liquefaction of level ground shall be determined on the basis of Standard Penetration Resistance (N) in accordance with Figure No. 4;

Category A: Soil shall be considered liquefiable.

Category B: Liquefaction is possible.

Soil shall be considered liquefiable for structures of Occupancy Categories I, II and III of Table No.23-K.

Category C: Liquefaction is unlikely need not to be considered in design.

At any site the highest category of liquefaction potential shall apply to the most critical strata or substrata.

(iii) Liquefiable soils shall be considered to have no passive (lateral) resistance or bearing capacity value during an earthquake. An analysis shall be submitted by an engineer which demonstrates, subject to the approval of the Commissioner, that the proposed construction is safe against liquefaction effects on the soil.

(iv) Where liquefiable soils are present in sloped ground or over sloped non liquefiable substrata and where lateral displacement is possible, a stability analysis shall be submitted by an engineer which demonstrates, subject to the approval of the Commissioner, that the proposed construction is safe against failure of the soil.

C. Foundation Plates and Sills.

Foundation plates or sills shall be bolted to the foundation or foundation wall with not less than one-half inch nominal diameter steel bolts embedded at seven inches into the concrete or masonry and spaced not more than six feet apart. There shall be a minimum of two bolts per piece with one bolt located within twelve inches of each end of each piece. A properly sized nut and washer shall be tightened on each bolt to the plate.

D. Foundation Interconnection of Pile Caps and Caissons.

Individual pile caps and caissons of every structure subjected to seismic forces shall be interconnected by ties. Such ties shall be capable of resisting, in tension or compression, a minimum horizontal force equal to the product of ZI/4 and the larger column vertical load at the end of each tie.

Exception: Other approved effective methods of foundation interconnection may be used where it can be demonstrated by an analysis that equivalent restraint and relative displacement can be provided."

Paragraph 5, subparagraph C, Irregular structures.

Delete the entire last sentence in item (i).

Paragraph 6, subparagraph E, Dual system.

Delete items (ii) and (iii) and substitute the following:

"(ii) Resistance to lateral load is provided by shear walls or braced frames and a moment-resisting frame (SMRF, IMRF or OMRF). The moment-resisting frames shall be designed to independently resist at least 25 percent of the design base shear. The shear walls or braced frames shall be designed to resist at least 75 percent of the cumulative story shear at every level. Overturning effects may be distributed in accordance with item (iii) below.

(iii) The two systems shall be designed to resist the total design base shear in proportion to their relative rigidities considering the interaction of the dual system at all levels."

Paragraph 7. Height limits.

Delete this paragraph.

Paragraph 8. Selection of lateral force procedure.

Delete paragraph 8 and substitute the following:

"8. Selection of lateral force procedure. All structures shall be designed using either the static lateral force procedure of Section 2312 (e) or using the dynamic lateral force procedure of Section 2312(f). In addition, the dynamic lateral force procedure shall be considered, but is not required, for the design of the following:

A. Structures over 400 feet in height.

B. Irregular structures.

C. Structures located on Soil Profile Type S_4 which have a period greater than 1 second. The analysis should include the effects of soils at the site and should conform to Section 2312(f)2."

Paragraph 9, subparagraph C, Irregular features.

Delete this subparagraph and substitute the following:

"C. Irregular features. Only structures having either vertical irregularities Type D or E as defined in Table No. 23-M or horizontal irregularities Type D or E as defined in Table No. 23-N shall be designed to meet the additional requirements of those sections referenced in the tables."

Paragraph 10. Alternate procedures.

Add at the end of the paragraph the words "when such procedures are consistent with this standard and subject to the approval of the Commissioner".

Subdivision (e) Minimum Design Lateral Forces and Related Effects.

Paragraph 1. General, subparagraph A.

Add the words "parking structures" before the word "storage" in the first sentence.

Paragraph 1. General, subparagraph C.

Delete this subparagraph.
Paragraph 2, subparagraph A, Design base shear.
Change the value for the minimum ratio of C/R_W shown at the end of this subparagraph to "0.050".
Paragraph 2, subparagraph B, Structure period.
Delete the values in item (i) for C_t and substitute the following:
"C_t = 0.035 for concrete and steel moment-resisting frames.
C_t = 0.030 for eccentric braced frames.
C_t = 0.030 for dual systems where the building height exceeds 400 feet or 0.020 for heights
less than 160 feet and varies linearly from 0.020 to 0.030 for building heights from 160 to 400 feet.
C_t = 0.020 for all other structures."
Delete the sentence immediately after "C_t = 0.020 for all other structures" and substitute the following:
"Alternately, the value of T for structures with concrete or masonry shear walls may be taken as $0.1(h_n)$ ¾ √Ac."
Paragraph 3, subparagraph C, Combinations along different axes.
Delete this subparagraph.
Paragraph 6. Horizontal torsional moments.
Delete the fourth paragraph starting with words "Where torsional irregularity exists" and ending with the words "considered for design."
Paragraph 7, Overturning, subparagraph B.
Delete the words "Seismic Zones 3 and 4" at the beginning of this subparagraph.
Delete item (iii) and substitute the following:
"(iii) Such columns shall meet the detailing or member limitations of reference standard RS 10-3 for concrete and reference standard RS 10-5C for steel structures."
Paragraph 7, subparagraph C.
Delete this subparagraph and substitute the following:
"C. For regular buildings, the force F_t may be omitted when determining the overturning moment to be resisted at the foundation-soil interface."
Paragraph 8. Story drift limitation.
Change the value for the minimum ratio of C/R_w shown at the end of this paragraph to "0.050".
Paragraph 9. P-delta effects.
Delete the last sentence of this paragraph.
Paragraph 10. Vertical component of seismic forces.
Delete this paragraph in its entirety and substitute the following:
"10. Vertical component of seismic forces. Horizontal cantilever components shall be designed for a net upward force of 0.05 W_p."
Subdivision (f) Dynamic lateral force procedure.
Paragraph 2. Ground motion.
Add the following at the end of subparagraph A.:
"For soil type S_4 profile, see B. below."
Add the following at the end of subparagraph B.:
"The design of all structures located on a soil of type S_4 profile shall be based on properly substantiated site-specific spectra."
Paragraph 5, subparagraph C, Scaling of results.
Add after the word "procedures" in the first sentence, the words "including the appropriate Importance Factor, I,".
Delete item (i) and substitute the following:
"(i) The base shear shall be increased to the following percentage of the value determined from the procedures of Section 2312 (e), including consideration of the minimum value of C/R_w, except that the coefficient C, for a period T greater than 3 seconds, may be calculated as 1.80 S/T:
(a) 100 percent for irregular buildings; or
(b) 90 percent for regular buildings, except that base shear shall not be less than 80 percent of that determined from Section 2312 (e) using the period, T, calculated from Method A."
Paragraph 5, subparagraph D, Directional effects.
Delete the words "and prestressed elements" in the second sentence and delete the word "Alternately" at the start of the third sentence.
Paragraph 5, subparagraph F, Dual systems.
Delete this subparagraph and substitute the following:
"F. Dual systems. Where the lateral forces are resisted by a dual system, as defined in Section 2312(d)6E above, the combined system shall be capable of resisting the base shear determined in accordance with this section. The moment-resisting frame, shear walls and braced frames shall conform to Section 2312(d)6E. The moment-resisting frame may be analyzed using either the procedures of Section 2312(e)4 or those of Section 2312(f)5."
Paragraph 6. Time history analysis.
Add the following words at the end of the sentence: "and the results shall be scaled in accordance with Section 2312(f)5C".
Subdivision (h) Detailed Systems Design Requirements.
Paragraph 1. General.
Delete the words "Chapters 24 through 28" in the fourth sentence of the first paragraph and insert the words "reference standard RS 10".
Delete the words "in Seismic Zones 2, 3 and 4" in the second and fourth paragraphs.
Paragraph 2, subparagraph A, General.
Delete the words "Chapters 24 through 27" at the end of this subparagraph and insert the words "reference standard RS 10".
Paragraph 2, subparagraph C, Connections.
Delete this subparagraph.
Paragraph 2, subparagraph D, Deformation compatibility.
Delete the words "to the reinforcing steel" from the last sentence.
Paragraph 2, subparagraph G, Concrete frames.
Delete this subparagraph and substitute the following:

"G. Concrete frames. Concrete frames required by design to be part of the lateral force resisting system shall, at a minimum, be intermediate moment-resisting frames, except as noted in Table 23-0."
Paragraph 2, subparagraph H, Anchorage of concrete or masonry walls.
Delete the words "Section 2310" in the fifth line and insert the words "reference standards RS 9-6, 10-1B and 10-2".
Paragraph 2, subparagraph I, Diaphragms.
Delete items (iv), (v) and (vi).
Paragraph 2, subparagraph J, Framing below the base.
Delete the words "Chapters 26 and 27" in the third line and insert the words "reference standards RS 10-3 and RS 10-5C".
Paragraph 2, subparagraph K, Building separations.
Delete this subparagraph and substitute the following:
"K. Building Separations. All structures shall be separated from adjoining structures. Separation due to seismic forces shall allow for 1 inch displacement for each 50 feet of total building height. Smaller separation may be permitted when the effects of pounding can be accommodated without collapse of the building."
Subdivision (i) Nonbuilding Structures.
Paragraph 4. Other nonbuilding structures.
Delete in the first sentence of item (iii) the word "national" and insert the word "reference", and delete the words "seismic zones and" in the paragraph following item (iii).
Subdivision (j) Earthquake-recording Instrumentations.
Delete this subdivision.
Table No. 23-I, Seismic Zone Factor Z.
Delete this table and substitute the following new table:

TABLE NO. 23-I
SEISMIC ZONE FACTOR Z

ZONE	NEW YORK CITY
Z	0.15

Table No. 23-J, Site Coefficients.
Delete this table and notes and substitute the following new table and notes:

TABLE NO. 23-J
SITE COEFFICIENTS

TYPE	DESCRIPTIONS	FACTOR
S_o	A profile of Rock materials of class 1-65 TO 3-65	0.67
S_1	A soil profile with either: (a) Soft Rock (4-65) or Hardpan (5-65) or similar material characterized by shear-wave velocity greater than 2500 feet per second, or (b) Medium Compact to Compact Sands (7-65) and Gravels (6-65) or Hard Clays (9-65), where the soil depth is less than 100 feet.	1.0
S_2	A soil profile with Medium Compact to Compact Sands (7-65) and Gravels (6-65) or Hard Clays (9-65), where the soil depth exceeds 100 feet.	1.2
S_3	A total depth of overburden of 75 feet or more and containing more than 20 feet of Soft to Medium Clays (9-65) or Loose Sands (7-65, 8-65) and Silts (10-65), but not more than 40 feet of Soft Clay or Loose Sands and Silts.	1.5
S_4	A soil profile containing more than 40 feet of Soft Clays (9-65) or Loose Sands (7-65, 8-65), Silts (10-65) or Uncontrolled Fills (11-65), where the shear-wave velocity is less than 500 feet per second.	2.5

Notes:

1. The site S Type and correspondings S Factor shall be established from properly substantiated geotechnical data with the classes of materials being defined in accordance with Section 27-675 (C26-1103.1) of the administrative code of the City of New York.

2. The soil profile considered in determining the S Type shall be the soil on which the structure foundations bear or in which pile caps are embedded and all underlying soil materials.

3. Soil density/consistency referred to in the table should be based on standard penetration test blow counts (N-values) and taken as: (a) for sands, loose - where N is less than 10 blows per foot, medium compact - where N is between 10 and 30, and compact - where N is greater than 30 blows per foot; and (b) for clays, soft - where N is less than 4 blows per foot, medium - where N is between 4 and 8, stiff to very stiff - where N is between 8 and 30, and hard - where N is greater than 30 blows per foot.

4. When determining the type of soil profile for profile descriptions that fall somewhere in between those provided in the above table, the S Type with the larger S factor shall be used.

5. For Loose Sands, Silts or Uncontrolled Fills below the ground water table, the potential for liquefaction shall be evaluated by the provisions of Section 2312(d)3.

Table No. 23-K, Occupancy Categories.

Add the words "Buildings for schools through secondary or day-care centers - capacity more than 250 students" below the words "Fire and police stations" in the Essential Facilities category, and delete those words from within the Special Occupancy Structure Category.

Add in item III Special Occupancy Structure to the words, "All structures with occupancy > 5000 persons", the words "excluding Occupancy Group E buildings".

Table No. 23-0, Structural Systems.
Delete this table and notes and substitute the following new Table No. 23-0 and notes.

TABLE NO. 23-O
STRUCTURAL SYSTEMS

BASIC STRUCTURAL SYSTEM	LATERAL LOAD-RESISTING SYSTEM DESCRIPTION	R_w
A. Bearing Wall System	1. Light-framed walls with shear panels	
	a. Plywood walls for structures three stories or less	8
	b. All other light-framed walls	6
	2. Shear Walls	
	a. Concrete	6
	b. Reinforced masonry	5
	3. Light steel-framed bearing walls with tension-only bracing	4
	4. Braced frames where bracing carries gravity load	
	a. Steel	6
	b. Concrete	4
	c. Heavy timber	4
B. Building Frame System	1. Steel eccentric braced frame (EBF)	10
	2. Light-framed walls with shear panels	
	a. Plywood walls for structures three-stories or less	9
	b. All other light-framed walls	7
	3. Shear Walls	
	a. Concrete	8
	b. Reinforced masonry	6
	4. Concentric braced frames	
	a. Steel	8
	b. Concrete	8
	c. Heavy timber	8
C. Moment-Resisting Frame System	1. Special moment-resisting frames (SMRF)	
	a. Steel	12
	b. Concrete	12
	2. Concrete intermediate moment-resisting frames (IMRF)	8
	3. Ordinary moment-resisting frames (OMRF)	
	a. Steel	6
	b. Concrete [4]	4
D. Dual System	1. Shear Walls	
	a. Concrete with SMRF	12
	b. Concrete with Steel OMRF	6
	c. Concrete with concrete IMRF	9
	d. Concrete with concrete OMRF	5
	e. Reinforced masonry with SMRF	8
	f. Reinforced masonry with steel OMRF	6
	g. Reinforced masonry with concrete IMRF	7
	2. Steel eccentric braced frame	
	a. With steel SMRF	12
	b. With steel OMRF	6
	3. Concentric braced frames	
	a. Steel with steel SMRF	10
	b. Steel with steel OMRF	6
	c. Concrete with concrete SMRF	9
	d. Concrete with concrete IMRF	6

Notes:

1. Basic structural systems are defined in Section 2312(d)6.
2. See Section 2312(e)3 for combinations of structural systems.
3. See Sections 2312(d)8C and 2312(d)9B for undefined systems.
4. Prohibited with S_3 or S_4 soil profiles or where the height exceeds 160 feet.

Table No. 23-P, Horizontal Force Factor C_p.
Delete this table and notes and substitute the following new Table No. 23-P and notes:

TABLE NO. 23-P
HORIZONTAL FORCE FACTOR C_P[1]

ELEMENTS OF STRUCTURES, NONSTRUCTURAL COMPONENTS AND EQUIPMENT	VALUE OF C_p
I. Part of Portion of Structure	
1. Walls, including the following:	
a. Unbraced (cantilevered) parapets.	2.00
b. Other exterior walls above street grade[2].	0.75
c. All interior bearing walls.	0.75
d. All interior nonbearing walls and partitions around vertical exits, including offsets and exit passageways.	0.75
e. Nonbearing partitions and masonry walls in areas of public assembly > 300 people.	0.75
f. All interior nonbearing walls and partitions made of masonry in Occupancy I, II and III.	0.50
g. Masonry or concrete fences at grade over 10 feet high.	0.75
2. Penthouses (defined in article 2 of subchapter 2 of chapter 1 of title 27 of the building code) except where framed by an extension of the building frame.	0.75
3. Connections for prefabricated structural floor and roof elements other than walls (see above) with force applied at center of gravity.	
4. Diaphragms[3].	
II. Nonstructural Components	
1. a. Exterior ornamentation and appendages including cornices, ornamental statuaries or similar pieces of ornamentation.	2.00
b. Interior ornamentation and appendages in areas of public assembly including cornices, ornamental statuaries or similar pieces of ornamentation.	2.00
2. Chimneys, stacks, trussed towers and tanks on legs.	
a. Supported on or projecting as an unbraced cantilever above the roof more than one-half its total height.	2.00
b. All others, including those supported below the roof with unbraced projection above the roof less than one-half its height, or braced or guyed to the structural frame at or above its center of mass.	0.75
3. Exterior signs and billboards.	2.00
III. Equipment and Machinery[4].	
1. Tanks and vessels (including contents), including support systems and anchorage.	0.75

Notes:

1 See Section 2312(g)2 for additional requirements for determining C_p for nonrigid equipment or for items supported at or below grade.
2 See Section 2312(h)2D(iii) and Section 2313(g)2.
3 See Section 2312(h)2I.
4 Equipment and machinery include such items as pumps for fire sprinklers, motors and switch gears for sprinkler pumps, transformers and other equipment related to life-safety including control panels, major conduit ducting and piping serving such equipment and machinery.

Figure No. 3, Normalized Response Spectra Shapes.

Delete the Figure No. 3 and insert the new Figure 3 and Table No. 23-R.

TABLE NO. 23-R
SPECTRAL ACCELERATION IN FRACTION OF G 5% DAMPING

T-SEC	S_0	S_1	S_2	S_3
.01	0.150	0.150	0.150	0.150
.02	0.150	0.150	0.150	0.150
.05	0.375	0.283	0.262	0.244
.075	0.375	0.375	0.336	0.303
.090	0.375	0.375	0.375	0.334
.112	0.375	0.375	0.375	0.375
.267	0.375	0.375	0.375	0.375
.40	0.250	0.375	0.375	0.375
.48	0.208	0.313	0.375	0.375
.60	0.167	0.250	0.300	0.375
1.00	0.100	0.150	0.180	0.225
2.00	0.050	0.075	0.090	0.113
3.00	0.033	0.050	0.060	0.075

Note: This table presents acceleration (g) versus natural period (seconds) to facilitate the presentation of spectra in log-log form.
Local Law 17-1995.

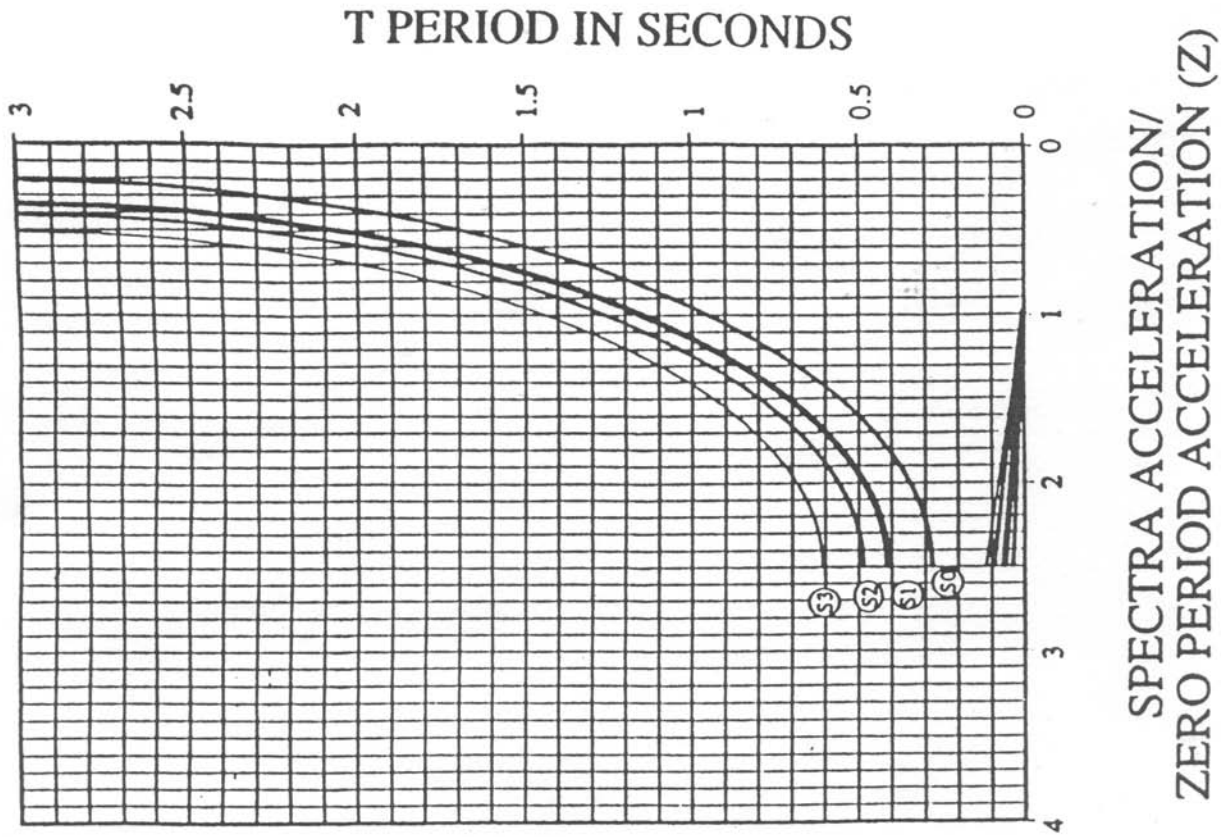
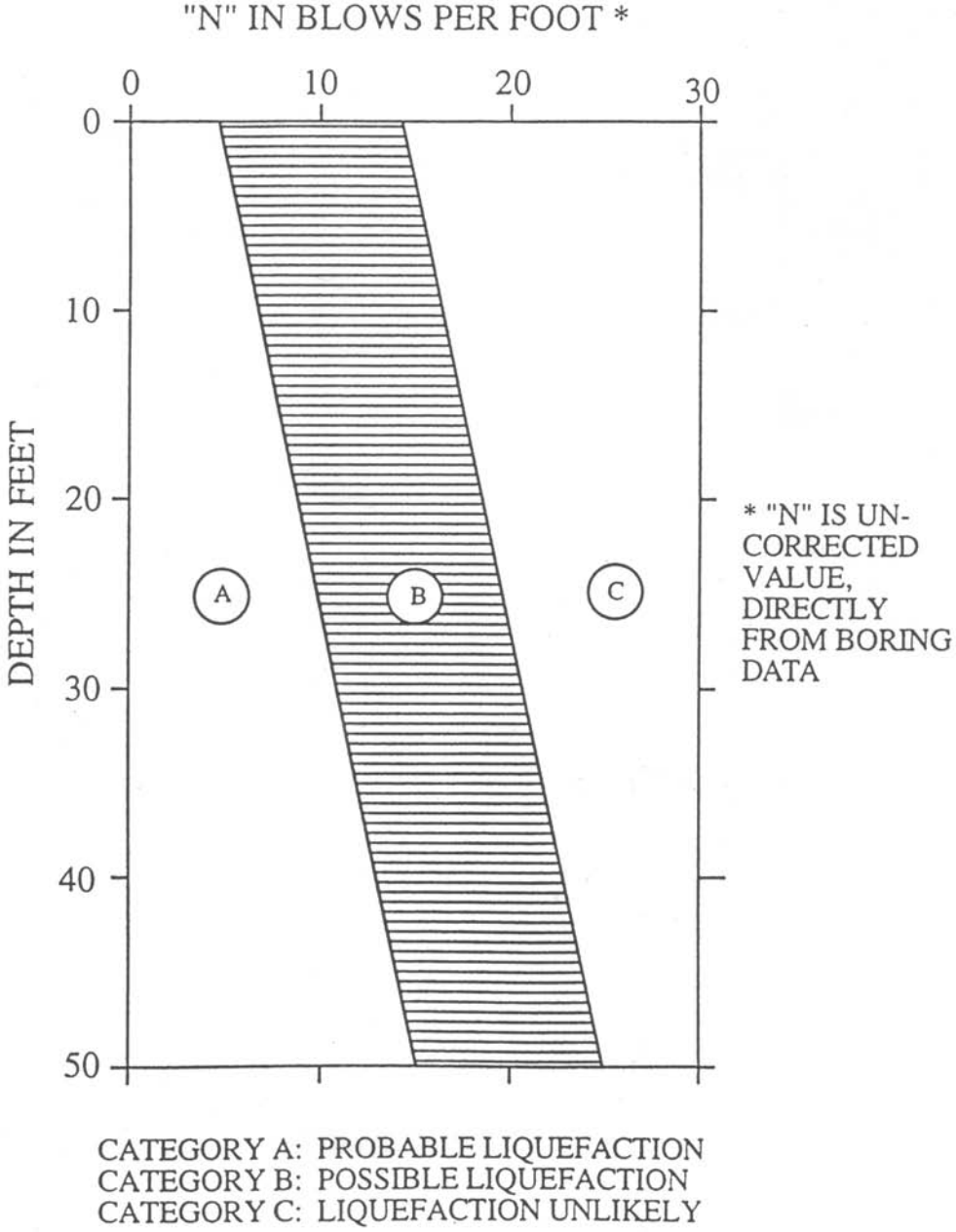


FIGURE NO. 3
NORMALIZED RESPONSE SPECTRA
5% DAMPING

FIGURE NO. 4



CATEGORY A: PROBABLE LIQUEFACTION
CATEGORY B: POSSIBLE LIQUEFACTION
CATEGORY C: LIQUEFACTION UNLIKELY

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REFERENCE STANDARD RS-10
STRUCTURAL WORK
* LIST OF REFERENCED NATIONAL STANDARDS

ANSI-A41.2	Building Code Requirements for Reinforced Masonry as Modified	1960
ANSI/ACI-318	Building Code Requirements for Reinforced Concrete (with Modifications)	1983
ACI-525	Minimum Requirements for Thin Section Precast Concrete Construction as Modified	1963
***AISC Steel Specification ASD	Specification for Structural Steel Buildings, Allowable Stress Design and Plastic Design, June 1, 1993	1993
***AISC Steel Specification LRFD	Load and Resistance Factor Design Specification for Structural Steel Buildings, Effective December 1, 1993	1993
RCSCEF/AISC	Specifications for Structural Joints Using ASTM A325 or A490 Bolts. Approved November 13, 1985	1985
AISI	Specification for the Design of Cold-Formed Steel Structural Members, August 19, 1986, as Modified	1986
AISI	Specification for the Design of Cold-Formed Stainless Steel Structural Members	1974
SJI	Standard Specifications for Open Web Steel Joists, H-Series, February 15, 1978, Revised November 7, 1983, as Modified	1978
SJI	Standard Specifications for Open Web Steel Joists, K-Series, November 4, 1985, Revised May 19, 1987	1985
SJI	Standard Specification for Long Span Steel Joists, and LH-Series and Deep Long Span Steel Joists, and DLH-Series, February 5, 1978 Revised May 19, 1987, as Modified	1978
SJI	Standard Specification for Joist Girders, May 15, 1978, Revised May 19, 1987, as Modified	1978
SJI	Standard Specifications, Load Tables and Weight Tables for Steel Joists and Joist Girders	1988
ACI 506.2	Specification for Materials, Proportioning and Application of Shotcrete-1983 Revision	1977
NFoPA	National Design Specifications for Wood Construction and its January 1986 Supplement with 1987 Revisions	1986
****AA	Aluminum Design Manual Part 1-A Specification for Aluminum Structures Allowable Stress Design (Seventh Edition, January 2000)	2000
**** AA	Aluminum Design Manual Part 1-B Specification for Aluminum Structures Load and Resistance Factor Design of Buildings and Similar Type Structures (Second Edition, January 2000)	2000
ASTM C317 76	Standard Specification for Gypsum Concrete (Reapproved 1981)	1976
NFoPA	Span Tables for Joists and Rafters	1977
ACI-214	Recommended Practice for Evaluation of Strength Test Results of Concrete (Reapproved 1983)	1977
ANSI/ASTM-C42	Standard Method of Obtaining and Testing Drilled Cores and Sawed Beams of Concrete	1984a
ANSI/ASTM-C39	Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens	1984
ASTM B209	Standard Specification for Aluminum and Aluminum Alloy Sheet and Plate	1988
ASTM B308	Standard Specification for Aluminum-Alloy 6061-T6 Standard Structural Shapes, Rolled or Extruded	1988
ASTM B429	Standard Specification for Aluminum Alloy Extruded Structural Pipe and Tube	1988
ANSI/AITC-A190.1	Structural Glued Laminated Timber and AITC 200-83 Inspection Manual	1983
ANSI/ASTM-C79	Standard Specification for Gypsum Sheathing Board	1987
AWPA-C2	Standard for the Preservative Treatment of Lumber, Timbers, Bridge Ties and Mine Ties by Pressure Processes	1988
ANSI/ASTM-C192	Standard Method of Making and Curing Concrete Test Specimens in the Laboratory	1981
AWPA-C9	Standard for the Preservative Treatment of Plywood by Pressure Processes	1985
ANSI/ASTM-A153	Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware	1982
ASTM-A90	Tests for Weight of Coating on Zinc-Coated (Galvanized) Iron or Steel Articles	1981
ANSI/ASTM-A586	Standard Specification for Zinc-Coated Steel Parallel and Helical Steel Wire Structural Strand	1986
ASTM-A603	Standard Specification for Zinc-Coated Steel Structural Wire Rope	1988
ASTM A434	Specification for Quenched and Tempered Alloy Steel Bars, Hot-Wrought or Cold Finished	1981

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ASTM-B6	Standard Specification for Zinc (Slab Zinc)…….……..…...	1987
ASTM-D2277	Specification for Fiberboard Nail-Base Sheathing…….…….....…...	1987
AWPA-C4	Standard for Preservative Treatment of Poles by Pressure Processes...……	1988
AWPA-M4	Standard for the Care of Pressure-Treated Wood Products..……..……	1984
ANSI-A82.1/ASTM-C67	Standard Methods of Sampling and Testing Brick and Structural Clay Tile..…….……	1987
ANSI-A98.1/ASTM-C62	Standard Specification for Building Brick (Solid Masonry Units Made from Clay or Shale)..	1988
ANSI-A99.1/ASTM-C216	Standard Specification for Facing Brick (Solid Masonry Units made from Clay or Shale)…...	1987a
ANSI-ASTM-C652	Standard Specification for Hollow Brick (Hollow Masonry Units made from Clay or Shale)…….	1988
ANSI-A78.1/ASTM-C73	Standard Specification for Calcium Silicate Face Brick (Sand-Lime Brick).....…...	1985
ANSI-A75.1/ASTM-C55	Standard Specification for Concrete Building Brick ..……..	1985
ANSI-A74.1/ASTM-C34	Standard Specification for Structural Clay Load Bearing Wall Tile…….	1984
ANSI-ASTM-C56	Standard Specification for Structural Clay Non-Load Bearing Tile (Reapproved 1986).....	1971
ANSI-A81.1/ASTM-C145	Standard Specification for Solid Load-Bearing Concrete Masonry Units……	1985
ANSI-A79.1/ASTM-C90	Standard Specification for Hollow, Load-Bearing Concrete Masonry Units.....	1985
ANSI-A80.1/ASTM-C129	Standard Specification for Hollow, Non-Load Bearing Concrete Masonry Units....….....	1985
ANSI/ASTM-/C52	Standard Specification for Gypsum Partition Tile or Block (Reapproved 1977).....……..	1954
ANSI/A101.1/ASTM-C126	Standard Specification for Ceramic Glazed Structural Clay Facing Tile, Facing Brick and Solid Masonry Units…….……..……..	1986
ANSI/ASTM-A116	Standard Specification for Zinc-Coated (Galvanized) Steel Woven Fence Fabric.....	1988
ANSI/ASTM-B227	Standard Specifications for Hard-Drawn Copper-Clad Steel Wire (Reapproved 1980)……....	1970
FS SS-S-721C	Stone, Architectural, Cast.....…….…….....….... ……..……...	1964
ANSI/ASTM-C494	Standard Specification for Chemical Admixtures for Concrete..……....…...	1986
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ANSI/ASTM-C270	Standard Specification for Mortar for Unit Masonry…….……....	1988
ANSI/ASTM-C476	Standard Specification for Grout for Reinforced and Non-Reinforced Masonry.....……	1983
ANSI/ASTM-C22	Standard Specification for Gypsum……...	1983
ASTM-C143	Standard Test Method for Slump of Portland Cement Concrete……...……	1978
ANSI/ASTM-C172	Standard Method of Sampling Freshly Mixed Concrete……...……	1982
ANSI/ASTM-C31	Standard Method of Making and Curing Concrete Test Specimens in the Field.....	1987
APA	Plywood Design Specifications...…….....……	1986
APA PRP-108	Performance Standards and Policies for Structural-Use Panels……	1986
APA	Design and Fabrication Specification of all Plywood Lumber Components.....	1985
TECO	Standard and Policies for Structural-Use Panels……...	1981
DOC PS 1-83	U.S. Product Standard for Construction & Industrial Plywood (Revised June 1987).....….	1983
ACI-211.2	Standard Practice for Selecting Proportions for Structural Lightweight Concrete.....……...	1981
ANSI-Z97.1	Safety Performance Specifications and Methods of Test for Safety Glazing Materials Used in Buildings.....……	1984
ASTM C1036	Standard Specification for Flat Glass....……...…….……	1985
ASTM C1048	Standard Specification for Heat-Treated Flat Glass Kind HS, Kind FT Coated and Uncoated Glass...	1987
AISC- LRFD	Load and Resistance Factor Design Specification for Structural Steel Buildings, effective September 1, 1986, as Modified ……....	1986
ANSI/ASTM-C173	Standard Test Method for Air Content of Freshly Mixed Concrete by the Volumetric Method…..	1978
ANSI/ASTM-C231	Standard Test Method for Air Content of Freshly Mixed Concrete by the Pressure Method…	1982
ANSI/ASTM-C138	Standard Test Method for Unit Weight, Yield, and Air Content (Gravimetric) of Concrete…	1981
ANSI/ASTM-C567	Standard Test Method for Unit Weight of Structural Lightweight Concrete……	1985
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**ANSI/ACI-318	Building Code Requirements for Reinforced Concrete, as modified…….……...	1989

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	and Manufacturing Standard ……..……	1988
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Local Law 65-1990; 455-89 BCR; 617-87 BCR; 9-87 BCR; 1077-86 BCR; 738-86 BCR; 208-85 BCR; 288-84 BCR; 425-81 BCR; 714-80 BCR;493-80 BCR; 390-80 BCR; 142-80 BCR; 51-80 BCR; 799-79 BCR; 510-79 BCR; 302-73 BCR; 302-71 BCR

****Local Law 17-1995.***

*****DOB 6-17-96***

******DOB 9-2-01***

** REFERENCE STANDARD RS 10-1A MASONRY

Section 1 General

****1.1 SCOPE** -This standard provides minimum requirements for the design and construction of non enlargement alterations to unit masonry in buildings constructed on or before the effective date of this local law as an alternate to RS 10-1B, not including plain or reinforced unit concrete, reinforced gypsum, or reinforced unit masonry. All new construction and enlargement alterations in and of themselves of unit masonry on new or existing foundations, not including plain reinforced concrete, reinforced gypsum, or reinforced unit masonry shall comply with reference standard RS 10-1B.

****Local Law 17-995.***

1.2 DIMENSIONS.-Unless the word "actual" is used, the dimensional requirements for masonry and for masonry units given in this standards are nominal. The measured dimensions of masonry shall be not more than 1/2 in. less than the required nominal dimensions.

Section 2 Definitions

ARCHITECTURAL TERRA COTTA.-(See ceramic veneer).

ASHLAR MASONRY.-Masonry composed of rectangular units having sawed, dressed, or squared beds, properly bonded, and laid in mortar.

BACKUP.-That part of a masonry wall behind the facing.

BONDER.-A masonry unit that overlaps two or more adjacent wythes of masonry to bind or tie them together.

BRICK.-A masonry unit, not less than 75 percent solid, having a shape approximating a rectangular prism, made from burned clay or shale, or mixture thereof. Brick may be composed of other materials when so designated, as for example, "concrete brick" and "sand-lime brick".

BUTTRESS.-A bonded column of masonry built as an integral part of the wall and projecting from either or both surfaces decreasing in cross-sectional area from base to top.

CERAMIC VENEER.-Hard-burned, glazed or unglazed, non-loadbearing clay masonry units, solid or hollow, plain or ornamental.

CHASE.-A continuous recess in a wall to receive pipes, ducts, conduits, etc.

COLLAR JOINT.-The vertical longitudinal joint between wythes of masonry.

COLUMN.-A vertical compression member whose width does not exceed three times its thickness.

COPING.-The materials or masonry units used to form a cap or finish on top of a wall, column, chimney, or pilaster to protect the masonry below from penetration of water.

CORBELLING.-The projecting of successive courses of masonry out from the face of the wall to increase the wall thickness or to form a shell or ledge.

COURSE.-One of the continuous horizontal layers of masonry units bonded together with mortar.

CROSS-SECTIONAL AREA.-Net cross-sectional area of a masonry unit shall be taken as the gross cross-sectional area minus the area of the cores or cellular spaces. Gross cross-sectional area of scored units shall be determined to the outside of the scoring but the cross-sectional area of the grooves shall not be deducted from the gross cross-sectional area to obtain the net cross- sectional area.

EFFECTIVE HEIGHT.-The height of a wall or column which is assumed for purposes of calculating the slenderness ratio (see section 4.4.2.)

EFFECTIVE THICKNESS.-The thickness of a wall or column that is assumed for purposes of calculating the slenderness ratio (see section 4.4.3.)

FILLED CELL MASONRY.-Masonry construction made with vertical cell hollow units in which all cells and voids are filled by pouring grout therein.

GROUTED MASONRY.-Masonry construction made with solid masonry units in which the collar joints are filled by pouring grout therein.

HEADER.-A brick or other masonry unit laid with the end surface exposed.

HOLLOW MASONRY UNIT.-A masonry unit whose net cross- sectional area in any plane parallel to the bearing surface is less than 75 percent of its gross cross sectional area measured in the same plane (see cross-sectional area).

MASONRY.-A built-up construction or combination of masonry units set in mortar.
PARGING.-The process of applying a coat of mortar to masonry construction.
PARTITION.-An interior non-loadbearing wall supporting no vertical load other than its own weight.
PILASTER.-A bonded or keyed column of masonry having uniform cross section throughout its height; built as part of a wall and projecting from either or both surfaces. A pilaster may serve as either a vertical beam, or a column, or both.
RUBBLE.-
(1) Coursed rubble-Masonry composed of roughly shaped stones fitting approximately on level beds, well bonded, and brought at vertical intervals to continuous level beds or courses.
(2) Random rubble-Masonry composed of roughly shaped stones, well bonded and brought at irregular vertical intervals to discontinuous but approximately level beds or courses.
(3) Rough or ordinary rubble-Masonry composed of nonshaped or field stones laid without regularity of coursing, but well bonded.
SOLID MASONRY UNIT.-A masonry unit whose net cross-sectional area in every plane parallel to the bearing surface is 75 percent or more of its gross cross-sectional area measured in the same plane (see cross-sectional area).
VENEER.-A single facing wythe of masonry units or similar materials securely attached to a wall for the purpose of providing ornamentation, protection, insulation, etc., but not so bonded or attached as to be considered as exerting common reaction under load.
WALL.-A vertical compression member having a horizontal dimension measured at right angles to the thickness, of more than three times the thickness.
(1) Cavity wall.-A wall built of masonry units so arranged as to provide a continuous air space within the wall between the inner and outer wythes (with or without insulating material), and in which the wythes are tied together with metal ties.
(2) Composite wall.-A multiple-wythe wall in which at least one of the wythes is dissimilar to the other wythe or wythes with respect to type of masonry unit, mortar, or construction.
(3) Curtain wall.-An exterior non-loadbearing wall.
(4) Faced walls.-A composite wall in which the masonry facing and the backing are so bonded as to exert a common reaction under load.
(5) Hollow-masonry wall.-A wall built of hollow masonry units.
(6) Loadbearing wall.-A wall that supports any vertical load in addition to its own weight.
(7) Masonry bonded hollow wall.-A wall built of masonry so arranged as to provide an air space within the wall between the inner and outer wythes and in which the wythes are bonded together with solid masonry units.
(8) Non-loadbearing wall.-A wall that supports no vertical load other that its own weight.
(9) Panel wall.-An exterior non-load bearing wall in skeleton frame construction, wholly supported at each story.
(10) Solid masonry wall.-A wall built of solid masonry units laid contiguously, with joints between units filled with mortar or grout.
(11) Veneered wall.-A composite wall having a facing of masonry units or other weather-resisting noncombustible materials securely attached to the backing, but not so bonded as to intentionally exert common action under load (see section 11).
WYTHE.-Each continuous vertical longitudinal section of a wall. For walls of unit masonry, each wythe is one masonry unit in thickness.

Section 3 Materials
3.1 QUALITY.-Masonry materials shall conform to the standards and requirements set forth herein. Where no standards are established, the quality of materials shall be based on generally accepted good practice.
3.2 MASONRY UNITS.-Except as noted in sections 3.2.1 to 3.2.3, the quality of all masonry units used in buildings shall conform to the standard and grade shown in table RS 10-1.1. Manufacturer's certification as to the suitability of the material for the proposed use shall be submitted for all masonry units used in structural applications.
3.2.1 Ceramic veneer - All ceramic veneer shall have a strong homogeneous body conforming to the following physical requirements:
(a) The average compressive strength of at least five 1 in. square specimens shall be not less than 5,000 psi with no individual specimen testing less than 4,500 psi. Compression tests shall be made on five specimens, 1 in. by 1 in. face size and the full thickness of the ceramic veneer. Loads shall be applied to the test specimens in a direction parallel to the exposed face. Specimens shall be capped and tested in accordance with Reference Standard RS 10-30.
(b) The average absorption of not less than five specimens by 5 hr. boiling shall not exceed 16 per cent with no individual specimen exceeding 18 per cent. Absorption tests shall be made on five specimens, 6 in. by 6 in. in face size and the full thickness of the ceramic veneer. Absorption tests shall be made in accordance with Reference Standard RS 10-30.
3.2.2 Glass Block-Block may be solid or hollow; mortar bearing surfaces of the blocks shall be provided with surface or a coating material to afford adhesion between mortar and block.
3.2.3 Natural stone-Stone used in masonry shall be sound, free from friable inclusions and have characteristics of strength, durability and resistance to impact and abrasion commensurate with the proposed use.
3.3 METAL ANCHORS AND TIES.-Where corrosion-resistant anchors or ties are called for, they shall be copper coated or zinc coated, or of metal having corrosion-resistant qualities equivalent to zinc-coated mild steel.

(a) Zinc coatings on iron or steel shall conform to Reference Standard RS 10-23, class B-1, B-2, or B-3.
(b) Zinc coatings on wire shall conform to Reference Standard RS 10-41, class 1.
(c) Copper coated wire shall conform to Reference Standard RS 10-42, grade 30 HS.

TABLES RS 10-1.1 MATERIAL STANDARDS

Units	Reference Standard	Severe Exposure	Minimum Grade Moderate Exposure	No Exposure
Brick—				
Clay or shale……...……	RS 10-31	SW	MW	NW
Sandlime……..……	RS 10-32	SW	MW	NW
Concrete……..……	RS 10-33	U	P[c]	G
Structural Clay Tile—				
Loadbearing……	RS 10-34	LBX	LBX	LB
Non-Loadbearing…...……	RS 10-35	not permitted	not permitted	NB
Concrete Masonry Units-				
Solid loadbearing……	RS 10-36	U	p[c]	G
Hollow loadbearing……	RS 10-37	U	p[c]	G
Hollow non-loadbearing….	RS 10-38	not permitted	permitted	permitted
Gypsum[a]—				
Partition tile or block..……	RS 10-39	not permitted	not permitted	permitted[a]
Cast Stone	RS 10-43	permitted	permitted	permitted
Ceramic Glazed Clay Masonry Units[b]—				
Solid Units……..……	RS 10-40	permitted	permitted	permitted
Hollow Units……..……	RS 10-40	permitted	permitted	permitted
Prefaced Concrete				
Masonry Units—	RS 10-33	permitted	permitted	permitted
	RS 10-36	permitted	permitted	permitted
	RS 10-37	permitted	permitted	permitted

Notes:
[a]Gypsum partition tile or block shall not be used in bearing walls, or where subject to continuous dampness. Gypsum partition tile or block shall not be used for partitions to receive Portland cement plaster, ceramic tile, marble or structural glass wainscots unless self-furring metal lath is placed over the gypsum tile.
[b]Requirements for finish do not apply.
[c]Grade P may be used for "severe exposure" if protective coatings to prevent water penetration are applied on exterior face.

3.3.1 Prefabricated joint reinforcement- Prefabricated wire reinforcement for embedment in horizontal mortar joints shall consist of two or more longitudinal wires welded to cross wires. The distance between welded contacts of cross wires with each longitudinal wire shall not exceed 6 in. and 16 in. for smooth and deformed longitudinal wires, respectively. Longitudinal wires and cross wires shall be not less than no. 9 steel wire gage where used in 3/8 in. or thicker mortar joints and not less than no. 12 steel wire gage where used in thinner mortar joints. Cross wires of joint reinforcement that are used to bond the facing sand backing of masonry, including cavity walls, shall be corrosion resistant and not less than no. 9 gage. The out-to-out spacing of longitudinal wires shall be such that the wires will be thoroughly embedded in the mortar joints as required in section 10.12.

3.3.2 Unit ties, anchors, or steel bar reinforcement- Unit metal ties, anchors, or steel bar reinforcements for embedment in horizontal mortar joints shall conform to the applicable requirements of Sections 7, 9, 10 and 11 or shall be equivalent in strength and stiffness to the size specified. Any such materials shall have a minimum 30,000 psi yield strength.

* **3.4 MASONRY MORTAR AND GROUT**.-Mortar, except gypsum, and type H, shall conform to Reference Standard RS 10-46. Grout shall conform to the applicable requirements of Reference Standard RS 10-47. Gypsum mortar shall be composed of one part gypsum, meeting the requirements of Reference Standard 10-48, to not more than three parts sand by weight. Water shall be clean and potable. Type H mortar shall be subject to controlled inspection and shall have a compressive

strength of at least 6,000 psi when tested after 28 days at a cure of 75°F. and 50% Relative Humidity, in accordance to ASTM C-109 and shall consist of:

1 bag (94 lbs.) Type I or III Portland cement
50 lbs. ground limestone
3 1/4 cu. ft. mortar sand conforming to ASTM C-144
4 gallons polyvinylidene chloride latex having a solids content of at least 46%

Prior to commencement of construction the supplier of the mortar shall submit an affidavit certifying that all the required ingredients specified have been supplied and included in the mix.

3.4.1 Types of mortar permitted-Unit masonry shall be laid in mortar of the type specified in Table RS 10-1.2.
264-73 BCR

Section 4 Design

4.1 GENERAL.-The design of masonry may be predicated upon analysis of stress or upon the empirical provisions indicated in this Reference Standard. The provisions of this section shall apply only where the design is predicted on analysis of stress. Except as specifically indicated, stresses shall be calculated on the basis of actual rather than nominal dimensions. For provisions relating to infrequent stress conditions the structural design provisions of the building code on combination of loads shall apply.

4.2 ALLOWABLE COMPRESSIVE STRESSES-.

***4.2.1 General**-The allowable compressive stress in any type of masonry construction due to axial loads shall not exceed 0.25 f'_m for walls or 0.2 f'_m for columns. The allowable compressive stress in type H mortar construction due to flexural loads shall be 0.33 f'_m. The value of f'_m shall be based on the cross-sectional area (A_g) as defined in Sections 4.4.4 (a) and (b). Where Method No.1 (Section 4.2.2(a) is used, the value of f'_m shall be the specified minimum 28-day compressive strength of the masonry or the specified minimum compressive strength at any earlier age at which the masonry may be expected to receive its full load. Plans shall show the compressive strength of masonry (f'_m) at a specified age for which the several parts of the structure were designed. Where Method No.2 (Section 4.2.2 (b)) is used, the tabulated values of f'_m shall be multiplied by the ratio of the strength of the mortar at a given age to the specified strength of the mortar at the age of 28 days, except that said ratio shall not be taken as greater than 1.0.
264-73 BCR

*** TABLES RS 10-1.2 TYPES OF MORTAR PERMITTED**

Type of Masonry:	Type of Mortar Permitted[a]
Masonry in contact with earth	H, M, or S[b]
Grouted and filled cell masonry	H, M, or S
Masonry above grade or interior masonry:	
Columns of solid units	H, M, S, N, or O
Columns of hollow units	H, M, or S
Walls of solid units	H, M, S, N, or O
Walls of hollow units	H, M, S, or N
**Cavity walls and masonry bonded hollow walls	H, M, S, or N
Glass Block Masonry	S or N
Non-loadbearing partitions and fireproofing	H, M, S, O, or Gypsum
Gypsum partition tile or block	Gypsum
Linings of existing masonry, either above or below grade	H, M, or S

Notes:

[a] M,S, N and O as defined by reference standard RS 10-46.

[b] Type N mortar may be used where masonry in contact with the earth will not be exposed to frost.

264-73 BCR; 747-72 BCR

4.2.2 Determination of compressive strength of masonry. The determination of the compressive strength of masonry (f'_m) shall be made by one of the following methods: Interpolate to obtain intermediate values.

(a) Method no. 1- Prism tests- When the compressive strength of the masonry is to be established by preliminary tests, the tests shall be made in advance of the operations, using prisms built of similar materials under the same conditions and, insofar as possible, with the same bonding arrangements as for the structure. In building the prisms, the moisture content of the units at the time of laying, the consistency of the mortar, the thickness of the mortar joints, and the workmanship shall be the same as will be used in the structure. Assembled specimens shall be at least 16 in, high and shall have a height to thickness ration (h/t) of at least 2 but not of the prisms tested is less than 5, the compressive strength values indicated by the tests shall be corrected by multiplying by the factor indicated in the table RS 10-1.3.

Prisms shall be tested after aging for 28 days in accordance with the applicable provisions of Reference Standard RS 10-17. Seven-day tests may be used, provided the relation between the 7-and 28-day strengths of the masonry is established by tests of the materials used. Not less than five specimens shall be tested.

(b) Method no.2-Unit tests-In lieu of prism tests, an assumed value of f'_m may be interpolated from the values in table 10-1.4. Compressive strength of the masonry units shall be determined from tests conducted in accordance with applicable ASTM specifications.

TABLE RS 10-1.3 CORRECTION FACTORS FOR H/T RATIO

Ratio of height to thickness (h/t)……	2.0	2.5	3.0	3.5	4.0	5.0
Correction Factor[a]……	0.73	0.80	0.86	0.91	0.95	1.00

Note:
[a]Interpolate to obtain intermediate values.

TABLE RS 10-1.4 ASSUMED COMPRESSIVE STRENGTH OF MASONRY [a b]

Compressive Strength of Units (psi)	Assumed Compressive Strength of Masonry f'm (psi)				
	Type H Mortar	Type M Mortar	Type S Mortar	Type N Mortar	Type O Mortar
			Solid Clay or Shale Units		
14,000 or more……..	5,000	4,600	3,900	3,200	—
10,000……...	5,000	3,400	2,900	2,400	—
6,000…….	5,000	2,200	1,900	1,600	—
2,000…….	1,000	1,000	900	800	—
			Solid Concrete or Sand-Lime Units		
6,000…….	2,000	2,000	1,700	1,400	—
4,000…….	1,500	1,500	1,300	1,100	—
2,500…….	1,100	1,100	1,000	900	—
1,800…….	950	950	860	770	—
1,200……	800	800	740	680	—
			Hollow Units (Clay, Shale, or Concrete)[c]		
6,000…….	5,000	2,000	1,700	1,400	—
4,000…….	1,500	1,500	1,300	1,100	—
2,000…….	1,000	1,000	900	800	—
1,000…….	750	750	700	650	—
			Stone Ashlar Masonry		
Granite……..	4,300	4,300	3,850	3,400	2,700
Limestone or marble…….	2,700	2,700	2,400	2,150	1,750
Sandstone or caststone…….	2,150	2,150	1,900	1,700	1,350
Rubble stone, coursed, rough, or random……..	750	750	650	550	450

Notes:
[a]Where masonry cement mortar is used, if the amounts of Portland cement and lime are established and conform to the requirements for the mortar type indicated in the table, the values in this table apply. Masonry cement mortar in which the proportions are not identified shall not be used for masonry construction proportioned on the basis of the analysis of stress.
[b]For grounted masonry and filled cell masonry, f '$_m$ shall be based on the values given for solid units and hollow units respectively. See Section 8.
[c]The ratio of the bedded area to gross area shall not be less than 0.25. For units having a lesser ratio of mortar bedded area than 0.25, the f '$_m$ values shall be determined by Method No.1 (prism tests).

4.3 ALLOWABLE FLEXURAL, TENSION, AND SHEAR STRESSES.-The allowable stresses in flexural tension and in shear shall not exceed the values set forth in Table RS 10-1.5, except as permitted in other sections of this Reference Standard. The resistance in flexural tension and shear where the wall section is penetrated by flashing shall be investigated on the basis that the resistance is limited to the fractional resistance.

***4.3.1** The allowable flexural tension stress for masonry constructed with Type H mortar shall be the same as with Type M or S mortar (Table RS 10-1.5) except that when clay or shale masonry units are used the allowable flexural tension shall be 0.30 f '$_t$ but not greater than 112 psi and the allowable shear shall be 100 psi provided:

(a) The brick is ASTM C26-69 grade SW or MW.
(b) The brick has no silicone treatment.
(c) The initial rate of absorption of the brick does not exceed 35 grams/minute 730 square inches when tested in accordance with ASTM C67-62.
(d) The brick are extruded side cut units.
(e) The average compressive strength of the brick units is 6,000 psi when tested in accordance with ASTM C67-69.
(f) F'$_t$ is determined by building 5 stack bond single wythe prisms one brick wide and seven brick tall. The prisms shall be cured for 28 days at about 75°F and 50% relative humidity. Specimens shall then be tested as a simple beam with third point loading as described in ASTM C78-64.

(g) Test reports indicating the determination of f '$_t$ shall be submitted by either the applicant or the Architect or Engineer designated for controlled inspection prior to commencement of construction of masonry.

***4.3.2** The allowable flexural tension stress for masonry constructed with Type H mortar and clay or shale masonry units which do not meet the requirements of section 4.3.1(c) through (d) shall be 0.30 f '$_t$ provided f'$_t$ is determined by ASTM E 72-61, uniform transverse load strength method B after 28 day cure at 75°F and 50% R.H. The test panels shall be single wythe, 8 feet tall and 4 feet wide. In addition, units producing wall strength less than 360 psi when tested as outlined above must be tested by building additional single wythe panels constructed and tested for uniform transverse load strengths immediately after being subjected to the National Bureau of Standard Water Permeability Test for a period of five days following the normal 28 day cure.

***4.3.3** Wetting of brick in construction of masonry using Type H mortar shall not be permitted.

***4.3.4** Allowable flexural tension stresses for masonry constructed by Type H mortar may be increased 33 1/3% when considering wind load.

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*** TABLE RS 10-1.5 ALLOWABLE STRESSES IN FLEXURAL TENSION AND IN SHEAR ALLOWABLE STRESSES (PSI) ON CROSS-SECTIONAL AREA (EXCEPT AS NOTED)**

	Mortar Type[c]								
	Flexural Tension						Shear		
	Normal to bed joints[a]			Parallel to bed joints[b]					
Construction Type[d]	H	M or S	N	H	M or S	N	H	M or S	N
Clay or Shale Masonry Units:									
Solid……	112[f]	36	28	112[f]	72	56	100	50	40
Hollow[e]……...	112[f]	15	10	112[f]	30	20	100	30	20
Concrete Masonry Units:									
Solid……	25	25	18	50	50	36	30	30	20
Hollow[e]……...	15	15	10	50	30	20	30	30	20
Sand-Lime Masonry Units:									
Solid……	30	30	20	60	60	40	40	40	35
Hollow[e]……...	15	15	10	30	30	20	30	30	20
Stone Masonry Units:									
Natural Stone...……...	25	25	18	50	50	36	30	30	20
Cast Stone…….……..	25	25	18	50	50	36	30	30	20

Notes:

[a]Direction of stress is normal to bed joints construction.

[b]Direction of stress is parallel to bed joints. If masonry is laid in stack bond, tensile stress values for tension parallel to bed joints shall not be used.

[c]Where masonry cement mortars are used, if the amount of Portland cement and lime is established and conforms to the requirements for Type M, S, or N mortar, the provisions of this table shall apply. Masonry cement mortar in which the proportions are not identified shall not be used for masonry construction proportioned on the basis of the analysis of stress.

[d]For computing flexural resistance, the moment of inertia of a cavity wall shall be based on the assumption that the two wythes act independently. The moment of inertia of a masonry bonded hollow wall may be based on the assumption that there is adequate shear resistance between the wythes to assure that they act together.

[e]Net area in contact with mortar.

[f] The allowable flexural tensile stress may be increased by 33 1/3% (or to 150 psi) when considering wind load.

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4.4 DESIGN OF MASONRY WALLS AND COLUMNS.-

4.4.1 Slenderness ratio-

(a) The slenderness ratio (ratio of effective height, h', or length of the wall panel to the effective thickness, t) shall not exceed 30 for walls of solid units, 20 for walls of hollow units, and 25 for walls of filled cell or grouted masonry.

(b) The slenderness ratio (ratio of the effective height, h', to the least effective thickness, t) shall not exceed 25 for columns of solid units, 15 for columns of hollow units and 20 for columns of filled cell or grouted masonry.

* (c)The slenderness ratio shall exceed 40 for walls and columns of masonry constructed with type H mortar.

4.4.2 Effective height-the effective height, h', of columns and walls shall be determined by the architect or engineer who prepares the plans, who shall consider the conditions of end restraint provided in the particular case.

4.4.3 Effective thickness-

(a) For solid masonry, grouted masonry, filled cell masonry, hollow masonry, and masonry bonded hollow walls, the effective thickness, 6, shall be taken as the actual thickness.

(b) For cavity walls loaded on both wythes, the effective thickness, t, shall be taken as 2/3 the sum of

the actual thickness of both wythes.

(c) For cavity walls loaded on one wythe only, the effective thickness, t, shall be taken as the actual thickness of the loaded wythe or 2/3 the sum of the actual thicknesses of both wythes, whichever is the lesser value.

(d) For columns, the effective thickness shall be taken as the least actual thickness.

4.4.4 Allowable vertical loads-

(a) AXIAL LOADS ON WALLS.-Allowable axial loads on masonry walls P, shall be computed by the following formula:

$$P = c\,(0.25f'_m)\,A_g$$

Where:

c = stress reduction factor given in Table RS 10-1.6, corresponding to the slenderness ratio.

A_g = cross-sectional area of the wall.

For solid masonry, grouted masonry, stone masonry and filled cell masonry, A_g shall be computed on the basis of actual thickness without deduction for cells or cores.

For hollow masonry walls, A_g shall be taken as the net cross-sectional area of the units. Where the ratio of mortar bedded area to gross area is less than 0.25, A_g shall then be multiplied by a factor equal to mortar bedded area divided by 0.25 times the gross area.

Where both wythes of a cavity wall support vertical load, A_g shall be taken as cross-sectional area of wall computed as above minus the actual area of the cavity between wythes. Where only one wythe supports vertical load, A_g shall be taken as the cross-sectional area of the loaded wythe computed as above.

(b) AXIAL LOADS ON COLUMNS.-Allowable axial loads on masonry columns shall be computed by the following formula:

$$P=c(0.20\,f'_m)A_g$$

Where:

c = stress reduction factor given in Table 10-1.6 corresponding to the slenderness ratio.

A_g = cross-sectional area of the column.

For solid masonry, grouted masonry, stone masonry and filled cell masonry, A_g shall be computed on the basis of actual thickness without deduction for cells or cores.

For hollow masonry columns, A_g shall be taken as the net cross-sectional area of the units. Where the ratio of mortar bedded area to gross area is less than 0.25, A_g shall then be multiplied by a factor equal to mortar bedded area divided by 0.25 times the gross area.

(c) ECCENTRIC LOAD.-

(1) Where the eccentricity of the loads on the member does not exceed 1/3 the thickness, the allowable vertical load on walls and columns, shall be computed in accordance with section 4.4.4(a) and section 4.4.4(b), respectively, using the stress reduction factors given in Table RS 10-1.6.

TABLE RS 10-1.6 STRESS REDUCTION FACTORS (C)[a]

	Eccentricity as a Proportion of the Thickness of the Member		
Slenderness Ratio	0 to 1/20	1/6	1/3
5	1.00	0.66	0.32
10	0.92	0.63	0.27
15	0.79	0.56	0.22
20	0.64	0.42	0.16
25	0.49	0.36	0.12
30	0.38	0.27	0.08
35	0.27		
40	0.21		

Note:

[a] Linear interpolation between values for stress factors is permissible.

(2) Where the eccentricity exceeds 1/3 the thickness, the maximum tensile stress in the masonry, assuming linear stress distribution (P/A + M/S), shall not exceed the values given in Table RS 10-1.5 or the member shall be reinforced in accordance with the requirements of Reference Standard RS 10-2.

(3) In computing the eccentricity of loads on walls and columns, consideration shall be given to the effects of lateral load, eccentricity of vertical load, and the deflection, thermal and other movements of members. For solid masonry, grouted masonry, filled cell masonry, hollow masonry, masonry bonded hollow walls and cavity walls loaded on both wythes, the eccentricity shall be considered with respect to the centroidal axis of the member. For composite members, the eccentricity shall be considered with respect to the centroidal axis of the transformed area of the member. For cavity walls loaded on one wythe, the eccentricity shall be considered with respect to the centroidal axis of the loaded wythe.

4.5 COMPOSITE WALLS OR FACED WALLS.-In composite walls, faced walls, or other structural members composed of different kinds or grades of units or mortars, the maximum stresses shall not exceed the allowable stresses for the weakest of the combinations of units and mortars of which the member is composed. In cavity walls, where only one wythe supports vertical load, the stresses shall not exceed the allowable stresses for the units and mortars comprising that wythe.

4.6 DISTRIBUTION OF CONCENTRATED LOADS.-The length of the wall to be considered as effective in resisting a concentrated load shall not exceed the center-to-center distance between loads, nor shall it exceed the width of bearing plus four times the wall thickness. Concentrated loads shall not be considered as distributed by metal ties, or distributed across continuous vertical joints.

4.7 BEARING STRESSES.-Allowable bearing stresses may be taken as 1.5 times the corresponding allowable compressive stress, provided that the area of the bearing plate does not exceed 1/3 of the area of the member supporting the bearing plate and the least distance between the edges of the loaded and unloaded areas is a

minimum of 1/4 of the parallel side dimension of the loaded area. For bearing on the full area, the allowable bearing stress shall be taken as equal to the allowable compressive stress. For reasonably concentric bearing areas greater than 1/3, but less than the full area, the allowable bearing stress shall be interpolated between 1.0 and 1.5 times the allowable compressive stress.

Section 5 Lateral Support

5.1 METHOD OF SUPPORT.-Lateral support for masonry walls may be obtained by cross walls, columns, pilasters, or butresses, where the limiting distance is measured horizontally; or by floors, roofs, spandrel beams, or girts, where the limiting distance is measured vertically, sufficient bonding or anchorage shall be provided between the walls and the supports to resist the assumed wind or other horizontal forces, acting either inward or outward, and shall meet the requirements of section 9.5. All members relied upon for lateral support shall be designed on the basis of allowable stress and shall have sufficient strength to transfer the horizontal force, acting in either direction, to adjacent structural members or to the ground. Where walls are dependent upon floors or roofs for their lateral support, provision shall be made in the building to transfer the lateral forces to the ground.

5.2 HEIGHT AND THICKNESS LIMITATIONS.-

5.2.1 General-Masonry walls, whether loadbearing or non- loadbearing shall be provided with lateral support by means of horizontal or vertical members or constructions at intervals not to exceed those specified in section 4.4.1 or, for non- loadbearing walls or for loadbearing walls where it is desired to obviate the need for structural analysis, at intervals not to exceed those specified in this section.

Where masonry wall containing no openings is supported in both horizontal and vertical spans, the allowable distance between lateral supports as indicated in this section may be increased; but if both horizontal and vertical distances exceed the allowable distance, the sum of the horizontal and vertical spans between supports may be no more than three times the allowable distance permitted for support in only one direction.

5.2.2 Load bearing exterior masonry walls-Except as provided in section 6.4 load bearing exterior masonry walls shall be proportioned on the basis of structural analysis.

5.2.3 Non-loadbearing exterior masonry walls-In lieu of structural analysis, non-loadbearing exterior masonry walls may be proportioned so that the maximum slenderness ratio does not exceed 20. In the case of a gable, the height of the wall shall be based on the average height. Where the wall panel contains openings having a dimension in excess of 50 percent of the corresponding dimension of the panel, the wall shall be proportioned by structural analysis.

5.2.4 Interior loadbearing walls-In lieu of analysis of stresses, interior loadbearing masonry walls may be proportioned so that the maximum slenderness ratio does not exceed 20.

5.2.5 Partitions-The distance between lateral supports of partitions 3 in. or greater in thickness shall not exceed 48 times the nominal thickness of the partition, excluding plaster, and for partitions less than 3 in. thick, 48 times the actual thickness, including plaster.

5.2.6 Faced or composite walls-The slenderness ratio for faced or composite walls shall not exceed the value allowed for the weakest of the combination of masonry units or mortars of which the wall is composed.

5.2.7 Rubble stone masonry-In lieu of structural analysis, rubble stone masonry walls may be proportioned so that the slenderness ratio does not exceed 14 for exterior walls and 16 for interior walls.

***5.3 MINIMUM THICKNESS**.-Whether proportioned on the basis of analysis of stresses or empirical rules, in no case shall the thickness of masonry construction be less than the dimensions shown in Table RS 10-1.7 except when type H mortar is used and the construction is proportioned on the basis of analysis of stresses. When type H mortar is used the minimum nominal thickness of masonry shall be 4 inches. The minimum thickness of a wythe shall be 2 inches.

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5.4 DECREASE IN THICKNESS.-Whether proportioned on the basis of empirical provisions or the analysis of stresses, where walls of hollow units or masonry bonded hollow walls are decreased in thickness, a course or courses of solid masonry shall be interposed between the wall below and the thinner wall above, or special units of construction shall be used that will adequately transmit the loads from the shells of the units above to the shells of those below.

***TABLE RS 10-1.7 MINIMUM THICKNESS OF MASONRY**

Type of Masonry	Nominal Thickness (in.)
Loadbearing walls (exterior or interior).-	
Solid masonry……	5
Grouted or filled cell masonry……	6
Hollow masonry……..	6
Cavity or masonry bonded hollow walls	8[a]
Stone ashlar masonry……..	12
Stone rubble masonry……	16[c]
Non-loadbearing walls.-	
Exterior walls…….	4
Partitions…….	2
Columns.-	
Solid unit masonry…….	6
Hollow unit masonry……..	8
Facing of faced walls……...	2[b]

Notes:-

[a] Overall wall thickness including cavity.

[b] In no case less than 1/8 the height of the facing unit.

[c] 12 in. for one story buildings.

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Section 6 Thickness and Height of Masonry Empirical Provisions

6.1 GENERAL.-Compliance with the provisions of this section shall not be required where the design is proportioned on the basis of analysis of stresses.

6.2 MINIMUM THICKNESS.-The provisions of section 5.3 shall apply.

6.3 CHANGE IN THICKNESS.-

6.3.1 Variation in thickness- Except for window-paneled backs, and permissible chases and recesses (section 10.1) walls shall not vary in thickness between their lateral supports. When a change in thickness, due to minimum thickness requirements, occurs between floor levels, the greater thickness shall be carried up to the higher floor level.

6.3.2 Decrease in thickness-The provisions of section 5.4 shall apply.

6.4 LOADBEARING WALLS.-Where the height of exterior or interior loadbearing masonry walls does not exceed the following requirements, such walls, if they meet the provisions of section 5.3 with regard to compressive stress and of section 5.3 with regard to minimum thickness, may be considered to be adequate to resist the applied wind loads and other shearing forces.

6.4.1 Multi-story buildings-For limitations on 8 in. walls see (f) below.

(a) Exterior solid walls-The thickness of solid exterior masonry bearing walls shall be at least 8 in. for the top floor and 12 in. for a maximum of 55 ft. measured downward from the top floor level. Any additional height shall be provided by 16 in. lower walls up to a maximum building height of 104 ft. Buildings taller than 104 ft. shall be structurally analyzed and designed. The slenderness ratio shall not exceed 20.

(b) Interior solid walls-Interior solid walls shall be at least 8 in. thick for the uppermost 55 ft. of wall height and 12 in. for the lower walls for a maximum building height of 104 ft. Taller walls shall be designed by structural analysis.

(c) Cavity walls-Cavity walls or masonry bonded hollow walls shall be at least 8 in. thick for the top floor and 12 in. thick for the lower walls up to a maximum total height of 40 ft except that 10 in. cavity walls may be used for a maximum total height of 25 ft. Taller walls shall be designed by structural analysis.

(d) Walls of hollow units-Loadbearing walls of hollow units shall be at least 12 in. thick for the top floor and at least 12 in. for the lower walls for a maximum building height of 40 ft. Hollow unit walls 40 ft. high may be supported by solid masonry walls whose height is no more than 35 ft. above the first tier of beams.

(e) Stiffened walls-Where solid masonry bearing walls are stiffened by, and tied to, reinforced concrete floors or masonry cross walls at distances not greater than 20 ft. apart, they may be 12 in. thick for the uppermost 70 ft., measured downward from the top of the wall.

(f) Eight inch walls-Notwithstanding other provisions in this section, the thickness of masonry bearing walls may be 8 in. where:(1) the total height of the wall above its support does not exceed 35 ft. except for cavity walls for which (c) above shall apply, and (2) the distance from floor-to-floor or floor-to-roof does not exceed 12 ft. and (3) the floor live load does not exceed 60 psf; and (4) the roof is designed so that the dead load imparts no lateral thrust to the wall.

6.4.2 One-story buildings-The bearing walls of one-story buildings shall be at least 6 in. thick provided the vertical loads on the roof impart no lateral thrust to the wall

6.4.3 Walls of residence buildings-In residence buildings not more than three stories high, bearing walls other than coursed or rough or random rubble stone, may be 8 in. thick when not over 35 ft. high and the roof is designed so that the dead load imparts no lateral thrust to the wall. Such walls in one- story residence buildings, and in one-story private garages, may be 5 1/2 in. thick.

6.4.4 Walls above roof level-Masonry walls above roof level, 12 ft. or less in height, enclosing stairways, machinery rooms, shafts, or penthouses, may be 8 in. thick and may be considered as neither increasing the height nor requiring any increase in the thickness of the wall below. Parapet walls shall conform to the provisions of section 10.4.

6.4.5 Faced or composite walls-Neither the thickness or height of faced or composite walls, not the distance between lateral supports, shall exceed that prescribed for masonry of either of the types forming the facing or the backing.

6.4.6 Cavity or masonry bonded hollow walls-Where both the facing and backing wythes are constructed of solid masonry units, the wythes may be 3 in. thick. Otherwise, the wythes of cavity walls shall each have a thickness of at least 4 in. and the cavity shall be at least 2 in. but not more than 4 in. wide. Wythes less than 4 in. thick shall not have raked joints and the backing wythe of cavity or masonry bonded hollow walls shall be at least as thick as the facing wythe. A cavity or masonry bonded hollow wall may be constructed to its maximum permissible height on top of a solid masonry wall whose maximum height is 35 ft. above the first tier of beams. Roof construction shall be designed so that the dead load imparts no lateral thrust to the wall.

6.4.7 **Rubble stone walls**-Rough, random or coursed rubble stone walls shall be 4 in. thicker than is required for other types of masonry, but in no case less than 12 in. thick.

6.4.8 Wall thickness increase due to span length-When the clear span between bearing walls or between a bearing wall and an intermediate support is more than 26 ft., the effects of temperature, of rotation of end supports, and of eccentricity shall be investigated. In lieu of such investigation, the thickness of such walls shall be increased 4 in. for each 12 1/2 ft., or fraction thereof, that such span is in excess of 26 ft.

6.5 NON-LOADBEARING WALLS.-Provided that they conform to the provisions of Section 5, non-loadbearing masonry walls, including curtain walls and

panel walls, may be 4 in. less in thickness than required in Section 6.4 for loadbearing walls, except as provided below.

6.5.1 Partitions-The minimum thickness for partitions shall be as follows:

TABLE RS 10-1.8

Height of Walls	Thickness
8 ft. and under …….	2 in.
Over 8 ft. to 12 ft……..	3 in.
Over 12 ft. to 16 ft……	4 in.
Over 16 ft. to 20 ft……	6 in.
Over 20 ft. to 24 ft……	8 in.

6.6 OPENINGS IN BEARING WALLS.-The area of openings in any transverse horizontal plane of a bearing wall shall not exceed 50 percent of the gross sectional area unless the wall panel can be demonstrated by analysis to be structurally adequate with the increased area of openings.

Section 7 Bonding

7.1 GENERAL.-All multiple wythe masonry loadbearing and non- loadbearing walls shall be bonded in accordance with one of the methods indicated in sections 7.2 through 7.4. For grouted masonry see section 8.

7.2 BONDING WITH MASONRY HEADERS.-Where the facing and backing of solid masonry construction are bonded by means of masonry headers, at least 14 percent of the wall surface of each face shall be composed of headers extending at least 3 in. into the backing. The distance between adjacent full length headers shall not exceed 24 in. either vertically or horizontally. In walls in which a single header does not extend through the wall, headers from the opposite sides shall overlap at least 3 in., or headers from opposite sides shall be covered with another header course overlapping the header below at least 3 in.

7.3 BONDING WITH METAL TIES.-The facing and backing (adjacent wythes) of masonry walls shall be bonded with corrosion-resistant 3/16 in. diameter (1/8 in. diameter for veneer), steel ties or metal wire of equivalent stiffness embedded in the horizontal mortar joints. There shall be at least one metal tie for each 2 sq.ft. of wall area. Ties in alternate courses shall be staggered, the maximum vertical distance between ties shall not exceed 24 in., and the maximum horizontal distance shall not exceed 36 in., except that for cavity walls having less than a 4 in. wythe , the maximum vertical distance between ties shall not exceed 16 in. Rods or ties bent to rectangular shape shall be used with hollow masonry units laid with the cells vertical. In other walls the ends of ties shall be bent to 90 degree angles to provide hooks at least 2 in. long. Additional bonding ties shall be provided at all openings and shall be spaced not more than 3 ft. apart around the perimeter and within 12 in. of the opening.

***7.3.1 BONDING OF WALLS**.-Walls bonded in accordance with this section or section 7.4 shall conform to the allowable stress, lateral support, thickness, height, and mortar requirements for cavity walls unless the collar joints in such walls are filled with mortar.

**Caption supplied by editor.*

7.4 BONDING WITH PREFABRICATED JOINT REINFORCEMENT.-

The facing and backing (adjacent wythes) of masonry walls may be bonded with prefabricated joint reinforcement. There shall be at least one cross wire serving as a tie for each 2 sq. ft. of wall area. The vertical spacing of the reinforcement shall not exceed 16 in.

7.5 BONDING FACED OR COMPOSITE WALLS.-Faced or composite walls may be bonded as provided for in sections 7.2, 7.3, and 7.4. Where the facing and backing are bonded by means of masonry headers, such headers shall extend at least 3 in. into a hollow masonry back-up unit specifically designed to receive and provide mortar bedding for the header.

7.6 BONDING CAVITY AND MASONRY BONDED HOLLOW WALLS.-

7.6.1 Cavity walls-Wythes of cavity walls shall be bonded as required in section 7.3 or 7.4.

7.6.2 Masonry bonded hollow walls-Wythes of masonry bonded hollow walls shall be bonded as required in section 7.2.

7.7 MASONRY LAID IN STACK BOND.-Where unit masonry is laid in stack bond, continuous prefabricated joint reinforcement or other steel bar or wire reinforcement shall be embedded in the horizontal mortar beds at vertical intervals not to exceed 16 in. The longitudinal reinforcement shall be not less than no. 9 steel wire gage. At least one longitudinal bar or wire shall be provided in the prefabricated unit for each 6 in. of wall thickness or fraction thereof.

7.8 ASHLAR, NATURAL OR CAST STONE.-In ashlar masonry, bond stones uniformly distributed shall be provided to the extent of at least 10 percent of the wall area. Such bond stones shall extend at least 4 in. into the backing wall. Rubble stone masonry, 24 in. thick or less, shall have bond stones with a maximum spacing of 3 ft. vertically or horizontally and, if the masonry is thicker than 24 in. shall have one bond stone for each 6 sq. ft. of wall surface on both sides.

7.9 LONGITUDINAL BOND.-In each wythe of masonry loadbearing and non-loadbearing walls, at least 60 percent of the stretchers in any transverse vertical plane shall lap the units above and below at least 2 in. or 1/3 the height of the unit, whichever is greater, or the masonry walls or partitions shall be reinforced longitudinally as required in section 7.7.

7.10 BONDING OF INTERSECTING WALLS AND PARTITIONS.-Bonding of intersecting walls shall be as required in section 9.2.

Section 8 Grounted and Filled Cell Masonry

8.1 MATERIALS.- Only solid masonry units shall be used in grouted masonry construction and only vertical cell hollow masonry units shall be used in filled cell

construction. In grouted masonry, fine grout (Reference Standard RS 10-47) shall be used in grout spaces with a least clear dimension less than 2 in. and coarse grout (Reference Standard RS 10-47) shall be used in grout spaces with a least clear dimension of 2 in. or more. In filled cell masonry, either fine or coarse grout may be used where the least clear dimension of the core is less than 4 in., and coarse grout shall be used where the least clear dimension of the core is 4 in or more.

8.2 CONSTRUCTION.-

8.2.1 Grouted masonry-The masonry units in either the inner or outer wythes, but not necessarily both, shall have a 24-hr. cold water absorption of not less than 5 percent. All masonry units in the inner and outer wythes shall be laid plumb in full head and bed joints and mortar "fins" shall not protrude into spaces designed to be filled with grout. Only type M or S mortar shall be used. All interior joints shall be solidly filled with grout, except that masonry units in the core may be placed or floated in grout poured between the two outer wythes. The grouted longitudinal joints shall be not less than 3/4 in. wide. Where the least clear dimension of the longitudinal vertical joint or core is less than 2 in., the maximum height of pour shall be 12 in. Where the least clear dimension of the longitudinal vertical joint or core is 2 in. or more, the maximum height of grout pour shall not exceed 48 times the least dimension of the longitudinal vertical joint for coarse grout nor 64 times for fine grout, but in no case shall the maximum height of grout pour shall not exceed 12 ft. When grouting is stopped for 1 hr. or longer, the grout poured shall be stopped 1 1/2 in. below the top of a masonry unit and properly rodded or puddled. Masonry bonders shall not be used, but metal wall ties may be used to prevent spreading of the wythes and to maintain vertical alignment of the wall. Where such metal ties are used, they shall be protected as required in section 10.12.

8.2.2 Filled cell masonry-All units shall be laid plumb with full face shell mortar beds. All head (or end) joints shall be filled solidly with mortar for a distance in from the face of the unit or wall not less than the thickness of the longitudinal face shells. Cross webs adjacent to vertical cores shall be fully bedded in mortar to prevent leakage of grout and mortar "fins" shall not protrude into spaces designed to be filled with grout. Only type M or S mortar shall be used. Bond of masonry units in a single wythe shall be provided by lapping units in alternate vertical courses. Where masonry units are laid in stack bond, continuous joint reinforcement shall be used in the bed joints as required by section 7.7. All filled cell masonry shall be built to preserve the unobstructed vertical continuity of the cores. The minimum continuous clear dimensions of vertical cores shall be 2 in. x 3 in. In filling vertical cores, the grout shall not exceed 4 ft. in height. Grout shall be rodded or puddled during placement to insure complete filling of the core. When grouting is stopped for 1 hr. or longer, the grout pour shall be stopped 1 1/2 in. below the top of a masonry unit.

Section 9 Anchorage

9.1 GENERAL.-All elements depending upon one another for continuity or support shall be securely anchored in such a manner as to resist all forces that tend to separate them.

9.2 INTERSECTING WALLS AND PARTITIONS.-Masonry walls and partitions shall be securely anchored or bonded at points where they meet or intersect by one of the following methods:

9.2.1 Bonding-Walls may be bonded by laying at least 50 percent of the units at the intersection in a true masonry bond with alternate units having a bearing of at least 3 in. upon the unit below, by metal ties, joint reinforcement, anchors as specified in section 9.2.3., or by other equivalent method.

9.2.2 Interior non-loadbearing walls – Interior non-loading walls shall be anchored at their intersection, at vertical intervals of not more than 2 ft. on centers, with at least 22 gage corrosion-resistant, corrugated metal ties at least 7/8 in. wide extending at least 4 in. into the masonry or with other ties which provide equivalent anchorage.

9.2.3 Walls carried up separately-Where the courses of meeting or intersecting walls are carried up separately, corner intersections shall be made by regularly toothing or blocking with 8 in. maximum offsets and providing metal anchors having a minimum section of 1/4 in. by 1 1/2 in. with ends bent up at least 2 in., or cross pins at the joints. Such anchors shall be at least 2 ft. long with a maximum vertical spacing of 4 ft. Other types of metal ties, joint reinforcement, or anchors shall be spaced to provide equivalent anchorage at the intersection.

9.3 WALLS ADJOINING OR INTERSECTING STRUCTURAL FRAMING.-Where walls are dependent upon the structural frame for lateral support, they shall be anchored with flexible metal anchors or keyed to the structural members.

9.4 ANCHORAGE OF FURRING.-Masonry furring shall be anchored to the backing with hardware cloth ties consisting of 1/2 in. mesh no. 20 steel wire gage galvanized iron fabric at least 4 in. long and extending at least 1¼ in. into the facing and backing or by an equivalent means of anchorage. Ties shall be spaced no more than 24 in. apart vertically and 36 in. apart horizontally. Such masonry furring shall be excluded in calculating the required wall thickness and shall not be considered as having any structural value.

9.5 ANCHORAGE OF FLOOR JOISTS.-Wood floor joists 5 ft. or more above grade bearing in masonry walls shall be anchored to the wall at intervals not to exceed 6 ft. by metal anchors having a minimum cross section of 0.25 sq. in. and at least 16 in. long. The anchors shall be securely fastened to the joists and built at least 3 1/2 in. into the masonry. Joists 5 ft. or more above grade and parallel to the wall shall be tied to the

wall with metal straps that are spaced not more than 8 ft. on centers and that engage at least three joists. Anchors shall be in line with the bridging or blocking.
Steel floor joists bearing on masonry shall be anchored to the masonry in a manner at least equivalent to that required for wood joists. Concrete slabs bearing on masonry walls require no additional anchorage. The ends of joists, rafters, beams, or girders required to be anchored into walls or bearing partitions shall be continuous and the opposite end shall be similarly anchored into a wall or bearing partition. However, if discontinuous, the discontinuous ends shall lap each other at least 6 in. and shall be well bolted or spiked together, shall be butted and fastened by metal straps or ties, or other means shall be provided for the transfer of thrust between the discontinuous ends.
9.6 ROOF ANCHORAGE.-Roof construction, other than cast-in- place concrete slabs, shall be securely anchored to loadbearing masonry walls with minimum 1/2 in. bolts spaced 8 ft. on center, or their equivalent. The bolts shall extend and be embedded a minimum of 15 in. vertically into the masonry, or where a continuous bond beam is provided, shall be hooked tightly around or welded to at least 0.2 sq.in. of continuous longitudinal bond beam reinforcement placed at least 6 in. from the top of the wall.

Section 10 Miscellaneous Requirements
10.1 CHASES AND RECESSES.-
10.1.1 Limitations-Chases in masonry walls shall not be deeper than 1/8 the wall thickness. Vertical chases adjacent to bearings of beams or lintels, vertical chases wider than 12 in., and all horizontal chases shall be proportioned on the basis of the analysis of stress. No chase shall allowed within the required area of a column or pilaster. The clear spacing between chases shall not be less than three times the width of the larger adjacent chase.
10.1.2 Exceptions for 8 in. walls-In buildings of residential occupancy not over 2 stories in height, vertical chases not more than 4 in. deep and not more than 4 sq. ft. of wall area may be built in 8 in. walls, except that recesses below windows may extend from floor to sill and be the width of the opening above. Masonry directly above chases or recesses wider than 12 in. shall be supported on lintels.
10.2 CORBELLING.-The maximum horizontal projection of corbelling from the face of the wall shall not exceed 1/2 the wall thickness. The maximum projection of one unit shall not exceed ½ the height of the unit or 1/3 its bed depth. The top corbel course shall be a full course of headers at least 6 in. long. Corbelling of hollow walls or walls of hollow units shall be supported on at least one full course of solid masonry. Unless structural support and anchorage is provided to resist the overturning moment, the center of gravity of all projecting masonry or molded cornices shall lie within the middle third of the supporting wall.
10.3 ARCHES AND LINTELS.-The masonry above openings shall be supported by well buttressed arches or by lintels that bear on the wall at each end for at least 4 in.
10.4 PARAPET WALLS.-All cells in the hollow masonry units and all joints in solid, cavity, or masonry bonded hollow wall construction shall be filled solid with mortar. All corners of masonry parapet walls shall be reinforced with joint reinforcement or its equivalent at vertical intervals not greater than 12 in. Such reinforcement shall extend around the corner for at least 4 ft. in both directions and splices shall be lapped at least 6 in. Parapet walls shall be properly coped and flashed with noncombustible, weather-proof material of a width not less than the width of the parapet wall plus sufficient overage for overlaps. Nonreinforced masonry parapet walls shall be not less than 8 in. in thickness and their height shall not exceed three times their thickness. Reinforced parapet walls shall be designed in accordance with the provisions of Reference Standard RS 10-2
10.5 GLASS BLOCK.-Masonry of glass block may be used in nonloadbearing exterior or interior walls and in openings that might otherwise be filled with windows, either isolated or in continuous bands, provided the glass block panels have a thickness of at least 3 1/2 in., at the mortar joint and the mortared surfaces of the blocks are satisfactorily treated for mortar bonding. Glass block shall be laid in type S or N mortar. Both vertical and horizontal mortar joints shall be at least 1/4 in. and not more than 3/8 in. thick and shall be completely filled.
Glass block panels for exterior walls shall not exceed 144 sq. ft. of unsupported wall surface nor 25 ft. in length or 20 ft. in height between supports. For interior walls, glass block panels shall not exceed 250 sq.ft. of unsupported area nor 25 ft. in one direction between supports.
Exterior glass block panels shall be held in place in the wall openings to resist both external and internal pressures due to wind. Panels shall be set in recesses at the jambs, and panels exceeding 10 ft. in horizontal dimension between supports shall be set in recesses at the head so as to provide a bearing surface at least 1in. wide along the panel edges. However, for panels exceeding neither 100 sq.ft. in area nor 10 ft. in either horizontal or vertical dimension, and situated four stories or less and less than 50 ft. above grade level, anchorage may be provided by means of noncorrodible perforated metal strips or equivalent.
Glass block panels shall have reinforcement in the horizontal mortar joints, extending from end to end of mortar joints but not across expansion joints with any unavoidable joints spliced by lapping the reinforcement not less than 6 in. The reinforcement shall be spaced at not more than 2 ft. vertically. In addition, reinforcement shall be placed in the joint immediately above and below all openings within a panel. The reinforcement shall conform to the requirements of section 3.3.1, or shall be equivalent in strength.
Every exterior glass block panel shall be provided with

expansion joints at the sides and top. Expansion joints shall be entirely free of mortar, and shall be filled with resilient material.

10.6 BEARING DETAILS.-Concentrated loads shall be supported upon a solid construction of solid masonry, concrete, or masonry of hollow units with cells filled with mortar, grout, or concrete and of sufficient height to distribute safely the loads to the wall, plaster, or column, or other adequate provisions shall be made to distribute the loads.

10.6.1 Joists-Solid construction for support under joists shall be at least 2 1/4 in. in height, and joists supported on such construction shall extend into the masonry at least 3 in.

10.6.2 Beams-Solid construction for support under beams, girders, or other concentrated loads shall be at least 4 in. in height and the bearing of beams shall extend into the masonry at least 3 in.

10.7 USE OF EXISTING WALLS.-An existing masonry wall may be used in the alteration or extension of a building provided that under the new conditions it meets the requirements of this standard and is structurally sound or is made so.

10.7.1 Walls of insufficient thickness-Existing walls of masonry units that are structurally sound, but that are of insufficient thickness when increased in height, may by strengthened by an addition of similar masonry units laid in type M or S mortar. The foundations and lateral support shall be equivalent to those required for newly constructed walls under similar conditions. All such linings shall be thoroughly bonded into existing masonry by toothings to assure combined action of wall and lining. Toothings shall be distributed uniformly throughout the wall, and shall aggregate in vertical cross- sectional area at least 15 percent of the total surface area of the lining. Stresses in the masonry under the new conditions shall not exceed the allowable stresses of Sections 4.2 and 4.3.

10.8 PRECAUTIONS DURING ERECTION.-
Temporary bracing shall be used whenever necessary to take care of any loads to which the walls may be subjected during erection. Such bracing shall remain in place as long as may be required for safety.

10.9 MIXING MORTAR AND GROUT.-All cementitious materials, aggregates, and water shall be mixed for a minimum of 5 minutes in a mechanical batch mixer. If the mortar begins to stiffen, the mortar may be retempered by adding water and remixing. The consistency of grout shall be such that, at the time of placement, it has a slump of 10 1/2 to 11 in. as determined by Reference Standard RS 10-49. All mortar and grout shall be used within 2 1/2 hr. of initial mixing and no mortar or grout shall be used after if has begun to set.

10.10 FILLING JOINTS.-In unit masonry construction, all vertical and horizontal joints designed to receive mortar or grout shall be completely filled. The thickness of mortar joints in loadbearing masonry shall not exceed 1/2 in. Solid masonry units shall be laid with full head and bed joints. Hollow masonry units shall be laid with full mortar coverage on vertical and horizontal face shells.

10.11 MINIMUM JOINT THICKNESS FOR REINFORCEMENT.-The thickness of grout or mortar between masonry units and reinforcement shall be at least 1/4 in. except that 1/4 in. bars may be laid in 1/2 in. horizontal mortar joints, and no. 6 steel wire gage or smaller wires may be laid in 3/8 in. horizontal joints.

10.12 PROTECTION FOR REINFORCEMENT.-Reinforcement consisting of bars or wire ¼ in. or less in diameter embedded in the horizontal mortar joints shall have at least 5/8 in. horizontal cover.

10.13 WETTING OF MASONRY UNITS.-

***10.13.1 Clay or shale bricks**-All brick having an absorption rate in excess or 0.025 oz. per sq. in. per minute shall be wetted before laying except no wetting shall be permitted for brick used with type H mortar. The method of wetting shall be such as to insure that each unit is nearly saturated, surface dry when laid. During freezing weather, units that require wetting shall be sprinkled with warm water immediately before laying and shall be protected against formation of films of ice. No units with ice on the surface shall be laid.

****264-73 BCR***

10.13.2 STRUCTURAL CLAY TILE.-Structural clay tile having a 1 hr. boiling water absorption of 12 percent or more shall be wetted before laying.

10.13.3 Concrete masonry units-Concrete masonry units shall not be wetted before laying.

10.14 PROTECTION AGAINST FREEZING.-
Adequate equipment shall be used for heating the masonry materials and protecting the masonry during freezing or near-freezing weather. No frozen material or materials containing ice shall be used.

Sand shall be heated in such a manner as to remove frost or ice. Water or sand shall not be heated to temperature above 160 degrees F. When necessary to remove frost, the masonry units shall be heated.

When the outside temperature is below 32°F, an air temperature of at least 32°F shall be maintained on both sides of the masonry for a period of at least 48 hours if type M or S mortar is used, and 72 hours if type N or O mortar is used. These periods may be reduced to 24 and 48 hours, respectively, if high early-strength cement is used. When type H mortar is used and the outside temperature is below 40°F, an air temperature of at least 50°F shall be maintained on both sides of the masonry for a period of 72 hours. This time may be reduced to 24 hours if high early strength cement is used. All methods and materials for the protection of the fresh masonry work against freezing shall be subject to the approval of the commissioner. In general, methods and materials commonly accepted as suitable for the protection of reinforced concrete construction in freezing weather shall be used. Salt or other chemicals for lowering the freezing temperature of the mortar shall not be used.

10.15 STORAGE AT THE SITE.-All materials for masonry construction shall be stored in such a manner

that they are kept free of excessive dirt and wetness.

****10.16 HORIZONTAL COMPRESSION JOINTS**.-All concrete framed high-rise buildings to be constructed over 150 ft.-0 in. in height (as measured from adjoining grade to the main roof level), whose exterior walls are of cavity wall construction with steel lintels, shall have horizontal compression joints in the exterior walls to prevent masonry distress induced by vertical shortening of the structural frame.

(a) Horizontal compression joints shall be 1/4 in. thick in thickness (minimum), with 1/4 inch neoprene polyethylene, or urethane gasket or equivalent joint filler filling the entire joint, except for a recess from the toe of the lintel angle to the exterior of the facing brick, to provide space for caulking. These joints shall be spaced at 40 foot intervals (maximum), and the details shown on the plans.

(b) The applicant of record shall submit a statement (or engineering analysis) that the minimum code requirements as stated in (a) are sufficient to provide for the effects of vertical shortening of the structural frame or specify additional horizontal compression joints of at least 1/4 inch thickness.

*****181-72 BCR***

Section 11 Veneer

11.1 GENERAL.-Veneer as used in this section refers to an exposed facing wythe of brick, tile, ceramic veneer, terra cotta, concrete masonry units, cast stone, natural stone, or similar weather-resistant noncombustible masonry units laid in mortar and securely attached to a surface for the purpose of providing ornamentation, protection or insulation, but not intentionally so bonded as to exert common action under load.

11.1.1 Limitations-Veneer shall not be assumed to add to the strength of any wall, nor shall it be assumed to support any load other than its own weight. No veneer shall be less than the thickness specified in Table RS 10-1.9. The height and length of veneer areas shall be unlimited, except as required to control expansion and contraction and except as provided in subdivision 11.2.

TABLE RS 10-1.9 MINIMUM THICKNESS OF MASONRY VENEER

Type of Veneer	Minimum Thickness Actual (in).
Anchored Type:	
Solid masonry units…..	1 5/8
Hollow masonry units...	1 5/8
Ceramic veneer……..	1
Adhesion Type:	
Solid masonry units…..	3/8
Ceramic veneer……..	3/8

11.1.2 Design-All anchor attachments shall be designed to resist a positive or negative horizontal force of 30 psf, and adhesion type veneer shall be designed to have a bond sufficient to withstand a shearing stress of 50 psi. In lieu of design, veneer may be installed in accordance with the requirements of Section 11.2.1 and 11.3.1.

11.1.3 Support of Veneer-The weight of all anchored type veneer shall be supported upon footings, foundation walls, or other supports. Veneer above openings shall be supported upon lintels.

****11.2 VENEER ON WOOD**.-Anchored masonry veneer attached to wood frame structures shall be supported on footings or foundation walls. The height of the veneer shall not exceed 35 feet measured from the top of the supporting footings or foundation walls. Where anchored veneer exceeding 20 feet in height is applied, it shall be supported in a manner that will provide for movement between the veneer and its backing.

*****Local Law 54-1970***

11.2.1 Attachment-Veneer of unit masonry shall be attached directly to wood studs, by one of the following means:

(a) With at least 22 gage corrosion-resistance corrugated steel ties at least 7/8 in. wide at vertical intervals of not more than 24 in. and horizontal intervals of not more than 32 in., but in no case less than one tie for each 3 1/2 sq. ft. of wall area.

(b) Directly to a 1 in. reinforced cement mortar base.

11.3 VENEER ON MASONRY.-Veneer attached to masonry or concrete backing shall not be limited in height other than by compressive stresses.

11.3.1 **Attachment** -Veneer shall be securely attached to the masonry or concrete backing by one of the following means or by a means that is equivalent in strength:

(a) Metal ties conforming to section 7.3 except that ties shall be spaced not more than 24 in. apart either horizontally or vertically.

(b) Corrosion-resistant dovetail slot anchors where the backing and the veneer has been designed for this type of attachment. Such anchors shall be formed from at least 16 gage steel at least 1 in. wide.

(c) Adhesion type masonry veneer shall be installed in accordance with the manufacturers' recommendations and setting plans.

(d) Where anchored veneer is not grouted to the backing, it shall be supported in a manner that will provide for movement between the veneer and its backing.

Section 12 Miscellaneous Structures and Systems

12.1 FLAT OR SEGMENTAL MASONRY FLOOR OR ROOF ARCHES.-The provisions of this section do not apply when masonry floor or roof arches are proportioned on the basis of structural analysis.

12.1.1 Span.-The maximum clear span between supporting beams shall be 8 ft.

12.1.2 Tie Rods.-All masonry flat arches or segmental arches shall be provided with tie rods in both the exterior and interior spans. The minimum size and spacing of tie rods shall be:

For exterior spans-1 1/4 in. round rods spaced 4 ft.-6 in. apart.
For interior spans-7/8 in. round rods spaced 4 ft.-6 in. apart.
Washers shall be used with all tie rods. All tie rods shall have a minimum specified yield point of 33,000 psi.

12.1.3 Flat Arches.-The depth of flat arches of burnt clay or shale hollow blocks shall be at least 1 1/2 in. for each foot of span, inclusive of the portion of the block extending below the under side of the beam, and such arches shall be at least 6 in. thick. Brick shall not be used for flat arches.

12.1.4 Segmental Arches.-Segmental arches shall have a rise of at least 1 in. per ft. of span, and the minimum thickness shall be 6 in. for hollow tile arches and 4 in. for brick arches with a span of 5 ft. or less and 8 in. for brick arches with a span exceeding 5 ft.

12.1.5 Structural Clay Tile Arches.-The blocks shall be at least two cells deep, shall be laid in type M or S mortar, and shall be properly keyed.

12.1.6 Brick Arches.-Brick arches shall be laid in a full bed of type M or S mortar and shall be solidly bonded.

12.1.7 Openings In Floors And Roofs.-Suitable metal framing or reinforcement shall be provided in masonry arch and roof construction around any opening more than 1 ft.-6 in. on a side.

12.2 CHIMNEYS.-The design of chimneys shall be predicted on the following requirements:

12.2.1 Chimney Walls.-Chimney walls constructed of perforated radial brick with perforations not exceeding 33 per cent of the gross area may be designed using the values shown in Tables RS 10-1-4 and 10-1-5 applicable to solid units.

12.2.2 Chimney Linings.-The lining in chimneys shall not be considered as taking either compression or tension stresses.

12.2.3 Chimney Expansion and Contraction.-Expansion and contraction in chimney walls due to temperature variations shall be accommodated solely by the use of steel reinforcing rings.

12.2.4 Reinforcing Rings.-Reinforcing rings shall be provided at all changes in wall thickness, at the top of the chimney, and above and below all flue openings, but may be omitted at changes in wall thickness for chimneys constructed of perforated radial brick with type M mortar.

** **REFERENCE STANDARD RS 10-1B MASONRY**

ACI 530-92/ASCE 5-92 Building Code Requirements for Masonry Structures, as modified.

ACI 530.1-92/ASCE 6-92 Specifications for Masonry Structures, as modified.

MODIFICATIONS - The provisions of ACI 530-92/ASCE 5-92 shall be subject to the following modifications. The chapter and section numbers are from that standard.

Chapter 1 - General Requirements

Section 1.3 - Approval of special systems of design or construction

Delete this section.

Section 1.4 - Standards cited in this code

Section 1.4.1 - Delete the words "ANSI A 58.1-82 - Minimum Design Loads for Buildings and other structures".

Chapter 5 - General Analysis and Design Requirements

Section 5.2.2. - Delete this section substitute the following:

"5.2.2. - Service loads shall be in accordance with the building code of the city of New York of which this standard forms a part, with such live load reductions as are permitted in the building code of the city of New York. The load provisions of the reference standard RS 9 shall be used."

Chapter 6 - Design Allowing Tensile Stresses in Masonry

Section 6.1.1 - Delete this section and substitute the following:

"6.1.1 - The provisions of this chapter are to be applied in conjunction with the provisions of Chapter 5-General Analysis and Design Requirements and Appendix A."

Section 6.4 - Axial tension

Add the following sentence at the end of section 6.4:

"Axial tension stress shall be resisted entirely by steel reinforcement in accordance with Chapter 7."

Chapter 7 - Design Neglecting Tensile Strength of Masonry Section 7.1.2 - Delete this section and substitute the following:

"7.1.2. - The provisions of this chapter are to be applied in conjunction with the provisions of Chapter 5-General Analysis and Design Requirements and Appendix A."

Chapter 9 - Empirical Design of Masonry

Section 9.1.1.1 - Seismic - Delete this section and substitute the following:

"9.1.1.1 - Seismic - Empirical requirements may apply to the design or construction of masonry for buildings, parts of buildings, or other structures located in New York City."

Section 9.1.1.2 - Wind

Delete this section and substitute the following**:**

"9.1.1.2 - Wind - Empirical requirements shall not apply to the design or construction of masonry for buildings, parts of buildings, or other structures to be located in areas where the basic wind speed will result in wind pressure that exceeds 20 psf."

Section 9.2 - Height

Add the following sentence at the end of section 9.2:

"However, members which are not part of the lateral forces resisting system of the building are permitted to be designed in accordance with the provisions of Chapter 9 of reference standard RS 10-1B in buildings greater than 35 feet in height."

Section 9.9 - Miscellaneous requirements

Delete this section and add the following new Chapter 10:

"Chapter 10 - Miscellaneous Requirements

10.1 - Chases and Recesses - Masonry directly above chases or recesses wider than 12 inches shall be supported on lintels.

10.1.1 - Where permitted - Chases and recesses shall be prohibited in any wall less than 12 inches thick and in the required area of piers and buttresses; except that where permitted in 8-inch walls, in residential buildings and in the apron under window openings, the maximum depth of chases shall be 4 inches.

10.1.2 - Maximum size - The maximum permitted depth of a chase in any wall shall not be more than one-third of the wall thickness, and the maximum length of a

horizontal chase or the maximum horizontal projection of a diagonal chase shall not exceed 4 feet except as provided for in Section 10.1.6; and except further that the maximum length of the apron below window sills in all walls shall not exceed the width of the window opening. Waterproofed chases in such aprons in 8-inch walls shall not exceed 4 inches in depth. The aggregate area of recesses and chases shall be not more than one-fourth of the area of the face of the wall in any one story.

10.1.3 - Waterproofing chases - The backs and sides of all chases in exterior walls with less than 8 inches of masonry to the exterior surface shall be insulated and waterproofed.

10.1.4 - Fire resistive limitations - Chases or recesses shall not reduce the thickness of masonry material below the minimum equivalent thickness required for firewalls, fire separation assemblies or required fire resistive coverings of structural members.

10.1.5 - Hollow walls - Where chases and recesses are permitted in hollow walls and walls constructed of hollow blocks or tile, the chases and recesses shall be built in with the wall. Chases shall not be cut in hollow walls after erection.

10.1.6 - Continuous chases - Where horizontal chases for the bearing of reinforced concrete floors and roof slabs are continuous, anchors shall be installed above and below the floor construction to resist bending and uplift in the wall due to flexure of the slab.

10.2 - Lintels - The design for lintels shall be in accordance with the provisions of Sections 5.6 and 7.3.3. Minimum end bearing shall be 4 inches.

10.3 - Support on wood - No masonry shall be supported on wood girders or other forms of wood construction.

10.4 - Corbelling

10.4.1 - Solid masonry units shall be used for corbelling. The maximum corbelled projection beyond the face of the wall shall be not more than one half of the wall thickness or one half the wythe thickness for hollow walls; the maximum projection of one unit shall neither exceed one half the height of the unit nor one third its thickness at right angles to the face which is offset. Corbelling of hollow walls or walls built of hollow units shall be supported on at least one full course of solid masonry.

10.4.2 - Molded cornices - Unless structural support and anchorage are provided to resist the overturning moment, the center of gravity of all projecting masonry or molded cornices shall lie within the middle one-third of the supporting wall. Terra cotta and metal cornices shall be provided with a structural frame of non-combustible anchored material.

10.5 - Arches and lintels - The masonry above openings shall be supported by properly buttressed
arches or by lintels that bear on the wall at each end for at least 4 inches.

10.6 - Parapet walls - All cells in the hollow masonry units and all joints in solid, cavity, or masonry bonded hollow wall construction shall be filled solid with mortar. All corners of masonry parapet walls shall be reinforced with joint reinforcement or its equivalent at vertical intervals not greater than 12 inches. Such reinforcement shall extend around the corner for at least 4 feet in both directions and splices shall be lapped at least 6 inches. Parapet walls shall be properly coped and flashed with noncombustible, weatherproof material of a width not less than the width of the parapet wall plus sufficient overage for overlaps. Masonry parapet walls shall be not less than 8 inches in thickness and their height shall not exceed three times their thickness. Parapet walls shall be designed in accordance with the provisions of Appendix A.

10.7 - Isolated piers - Isolated masonry piers shall be bonded as required for solid walls of the same thickness and shall be provided with adequate means for distributing the load at the top of the pier.

10.8 - Bearing details - Concentrated loads shall be supported upon construction of solid masonry, concrete, or masonry of hollow units with cells filled with mortar, grout, or concrete and of sufficient height to distribute safely the loads to the wall or column, or other adequate provisions shall be made to distribute the loads.

10.8.1 - Joists - Solid construction for support under joists shall be at least 2 1/4 inches in height, and joists supported on such construction shall extend into the masonry at least 3 inches.

10.8.2 - Beams - Solid construction for support under beams, girders, or other concentrated loads shall be at least 4 inches in height and the bearing of beams shall extend into the masonry at least 4 inches.

10.9 - Use of existing walls - An existing masonry wall may be used in the alteration or extension of a building provided that it meets the requirements of this standard.

10.9.1 - Walls of insufficient thickness - Existing walls of masonry units that are structurally sound, but that are of insufficient thickness when increased in height, may be strengthened by an addition of similar masonry units laid in type M or S mortar. The foundations and lateral support shall be equivalent to those required for newly constructed walls under similar conditions. All such linings shall be thoroughly bonded into existing masonry by toothings to assure combined action of wall and lining. Toothings shall be distributed uniformly throughout the wall, and shall aggregate in vertical cross-sectional area at least 15 percent of the total surface area of the lining. Stresses in the masonry under the new conditions shall not exceed the allowable stresses.

10.10 - Precautions during erection - Temporary bracing shall be used wherever necessary to take care of any loads to which the walls may be subjected during erection. Such bracing shall remain in place as long as may be required for safety.

10.11 - Horizontal compression joints - All concrete framed buildings to be constructed over 35 feet in height (as measured from adjoining grade to the main

roof level), whose exterior wythe are of cavity wall construction with steel lintels, shall have horizontal compression joints in the exterior wythe to prevent masonry distress induced by vertical shortening of the structural frame.

(a) Unless substantiated as indicated by (b) below, horizontal compression joints shall be 1/4 inch minimum thickness, with neoprene, polyethylene, or urethane gasket or equivalent joint filler filling the entire joint, except for a recess from the toe of the lintel angle to the exterior of the facing brick, to provide space for caulking. These joints shall be spaced at each floor.

(b) The applicant of record shall submit an engineering analysis establishing that proposed building compression joints spaced further apart than in (a) above are sufficient to provide for the effects of vertical shortening of the structural frame.

10.12 - Dry-Stacked, surface-bonded masonry walls

10.12.1 - General - Dry-Stacked, surface-bonded masonry walls may be used for only one and two family dwellings and shall comply with requirements of this code for masonry wall construction.

10.12.2 - Materials - Surface-bonding mortar shall comply with ASTM C476. Concrete masonry units shall comply with ASTM C55, C90 or C145.

10.12.3 - Design - Dry-stacked, surface-bonded masonry walls shall be of adequate strength and proportions to support all superimposed loads without exceeding the allowable stresses listed in Table 10.12.3. Allowable stresses not specified in Table 10.12.3. shall comply with the requirements in this standard.

Table 10.12.3
ALLOWABLE STRESS GROSS CROSS-SECTIONAL AREA

Description	Maximum allowable stress (psi)
Compression	
Standard block…….	45
Shear……	10
Flexural tension	
Vertical span……	18
Horizontal span……	30

10.12.4 - Construction - Construction of dry-stacked, surface-bonded masonry walls, including stacking and leveling of units, mixing and application of mortar, curing and protection, shall comply with ASTM C946.

10.13 - Glass-block walls

10.13.1 - Exterior wall panels - The maximum dimensions of glass-block wall panels in exterior walls, where used singly or in multiples to form continuous bands of glass blocks between structural supports, shall be 25 feet in length and 20 feet in height between structural supports and expansion joints; and the area of each individual panel shall not be more than 250 square feet. Intermediate structural supports shall be provided to support the dead load of the wall and all other superimposed loads. Where individual panels are more than 144 square feet in area, a supplementary stiffener shall be provided to anchor the panels to the structural supports

10.13.2 - Joint materials - Glass blocks shall be laid up in Type S or N mortar with approved galvanized metal panel anchors in the horizontal mortar joints of exterior panels The sills of glass-block panels shall be coated with approved water-based asphaltic emulsion, or other elastic waterproofing material, prior to laying the first mortar course, and the perimeter of the panels shall caulked to a depth of not less than ½ inch with nonhardening caulking compound on both faces, or expansion joints shall be provided. Where placed in joint materialsother than mortars herein defined, a single panel shall not be more than 100 square feet in area, nor more than 10 feet in either length or height.

10.13.3 - Wind and seismic loads - Exterior wall panels held in place in the wall openings shall be designed to resist both the internal and external loads due to wind and seismic loads.

10.13.4 - Interior wall panels - Solid or hollow glass blocks shall not be used in fire walls, party walls, fire separation assemblies or fire partitions, or for loadbearing construction. Such blocks shall be erected with mortar and reinforcement in metal frames, structural channels or embedded panel anchors as provided for exterior walls or other joint materials. All mortar-bearing surfaces of the glass block shall be precoated or prepared to insure adhesion between mortar and glass. Wood strip framing shall not be used in fire separation assemblies that are required to be fire resistance rated.

Exceptions: Glass-block assemblies with a material and equipment acceptance number or Board of Standards and Appeals number having a fire-resistance rating of not less than 3/4 hour shall be permitted in fire separations which have a required fire resistance rating of one hour or less and do not enclose exit stairways or exit passageways.

10.14 - Veneer

10.14.1 - General - Veneer, as used in this section, refers to an exposed facing wythe of brick, tile, ceramic veneer, terra cotta, concrete masonry units, cast stone, natural stone, or similar weather-resistant noncombustible masonry units laid in mortar and securely attached to a surface for the purpose of providing ornamentation, protection or insulation, but not intentionally so bonded as to exert common action under load. In lieu of the provisions of Section 10.14, veneers may be designed according to Chapters 5, 6 and 9 of reference standard RS 10-1B.

10.14.1.1 - Limitations - Veneer shall not be assumed to add to the strength of any wall, nor shall it be assumed to support any load other than its own weight. No veneer shall be less than the thickness specified in Table 10.14.1.1. The height and length of veneer areas shall be unlimited, except as required to control expansion and contraction, and except as provided in Section 10.14.2.

TABLE 10.14.1.1 Minimum Thickness of Masonry Veneer

Type of Veneer	Minimum Thickness Actual (in.)
Anchored Type:	
Solid masonry units	1 5/8
Hollow masonry units	1 5/8
Ceramic veneer	1
Adhesion Type:	
Solid masonry units	3/8
Ceramic veneer	3/8

10.14.1.2 - Design - All anchor attachments shall be designed to resist a minimum positive or negative horizontal force as required for wind or seismic effects, and adhesion type veneer shall be designed to have a bond sufficient to withstand a shearing stress of 50 psi. At a minimum, the veneer shall also meet the attachment requirements of Sections 10.14.2.1 and 10.14.3.1.

10.14.1.3 - Support of veneer - The weight of all anchored type veneer shall be supported upon footings, noncombustible foundation walls, or other approved supports. Veneer above openings shall be supported upon noncombustible, non-corrosive lintels.

10.14.2 - Veneer on wood - Anchored masonry veneer attached to wood frame structures shall be supported on noncombustible footings or foundation walls. The height of the veneer shall not exceed 35 feet measured from the top of the supporting footings or foundation walls. Where anchored veneer exceeding 20 feet in height is applied, it shall be supported in a manner that will provide for movement between the veneer and its backing.

10.14.2.1 - Attachment - At a minimum, veneer of unit masonry shall be attached directly to wood studs, by one of the following means:

(a) With at least 22 gage corrosion-resistance corrugated steel ties at least one inch wide, at vertical intervals of not more than 24 inches and horizontal intervals of not more than 32 inches, but in no case less than one tie for 3 1/2 square feet of wall area;

(b) Directly to a 1 inch reinforced cement mortar base.

10.14.3 - Veneer on masonry - Veneer attached to masonry or concrete backing shall not be limited in height other than by compressive stresses.

10.14.3.1 - Attachment - At a minimum, veneer shall be securely attached to the masonry or concrete backing by one of the following means or by a means that is equivalent in strength:

(a) Metal ties conforming to Section 5.8 except that ties shall be spaced not more than 24 inches apart either horizontally or vertically;

(b) Corrosion-resistant dovetail slot anchors where the backing and the veneer has been designed for this type of attachment. Such anchors shall be formed from at least 16 gage steel at least 1 inch wide;

(c) Adhesion type masonry veneer shall be installed in accordance with the manufacturer's recommendations and setting plans;

(d) Where anchored veneer is not grouted to the back, it shall be supported in a manner that will provide for movement between the veneer and its backing.

10.15 Miscellaneous structures and systems

10.15.1 - Flat or Segmental Masonry Floor or Roof Arches - The provisions of this section do not apply when masonry floor or roof arches are proportioned on the basis of structural analysis.

10.15.1.1 - Span - The maximum clear span between supporting beams shall be 8 feet.

10.15.1.2 - Tie Rods - All masonry flat arches or segmental arches shall be provided with tie rods in both exterior and interior spans. The minimum size and spacing of tie rods shall be:

For exterior spans- 1 1/4 inches round rods spaced 4 feet 6 inches apart.

For interior spans- 7/8 inches round rods spaced 4 feet 6 inches apart.

Washers shall be used with all tie rods. All tie rods shall have a minimum specified yield point of 36,000 psi.

10.15.1.3 - Flat arches - The depth of flat arches of burnt clay or shale hollow blocks shall be at least 1 1/2 inches for each foot of span, inclusive of the portion of the block extending below the under side of the beam, and such arches shall be at least 6 inches thick. Brick shall not be used for flat arches.

10.15.1.4 - Segmental arches - Segmental arches shall have a rise of at least 1 inch per foot of span, and the minimum thickness shall be 6 inches for hollow tile arches, 4 inches for brick arches with a span of 5 feet or less, and 8 inches for brick arches with a span exceeding 5 feet.

10.15.1.5 - Structural clay tile arches - The blocks shall be at least two cells deep, shall be laid in type M or S mortar, and shall be properly keyed.

10.15.1.6 - Brick arches - Brick arches shall be laid in a full bed of type M or S mortar and shall be solidly bonded.

10.15.1.7 - Openings in floors and roofs - Suitable metal framing or reinforcement shall be provided in masonry arch and roof construction around any opening more than 1 foot 6 inches on a side."

Appendix A - Special Provisions for Seismic Design.

Section A.1.1.1 - Delete this section and substitute the following:

"A.1.1.1 - Appendix A sets special requirements for masonry and construction of masonry building elements for seismic design as defined in reference standard RS 9-6."

Section A.2 - Delete this section.

Section A.3 - Delete the words "for Seismic Zone 2."

Section A.3.3 - Delete this section and substitute the following:

"A.3.3 - Distribution of seismic loads or forces shall be

in accordance with the provisions of reference standard RS 9-6."

Section A.3.6 - Delete the first two sentences and substitute the following:

"Masonry walls which require lateral forces shown in Table 23-P of reference standard RS 9-6 shall be anchored to all floors and roofs which provide lateral support for the walls. The anchorage of such walls or partitions shall provide direct connection capable of resisting the forces derived from Table No. 23-P or a minimum of 200 pounds per lineal foot of wall, whichever is greater."

Section A.3.8 - Delete this section and substitute the following:

"A.3.8 - Vertical reinforcement of at least 0.20 square inches in cross sectional area shall be provided continuously from support to support at each corner, at each side of each opening, at the ends of walls and at a maximum spacing of 10 feet apart throughout the wall. Horizontal reinforcement not less than 0.20 square inches in cross sectional area shall be provided: (1) at the bottom and top of wall openings and shall extend not less than 24 inches nor less than 40 bar diameters past the opening; (2) continuously at structurally connected roof and floor levels and at the top of walls; (3) at the bottom of the wall or in the top of the foundations when dowelled to the wall; (4) at maximum spacing of 10 feet unless uniformly distributed joint reinforcement is provided. Reinforcement at the top and bottom of openings when used in determining the maximum spacing specified in item (4) above shall be continuous in the wall."

Add the following sections:

"A.3.10 - Non-bearing back-up or infill walls and non-bearing partitions need not comply with the vertical and horizontal (2 way) reinforcing requirements of section A.3.8 if the requirements set forth in A.3.10.1 through A.3.10.4 are met.

A.3.10.1 - The cross sectional area of uniformly spaced steel reinforcement in either the horizontal or the vertical direction shall equal or exceed 0.0005 times the gross cross sectional area of the masonry.

A.3.10.2 - Reinforcement shall be continuous between supports.

A.3.10.3 - Spacing of prescribed horizontal reinforcement shall not exceed 16 inches for joint reinforcement and 4 feet for reinforcement bars in grouted bond beams. When vertical reinforcement is used, bars shall not exceed placement at 10 feet on center and at the ends of walls.

A.3.10.4 - Lateral support anchorage shall be provided between the non-loadbearing back-up, infill or partition wall and its structural support. Spacing of anchors shall conform to the provisions of Sections 4.2 and 5.11 and shall not exceed the spacing of prescribed reinforcement. Anchorage shall be designed to transfer lateral (out-of-plane) forces to the adjacent structural support."

Section A.4 - Delete this section.

MODIFICATIONS - The provisions of ACI 530.1-92/ASCE 6-92 shall be subject to the following modifications. The chapter and section numbers are from that standard.

2.3.1. - Inspection and testing.

Delete the opening sentence and substitute the following:

"Inspection shall conform to the requirements of Articles 1.5 and 1.6, the inspection and testing provisions of the building code of the city of New York, and the following:"

*****Local Law 17-1995***

* REFERENCE STANDARD RS 10-2
REINFORCED MASONRY

ACI 530-92/ASCE 5-92 Building Code Requirements for Masonry Structures, as modified.

ACI 530.1-92/ASCE 6-92 Specifications of Masonry Structures, as modified.

MODIFICATIONS - The provisions of ACI 530-92 and ACI 530.1-92 shall be subject to the same modifications as set forth in reference standard RS 10-1B and shall apply to reinforced masonry.

EXCEPTION - For buildings designed utilizing reinforced masonry construction in existence on the effective date of this local law, repairs or alterations to the facade or interior of the structure shall be done in accord with ACI 530-92/ASCE 5-92 Building Code Requirements for Masonry Structures, as modified and ACI 530.1-92/ASCE 6-92 Specifications for Masonry Structures, as modified except for those provisions found in Appendix A Special Provisions for Seismic Design.

**** Local Law 17-1995; 264-73 BCR***

** REFERENCE STANDARD RS 10-3
ACI 318-1989 BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE

Comments - The commentary on Building Code Requirements for Reinforced Concrete (ACI 318-89) may be used as a guide for interpreting this standard.

MODIFICATIONS - The provisions of ACI 318-89 shall be subject to the following modifications. The section and subdivision numbers are from that standard.

-Delete this section and substitute the following:

"1.2.1 - The applicable provisions of the building code of the city of New York shall apply."

1.2.2 -Delete this section.

1.2.3 -Delete this section.

1.3.1 -Delete this section and substitute the following:

"1.3.1 - The applicable provisions of the building code shall apply."

1.3.2 -Delete this section.
1.3.4 -Delete this section.
1.4 -Delete this section and substitute the following:
"1.4 - The provisions of the building code for equivalent systems of design shall apply."
3.1.3 -Delete this section.
3.6.6 -Delete this section and substitute the following:
"3.6.6 - Fly Ash may be used in lieu of Chemical Admixtures (ASTM C494) RS 10-44."
-Delete "5.3.2" on the second line and insert the words "Section 5.6.1.6 as listed", and delete the last sentence.
5.1.2 -Delete "5.6.2" on the second line and insert the words " the New York City Building code".
5.2.1(c) -Delete "5.6" on the second line and insert the words " the New York City Building code".
5.2.3 -Delete this section.
5.3 -Delete the words "and/or trial mixtures".
-Delete the words "Standard deviation" and insert the words "Method II Proportioning on the basis of field experience".
5.3.1.1(c) -Delete the words "except as provided in 5.3.1.2".
5.3.1.2 -Delete in its entirety, including Table 5.3.1.2.
5.3.2.1 -Delete "or 5.3.1.2" at the end of the sentence.
5.3.2.2 -Delete in its entirety, including Table 5.3.2.2.
5.3.3 -Delete the words "several strength test records, or trial mixtures" at the end of the sentence.
-Delete the third sentence starting with words "For the purpose of" and ending with the words "less than 45 days".
-Add a period on the third line after the word "mixtures", delete the remainder of the section, and add the following sentence:
"The Trial mixtures shall conform to the provisions of Section 27-605(a)(3) of the New York City Building Code."
5.4.1 -Delete this section and substitute the following:
"Proportioning shall conform to New York City Building Code Section 27-605(a) Method I."
Table 5.4 -Delete in its entirety.
5.4.2 -Delete this section.
5.4.3 -Delete this section.
5.5 (b) -Delete this section.
5.6.1.1 -Delete this section and substitute the following:
"5.6.1.1 - Whenever strength tests of concrete specimens are required by the provisions of the building code of the city of New York, compression test samples shall be taken directly from the mixer in accordance with reference standard RS 10-51, cured in accordance with reference standard RS 10-52, and tested at the age of 28 days or as otherwise specified in accordance with reference standard RS 10-17."
5.6.1.2 -Delete this section and substitute the following:
"5.6.1.2 - Three test specimens shall be molded for each 50 cubic yards or fraction thereof for each class of concrete placed in any one day's concreting. In addition, concrete test specimens shall be made from concrete taken out of the bucket, hopper or forms as directed by the engineer designated for controlled inspection. These test specimens shall be separate and distinct from those made from the mixer and shall be made from the same batch and cured and tested in the same manner as described above for the samples taken from the mixer."
5.6.1.3 -Delete this section and substitute the following:
"5.6.1.3 - The number of test specimens made from the concrete taken out of the bucket, hopper or forms may be reduced to a minimum of one set of three (3) specimens for every 150 cubic yards, or fraction thereof, for each class of concrete placed in any one day's concreting. When the concrete is being placed directly from the mixer into the forms without any intermediate conveyance, the above additional specimens will not be required."
5.6.1.4 -Delete this section and substitute the following:
"5.6.1.4 - Additional specimens may be molded and tested where there is a question as to the required interval between placing of concrete and stripping forms or placing the structure into use."
Add the following section:
"5.6.1.5 - The test specimens shall be tested by licensed concrete testing laboratory. The testing of each batch of three specimens shall be considered one strength test. The strength of such test shall be the average of the breaking strengths of the three specimens comprising the test, except that if one of the specimens shall manifest evidence of improper sampling, molding, handling or testing, it shall be discarded and the remaining two averaged. If more than one specimen must be discarded, the entire strength test shall be voided."
Add the following section:
"5.6.1.6 - The average of all sets of three consecutive strength tests representing each class of concrete shall be equal or greater than the specified strength (f'_c) and not more than 10% of the strength tests shall have values less than the specified strength, but no test shall show an average strength less than 85% of the specified

strength."

5.6.2.1 -Delete this section.

5.6.2.2 -Delete this section.

-After the word "satisfactory" in the second line, delete the remainder of the section and add the words "if the provisions of Section 5.6.1.6 are met".

5.6.2.4 -Delete this section.

5.6.3.1 -Delete the words "Building Official" on the first line and insert the word "Commissioner".

-Delete the first three lines through the words "[Section 5.6.2.3(b)]", and substitute the following: "If tests of laboratory cured specimens fail to conform to the requirements of Section 5.6.1.6 refer to Section 5.6.3.4."

-Delete the words "strength test more than 500 psi below specified value of f'_c and insert the words "set of three specimen tests which fail to conform to the requirements of Section 5.6.1.6."

Add the following section:

"5.9.3 - Conveying by pumping methods shall be in accordance with the applicable provisions of the Building Code."

-Add a period on the second line after the word "used", delete the words "unless approved by the Engineer" and add the following sentence: "For additional requirements see applicable provisions of the Building Code Section 27-607(a)(2)."

Add the following sections:

"5.14 - SPECIAL REQUIREMENTS FOR HIGH STRENGTH CONCRETE

5.14.1 - All high strength concrete (6000 PSI and higher) shall be proportioned and manufactured only in accordance with the provisions of Building Code Section 27-605(b) Method II Proportioning on the basis of field experience.

5.14.2 - All high strength concrete specimens shall be made utilizing metal or plastic molds that comply with reference standard RS 10-52. Each test shall consist of eight specimens taken directly from the mixer. Two specimens shall be tested at seven days, three at 28 days and three at 56 days. These requirements are in addition to the hopper specimens as required by the Building Code.

5.14.3 - At the time of placement of high strength concrete, two concrete production facilities shall be available. Said facilities shall have been previously approved by the architect or engineer designated for controlled inspection.

5.14.4 - All high strength concrete for columns shall be of normal weight concrete.

5.14.5 - The requirements of Section 10.13.4 shall be adhered in all respects.

5.14.6 - Where lightweight concrete is to be used for the floor system, the columns and the beam or slab "sandwich" immediately above the columns shall be stone concrete, placed in accordance with the requirements of Section 10.13.

5.14.7 - The engineer will insure that there are no cold joints at the interface between the lightweight concrete and stone portions of the slabs or beams.

5.14.8 - All data shall be submitted periodically to the Department of Buildings for review."

Add the following section:

"6.1.7 - For additional form work requirements, see applicable provisions of Building Code Section 27-1035."

Add the following sections:

"6.3.13 - Concrete cover over electrical cables and snow melting pipes in sidewalks shall meet the requirements of the Bureau of Highways of the Department of Transportation.

6.3.14 - No conduits, pipes or other similar embedded items will be permitted in prestressed or post-tension concrete members other than as shown on the plans as filed with the Department of Buildings or on shop drawings reviewed by the engineer of record. Computations demonstrating the effects of such embedded items on the structural adequacy of prestressed or post-tensioned concrete shall be submitted."

Add the following section:

"10.13.4 - When the specified compressive strength of concrete in a column is greater than 1.4 times that specified for a floor system, the following additional requirements shall be adhered to:

(a) All of the design provisions of Section 10.13 (unmodified) are adhered to.

(b) Application is made to the Borough Superintendent in each individual case.

(c) The concrete construction is supervised and inspected continuously by a full-time Professional Engineer responsible for controlled inspection of concrete and not in the regular employ of the owner or contractor. Such engineer shall perform no other work during the construction of the particular building nor shall he delegate his responsibility to any subordinates.

(d) The Professional Engineer referred to in subdivision (c) above, without incurring any personal liability, shall be authorized to stop construction, reject any concrete, direct that the concrete testing laboratory being used be dismissed and a new laboratory be retained.

(e) Affidavits by the parties involved shall be filed with and be acceptable to the Borough Superintendent prior to approval of any plans."

Add the following section:

"12.1.3. - Development (Section 12.2) and splice lengths (Section 12.5) computed based on the minimum requirements of the ACI 318-83 code are deemed equally applicable for usage.

- Delete this section and substitute the following:

"16.4.2 - Lifting devices shall have a capacity sufficient to support four times the appropriate portion of the members dead weight. The inclination of the lifting force shall be considered."

16.4.2.1 - Delete this section.

16.4.2.2 - Delete this section.

16.4.2.3 - Delete this section.

- Add the following sentence to the beginning of this section: "New York City is to be considered in a region of moderate risk."

***Local Law 17-1995; 1077-86 BCR**

* REFERENCE STANDARD RS 10-4
PRECAST CONCRETE AND PRESTRESSED CONCRETE

ACI 318-1989 Building Code Requirement for Reinforced Concrete

MNL-120-1985 Prestressed Concrete Institute Design Handbook, Third Edition.

MODIFICATIONS - The applicable section of ACI 318-89 as modified by the applicable provisions of reference standard RS 10-3 shall apply for precast concrete and prestressed concrete.

***Local Law 17-1995; 455-89 BCR; 1077-86 BCR**

*** REFERENCE STANDARD RS 10-5A

AISC-1993 Specification for Structural Steel Buildings - Allowable Stress Design and Plastic Design, effective June 1, 1993, as modified.

MODIFICATIONS - The provisions of AISC-ASD 1989, Specification for Structural Steel Buildings - Allowable Stress Design and Plastic Design, shall be subject to the following modifications. The section and paragraph numbers are from that standard.

CHAPTER A GENERAL PROVISIONS

A3 MATERIAL - Add the following after the next to last paragraph of section A3.1a.

"Special Steels other than those listed above may be used in accordance with the provisions of this reference standard when approved by the NYCDOB for such use."

A4 LOADS AND FORCES - Delete this text and substitute the following:

"The provisions of the building code for loads shall apply".

A5 DESIGN BASIS - Delete the text of Subsection 2. Wind and Seismic Stresses and substitute the following:

"The applicable provisions of the Building Code for combinations of loads shall apply."

A6 REFERENCED CODES AND STANDARDS - Revise the list of publications of the following listed standards to read as follows:

American National Standards institute
ANSI/ASCE 7-93 (Formerly ANSI A58.1-82)

American Society for Testing and Materials

ASTM A6-94a	ASTM A27-93	ASTM A36-94
ASTM A53-93a	ASTM A148-93b	ASTM A193-94b
ASTM A194-94a	ASTM A242-93a	ASTM A307-94
ASTM A325-94	ASTM A354-94	ASTM A449-93
ASTM A490-93	ASTM A500-93	ASTM A501-93
ASTM A502-93	ASTM A514-94a	ASTM A529-94
ASTM A563-94	ASTM A570-92	ASTM A572-94b
ASTM A588-94	ASTM A606-91a	ASTM A607-92a
ASTM A618-93	ASTM A668-93	ASTM A687-93
ASTM A709-94A	ASTM A852-93a	ASTM C33-93
ASTM C330-89	ASTM F436-93	

American Welding Society

AWS D1.1-94	AWS A5.1-91	AWS A5.5-89
AWS A5.17-89	AWS A5.18-93	AWS A5.20-89
AWS A5.23-90	AWS A5.28-90	AWS A5.29.89

Research Council on Structural Connections

Specification for Structural Joints Using ASTM A325 or A490 Bolts, 1988

CHAPTER B DESIGN REQUIREMENTS B 11 PROPORTIONING OF CRANE GIRDERS

Add the following at the end of the section.

"The applicable provisions of the Building Code for moving loads shall apply."

CHAPTER H COMBINED STRESSES

H1 AXIAL COMPRESSION AND BENDING - In the last sentence of the definition of F'_c, delete the reference to Section A5.2 and substitute the following:

"The provisions of the Building Code for wind load shall apply."

CHAPTER I COMPOSITE CONSTRUCTION

I1 DEFINITION - Add the following paragraph as the first paragraph:

"Composite construction used for members subjected to heavy vehicle loads, as defined in the Building Code for moving loads (except where applied vehicle is limited to passenger cars), shall be proportioned in accordance with the requirement of reference standard RS 9-3.

Add the following as item 4 of the new third paragraph:

"4. The minimum specified compressive strength of concrete (f'_c) for all encased composite beams shall be 3,000 lbs. per sq. in. and shall meet the applicable requirements of the Building Code."

I2 DESIGN ASSUMPTIONS - Add the following after the term, "$0.76F_y$" in the last sentence of section I2, paragraph 1:

"provided the encased beam is A36 steel, not more than 40 inches in depth and the concrete is made with ASTM C33 aggregate."

I4 SHEAR CONNECTORS - Add the following at the end of the third paragraph:

"For aggregate not complying with the above, the Department of Buildings Rules for Design of Composite Construction with Metal Decks or Lightweight Concrete dated Sept. 8, 1975 shall be used. Working values for use with construction for which design values have not been established in accordance with the foregoing and for connector types other than those shown in Table I4.1 shall be established by a prequalified load test as set forth in Section 27-599. The minimum specified compressive strength of concrete (f'_c) shall be 3,000 psi.

CHAPTER J CONNECTIONS, JOINTS AND FASTENERS

J1.GENERAL PROVISIONS

9. PLACEMENT OF WELDS, BOLTS AND RIVETS - At the end of the last sentence add the following:

"The foregoing provisions notwithstanding, the eccentricity perpendicular to the plane of the connection shall be considered in proportioning both the member and the connection."

J2.WELDS - Add the following paragraph before the first paragraph in Sec. J2.

"The provisions of the Building Code for welding operations, the Board of Standards and Appeals Rules for ARC and GAS Welding and Oxygen cutting of steel covering the Specifications for Design, Fabrication and Inspection of ARC and GAS Welding Steel Structures and the Qualification of Welders and Supervisors, and Board of Standards and Appeals Rules for Electroslag Welding Approvals shall apply."

Add the following paragraph after the first paragraph in Sec. J2.:

"Welding equipment used to perform submerged - arc, gas metal - arc and flux cored arc welding of high strength steel; and electro-slag or electro-gas welding of all steel shall be approved."

J3.BOLTS, THREADED PARTS AND RIVETS

2. Size and Use of Holes - Add the following after the title of paragraphs c., d., and e;

"subject to the approval of the engineer of record,"

6.Combined Tension and Shear in Slip-critical Joints - Delete the last sentence in Section 6. and substitute the following:

"Allowable stresses for A combination of loads for A325 and A490 bolts shall be used in slip-critical connections. The applicable provisions of the Building Code for wind load shall apply."

CHAPTER K SPECIAL DESIGN CONSIDERATION

K2.PONDING - Add the following paragraph:

In roof systems where secondary members are made up of materials other than steel, the depth of beams and girders supporting flat roofs shall not be less than $f_b/600$ times their span length whether designed as simple or continuous spans."

K4.FATIGUE - The provisions of this section shall not apply to the design of overhead beams for elevators and hoisting apparatus nor to their immediate supporting framing.

CHAPTER L SERVICEABILITY DESIGN CONSIDERATIONS

L2.EXPANSION AND CONTRACTION - Delete this text and substitute the following:

"The provisions of the building code for loads due to thermal forces shall apply."

L6. MINIMUM THICKNESS OF METAL - Add this additional section following Section L5 CORROSION:

"L6. MINIMUM THICKNESS OF METAL All exterior members of structural steel, except roofing and siding, that are exposed to the weather shall have a protective coating as required by the provisions of Section M3,1. and shall have a minimum thickness of metal of 0.23 in.

Exception: The minimum thickness of metal may conform to the requirements for stress under the following conditions:

1. Exterior members exposed to the weather - An approved type of atmospheric corrosion resistant steel is used or exposed surfaces are zinc coated with a minimum weight of coating of approximately 0.6 ounces per square foot of exposed surface and covered with a protective coating as required by section M3 or exposed surfaces are protected by other means.
2. Members not exposed to the weather - All members, except that members located where they would be subject to accidental impact, shall be stiffened to resist such impact.
3. Roofing and siding - All members, provided that surfaces which are exposed to the weather shall have a protective coating.
4. Temporary construction that will be in place for a period of one year or less, provided that all surfaces which are exposed to the weather shall have a protective coating.
5. Joists or purlins that are exposed to the weather but which do not support more than 200 sq. ft. of floor or roof area, and which have a protective coating as required by section M3,1.

CHAPTER M FABRICATION, ERECTION AND QUALITY CONTROL

M1. SHOP DRAWINGS - Add the following paragraph to Section M1.

"The shop drawings shall include the location of oversized, short-slotted or long-slotted holes."

M3. SHOP PAINTING

1. **GENERAL REQUIREMENTS** - Delete this section and substitute the following:

"1. PAINTING OF STRUCTURAL STEEL

(a) All structural steel, except as provided in subsection (b) of this section, shall receive one coat of paint, zinc, or bituminous coating, or equivalent metal protection before erection. The protection shall be applied thoroughly and evenly to dry surfaces which have been cleaned of loose mill scale, loose rust, weld slag flux deposit, dirt, and other foreign matter. Oil and grease deposits shall be removed. Surfaces inaccessible after assembly shall be treated as required above prior to assembly.

(b) Surfaces of structural steel shall not be required to receive metal protection when the structural steel is used under the conditions listed in paragraph (1) through (7) below. However, these surfaces shall be cleaned of oil and grease by solvent cleaners and be cleaned of dirt and other foreign material by thorough brushing with a fiber brush.

(1) Structural steel that is encased in concrete (other than cinder concrete) or surfaces that abut concrete (other than cinder concrete) at interior locations.

(2) Structural steel encased in non-corrosive fire resistive materials that are bonded or secured to the steel surfaces by approved means.

(3) Surfaces of structural steel that are to be riveted, bolted or welded together.

(4) Surfaces of structural steel within 2 in. of field welds shall be free of protective coatings that would prevent proper welding or produce objectionable fumes while welding is being done.

(5) Surfaces of structural steel that have been machine finished.

(6) Surfaces of types of structural steel that have been specifically approved for use without metal protection.

(7) Structural steel members that are completely concealed by interior finish such as lath and plaster, masonry, etc., need not be painted except that where such members are subject to condensation from piping, are in shower or steam rooms, are exposed to chemical fumes or are exposed to other conditions of potentially aggressive corrosion.

(c) Parts of structural members left unpainted because of welding, bolting or riveting operations are not exempted from painting by the provisions of subsection (b) above shall receive a field application of metal protection as prescribed in subsection (a) above.

(d) Structural steel that will remain exposed to the weather or to a corrosive atmosphere shall receive an additional coat of metal protection of another color after erection, except for types of structural steels that have been specifically intended for use under exposure to the weather without protection.

(e) All abrasions to, or deteriorations of, the protective coating shall be spot painted."

M4. ERECTION

6. Delete in its entirety.

7. FIELD CONNECTIONS - Add the following paragraph to Section 7:

"Field connections shall meet the requirements for corresponding types of shop connections described in section M2. No holes, copes or cuts of any type shall be made to facilitate erection unless specifically shown on the shop drawings or authorized in writing by the engineers or architect of record.

Add the following new Section 8:

"8. HANDLING AND STORING

Reference Standard 10

MATERIALS

"All steel members shall be shipped and handled in a manner that will not cause injury to protective coatings or permanent deformations of the members. Steel members shall not be dropped, thrown, or dragged. Any bends, crimps or other evidence of permanent deformations shall be straightened by methods approved by the engineer or architect of record or the piece shall be rejected. Materials shall be stored out of contact with the ground, kept clean, and in general protected against damage and corrosion.

M5. QUALITY CONTROL - Add the following paragraph before paragraph one:

"The requirements of the building code for quality control shall apply."

Add this section following Section M5.5 IDENTIFICATION OF STEEL

"6. INSPECTION OF CONNECTIONS

All connections, both field and shop, shall be subject to Controlled Inspection pursuant to the requirements of Section 27-132, Section 27-585 and Table 10-2 of Section 27-586 of the Administrative Building Code."

******DOB 6-17-96; 617-87 BCR; 738-86 BCR; 799-79 BCR***

** **REFERENCE STANDARD 10-5B**

AISC-LRFD Load and Resistance Factor Design Specification for Structural Steel Buildings, effective December 1, 1993.

MODIFICATIONS - The provisions of AISC-LRFD Load and Resistance Factor Design Specifications for Structural Steel Buildings, December 1, 1993 shall be subject to the following modifications. The section and paragraph numbers are from that standard.

A3 MATERIAL - Revise the first line of Subsection 1. and add a new Subsection 7. to read as follows:

"Material conforming to the following standard specifications shall be used."

"7. Special Steels.

Steels other than those listed above may be used in accordance with the provisions of this reference standard when approved by the NYCDOB for such use."

A4 LOADS AND LOAD COMBINATIONS - Add the following as paragraph one.

"The provisions of the building code for loads shall apply. The load factors and load combinations contained in Subsections 1. , 2. and 3. of this section shall be used in conjunction with designs based on the use of this AISC-LRFD specification."

A6 REFERENCED CODES AND STANDARDS - Revise the list of publications of the following listed standards to read as follows:

American Society of Civil Engineers

ASCE 7 93

American Society for Testing and Materials

ASTM A6-94a	ASTM A27-93
ASTM A36-94	ASTM A53-93a
ASTM A148-93b	ASTM A193-94b
ASTM A194-94a	ASTM A242-93a
ASTM A307-94	ASTM A325-94
ASTM A354-94	ASTM A449-93
ASTM A490-93	ASTM A500-93
ASTM A501-93	ASTM A502-93
ASTM A514-94a	ASTM A529-94
ASTM A563-94	ASTM A570-92
ASTM A572-94b	ASTM A588-94
ASTM A606-91a	ASTM A607-92a
ASTM A618-93	ASTM A668-93
ASTM A687-93	ASTM A709-94A
ASTM A852-93a	ASTM C33-93
ASTM C330-89	ASTM F436-93

American Welding Society

AWS D1.1-94	AWS A5.1-91
AWS A5.5-89	AWS A5.17-89
AWS A5.18-93	AWS A5.20-89
AWS A5.23-90	AWS A5.28-90
AWS A5.29-89	

CHAPTER B DESIGN REQUIREMENTS

Add the following at the end of the section.

"The applicable provisions of the Building Code for moving loads shall apply."

CHAPTER I COMPOSITE MEMBERS

I1. DESIGN ASSUMPTIONS - Add the following paragraph at the beginning of the section.

"Concrete-Plain and Reinforced-All concrete materials and reinforcing shall meet the applicable requirements of the building code. Composite construction used for member subject to heavy vehicle loads, as defined in the building code for moving loads (except where the applied vehicle is limited to passenger cars), shall be proportioned in accordance with the requirements of Reference Standard RS 9-3."

I3. FLEXURAL MEMBERS - Add the following to the end of the second paragraph in subsection 3. Strength of Concrete-encased Beams.

"provided the encased beam is A36 structural steel not more than 40 in. in depth and the concrete has a minimum compressive strength of 3,000 lbs. per square inch and is made with ASTM C33 aggregate."

I5. SHEAR CONNECTORS - Add the following paragraphs after the first paragraph of subsection 1. Materials.

"For aggregate not complying with ASTM C33, the Department of Buildings' Rules for Design of Composite Construction with Metal Decks or Lightweight Concrete, dated September 8, 1975 or as subsequently revised, shall be adhered to. Working values for use with construction for which design values have not been established in accordance with the foregoing and for connector types other than those covered by Subsections 3. and 4. of Section I5 shall be established by a prequalified load test as set forth in Section 27-599. The minimum specified compressive strength of concrete (f'_c) shall be 3,000 psi.

I6. SPECIAL CASES - Add the following to the end of the paragraph.

"satisfactory to the commissioner."

CHAPTER J CONNECTIONS, JOINTS AND FASTENERS

JI GENERAL PROVISIONS

8. Placement of Welds and Bolts-At the end of the last sentence add the following:

"The foregoing provisions notwithstanding, the eccentricity perpendicular to the plane of the connection shall be considered in proportioning both the number and the connection."

12. WELDS - Add the following paragraph at the beginning of the section before the initial paragraph.

"The provisions of the building code for welding operations, the Board of Standards and Appeals' Rules for Arc and Gas Welding and Oxygen Cutting and Steel Covering the Specifications for Design, Fabrication and Inspection of Arc and Gas Welded Steel Structures and Qualification of Welders and Supervisors, and the Board of Standards and Appeals' rules for Electro-slag Welding Approvals shall apply."

Add the following paragraph after the first paragraph in Section J2.

"Welding equipment used to perform submerged - arc, gas metal-arc and flux cored arc welding of high strength steel and electro-slag or electro-gas welding of all steel shall be approved."

J3. BOLTS AND THREADED PARTS

2. Size and Use of Holes - Add the following after the title of paragraph c., d., and e.

"subject to the approval of the engineer of record,"

6. Combined Tension and Shear in Slip-critical Joints - Add the following:

"Allowable stresses for a combination of loads for A325 and A490 bolts shall be used in slip-critical connections. The applicable provisions of the Building Code for wind load shall apply."

K2. PONDING - Add the following paragraph at the end of the section.

"In roof systems where secondary members are made up of materials other than steel, the depth of the beams and girders supporting flat roofs shall not be less than $f_b/600$ times their span length whether designed as simple or continuous spans."

K3. FATIGUE - Add the following paragraph

"The design of overhead beams for elevators and hoisting apparatus and their immediate supporting framing and their connections shall be designed for fatigue loading."

L2. EXPANSION AND CONTRACTION - Precede the present text with the following:

"The provisions of the building code for loads due to thermal forces shall apply."

All exterior members of structural steel, except roofing and siding, that are exposed to the weather shall have a protective coating as required by the provisions of Section M3.9 and shall have a minimum thickness of metal of 0.23 in. Exception: The minimum thickness of metal may conform to the requirements for stress under the following conditions:

1. Exterior members exposed to the weather - A type of atmospheric corrosion resistant steel is used or exposed surfaces are zinc coated with a minimum weight of coating of approximately 0.6 ounces per square foot of exposed surface and covered with a protective coating as required by section M3. or exposed surfaces are protected by other means.
2. Members not exposed to the weather - All members, except that members located where they would be subject to accidental impact, shall be stiffened to resist such impact.
3. Roofing and siding - All members, provided that surfaces which are exposed to the weather, shall have a protective coating.
4. Temporary construction that will be in place for a period of one year or less, provided that all surfaces which are exposed to the weather shall have a protective coating.
5. Joists or purlins that are exposed to the weather but which do not support more than 200 sq. ft. of floor or roof area, and which have a protective coating as required by section M3."

CHAPTER M FABRICATION, ERECTION AND QUALITY CONTROL

M1. SHOP DRAWINGS - Add the following after the first paragraph.

"The plans shall include the location of oversized, short-slotted or long-slotted holes."

M3. SHOP PAINTING - Delete this section and substitute the following:

"M3.PAINTING OF STRUCTURAL STEEL

(a) All structural steel, except as provided in subsection (b) of this section, shall receive one coat of paint, zinc, or bituminous coating, or equivalent metal protection before erection. The protection shall be applied thoroughly and evenly to dry surfaces which have been cleaned of loose mill scale, loose rust, weld slag flux deposit, dirt and other foreign matter. Oil and grease deposits shall be removed. Surfaces inaccessible after assembly shall be treated as required above prior to assembly.

(b) Surfaces of structural steel shall not be required to receive metal protection when the structural steel is used under the conditions listed in paragraph (1) through (7) below. However, these surfaces shall be cleaned of oil and grease by solvent cleaners and be cleaned of dirt and other foreign material by thorough brushing with a fiber brush.

(1) Structural steel that is encased in concrete (other than cinder concrete) or surfaces that abut concrete (other than cinder concrete) at interior locations.

(2) Structural steel encased in non-corrosive fire resistive materials that are bonded or secured to the steel surfaces by approved means.

(3) Surfaces of structural steel that are to be riveted, bolted or welded together.

(4) Surfaces of structural steel within 2 in. of field welds shall be free of protective coatings that would prevent proper welding or produce objectionable fumes while welding is being done.

(5) Surfaces of structural steel that have been machine finished.

(6) Surfaces of types of structural steel that have been specifically approved for use without metal protection.

(7) Structural steel members that are completely concealed by interior finish such as lath and plaster, masonry, etc., need not be painted except that where such members are subject to condensation from piping, are in shower or steam rooms, are exposed to chemical fumes or are exposed to other conditions of potentially aggressive corrosion.

(c) Parts of structural members left unpainted because of welding, bolting or riveting operations, not exempted from painting by the provisions of subsection (b) above, shall receive a field application of metal protection as prescribed in subsection a. above.

(d) Structural steel that will remain exposed to the weather or to a corrosive atmosphere shall receive an additional coat of metal protection of another color after erection, except for types of structural steels that have been specifically approved for use under exposure to the weather without protection.

(e) All abrasions to, or deteriorations of, the protective coating shall be spot painted."

M4. ERECTION - Add the following to subsection 7. Field Connections.

"Field connections shall meet the requirements for corresponding types of shop connections described in section M2., subsection 5, Bolted Construction. No holes, copes or cuts of any type shall be made to facilitate erection unless specifically shown on the shop drawings or authorized in writing by the engineer or architect of record.

M4. ERECTION - Add the following new subsection 8.

"8. Handling and Storing Materials.

All steel members shall be shipped and handled in a manner that will not cause injury to protective coatings or permanent deformations of the members. Steel members shall not be dropped, thrown, or dragged. Any bends, crimps or other evidence of permanent deformations shall be straightened by methods approved by the engineer or architect of record or the piece shall be rejected. Materials shall be stored out of contact with the ground, kept clean, and, in general, protected against damage and corrosion."

M5. QUALITY CONTROL - Add the following paragraph before the initial paragraph:

"The requirements of the building code for quality control shall also apply."

Add this section following Section M5.5 Identification of Steel:

All connections, both field and shop, shall be subject to Controlled Inspection pursuant to the requirements of Section 27-132, Section 27-585 and Table 10-2 of Section 27-586 of the Administrative Building Code."

*****DOB 6-17-96; 617-87 BCR***

*** **REFERENCE STANDARD RS 10-5C**
STEEL STRUCTURES RESISTING EARTHQUAKE FORCES

UBC SECTION 2723-1990 Steel Structures Resisting Forces Induced by Earthquake Motions in Seismic Zones Nos. 1 and 2 with Accumulative Supplement.

MODIFICATIONS - The provisions of UBC Section 2723 shall be subject to the following modifications. The subdivisions, paragraphs, subparagraphs and items are from that standard.

Subdivision (a) General, Paragraph 1.

Delete this paragraph and substitute the following:

"1. Design and construction of steel framing in lateral force resisting systems shall conform to the requirements of this reference standard. The use of reference standard RS 10-5B is prohibited for the design of seismic resisting elements."

Subdivision (b) Definitions.

Delete this subdivision and substitute the following:

"(b) Definitions. **ALLOWABLE STRESSES** are prescribed in reference standard RS 10-5A.

CHEVRON BRACING is that form of

bracing where a pair of braces located either above or below a beam terminates at a single point within the clear beam span.

CONNECTION is the group of elements that connect the member to the joint.

DIAGONAL BRACING is that form of bracing that diagonally connects joints at different levels.

ECCENTRIC BRACED FRAME (EBF) is that form of braced frame where at least one end of each brace intersects a beam at a point away from the column girder joint.

GIRDER is the horizontal member in a seismic frame. The words beam and girder may be used interchangeably.

JOINT is the entire assemblage at the intersections of members.

K BRACING is that form of bracing where a pair of braces located on one side of a column terminates at a single point within the clear column height.

LINK BEAM is that part of a beam in an eccentric braced frame which is designed to yield in shear and/or bending so that buckling of the bracing members is prevented.

STRENGTH is the strength as prescribed in reference standard RS 10-5A.

V BRACING is that form of chevron bracing that intersects a beam above and inverted V bracing is that form of chevron bracing that intersects a beam from below.

X BRACING is that form of bracing where a pair of diagonal braces cross near midlength of the bracing members."

Subdivision (c) Materials.

Delete this subdivision and exception and substitute the following:

"(c) 1. Materials. Materials shall be as prescribed in reference standard RS 10-5A. Structural steel designed to be part of the lateral force resisting system of multistory buildings shall not have a specified yield strength greater than 50,000 psi.

2. Member Strength. When these provisions require that the strength of the member be developed, the following shall be used:

Members:	Strength
Flexure	$M_s=ZF_y$
Shear	$V_s=.55F_ydt$
Axial compression	$P_{sc}=1.7F_aA$
Axial tension	$P_{st}=F_yA$
Connectors:	
Full penetration welds	F_yA
Partial penetration and fillet welds	1.7*Allowable
Bolts	1.7*Allowable

Members need not be compact unless otherwise required by this chapter."

Subdivision (d) Ordinary Moment Frame Requirements.

Delete the words "Section 2723(e)1" and insert the words "paragraph 1 of Special Moment-resisting Frame (SMRF) Requirements".

Subdivision (e) Special Moment-resisting Frame Requirements (SMRF).

Paragraph 1, Subparagraph A. Required Strength.

Delete the words "Formula 22-1" in item (ii) and insert the words "the panel zone strength, defined as:

$$V=0.55F_yd_ct\ (1+3b_ct_{cf}^2/d_bd_ct)$$

where:

t = the total thickness of the joint panel zone including doubler plates

d_b = the depth of the beam

d_c = the column depth

b_c = the width of the column flange

t_{cf} = the thickness of the column flange".

Paragraph 3, Subparagraph A. Restrained joint.

Delete item (i) and substitute the following:

"$\Sigma/Z_c(F_{yc} - f_a)/\Sigma Z_bF_{yb}>1.0$

where ($f_a \geq 0$)."

Paragraph 3, Subparagraph B. Unrestrained joint.

Delete the words "Section 2703, Formula (3-2)" in the first sentence and insert the words: "Section 1.6.2 of reference standard RS 10-5A".

Delete the words "Section 2723(e)3A and P-delta" in the sentence following item (ii) and insert the words "Section 2723(f)3A, as well as P-delta effects".

Add new a Paragraph 5 entitled Drift Calculations to read as follows:

"5. Drift Calculations. Drift calculations shall include bending and shear contributions from the clear girder and column spans, column axial deformation, and the rotation and distortion of the panel zone.

Exceptions:

1. Drift calculations may be based on column and girder centerlines where either of the following conditions is met:

a. It can be demonstrated that the drift so computed for frames of similar configuration is typically within 15 percent of that determined above.

b. The column panel zone strength can develop 0.8 Σ/M_s of the girders framing to the column flanges at the joint.

2. Column axial deformations may be neglected if they contribute less than 10 percent to the total drift."

Subdivision (f) Requirements for Braced Frames.

Paragraph 2, Subparagraph A. Stress reduction.

Delete the words "2702(b) 3 and Section 2303(d)" of the definition of "F_a" and substitute the words "1.5.1.3 and Section 1.5.6 of reference standard RS 10-5A".

Paragraph 2, Subparagraph C. Compression elements in braces.
Delete the number "2706" and insert the words "1.9 of reference standard RS 10-5A".
Paragraph 3, Subparagraph B. Net area.
Delete the words “2722(g)3A” in F* and 2722(g)2A in α and insert the words “2723(f)3A” and “2723 (f)2A” for F* and α, respectively.
Subdivision (h) Nondestructive Testing.
Delete the words "Section 2722(i) and insert the words "reference standard RS 10-5A".
******Local Law 17-1995.***

*** REFERENCE STANDARD RS 10-6**

AISC-1986 Specification For The Design of Cold-Formed Steel Structural Members, dated August 19,1986.
MODIFICATIONS-The provisions of AISI 1980 specification for the design of cold-formed steel structural members dated August 19,1986, shall be subject to the following modifications. The section and paragraph numbers are from that standard.

A3 Material—Add the following to the last sentence of section A3.2 Other Steels:

"and provided it is approved for structural applications in accordance with RS 10-6 by the Board of Standards and Appeals."

A4.4 Wind or Earthquake Loads-Delete Section A4.4 and substitute the following:

"The provisions of the Building Code for infrequent stress conditions shall apply."

A5 Structural Analysis and Design-Add the following as the opening paragraph of section A5.1 Design Basis:

"The stresses indicated herein are applicable only in conjunction with the other requirements contained in the following subsections:**

E2 Welded Connections-Add the following paragraph directly under E2:

"The provisions of the Building Code for welding operations, the Board of Standards and Appeals, rules for Arc and Gas Welding and Oxygen Cutting of Steel Covering the Specifications for the Design, and the Qualifications of Welders and Supervisors shall apply. The requirements of Section E2 shall supplement the above requirement not supersede them."

F Test for Special Cases-Delete the text of subsection (a) and substitute the following:

"(a) Tests shall be made in accordance with the provision of the Building Code."

F1 Tests for Determining Structural Performance-Delete the text for subsection (b) and substitute the following:

"(b). The provision of the Building Code for load test shall apply.**

G-FABRICATION, ERECTION, MINIMUM THICKNESS OF METAL AND PAINTING
The applicable provisions of Reference Standard RS 10-5 shall apply supplemented as follows:

G1.1 Fabrication
(a) Straightening and flattening-All materials shall be clean and straight. If straightening or flattening is necessary, it shall be done by a suitable process or method and in a manner that will not injure the material.
(b) Profiles used structurally shall conform to the specified dimension. Care shall be taken not to stretch, bend, or otherwise distort parts of the sections unless such forming is an integral part of the design.
(c) Cutting and punching-Components may be cut by slitting, shearing sawing, or flame cutting. All punched holes and sheared or flame cut edges of material in members subject to calculated stress shall be clean and free from notches and burred edges.

G1.2 Erection-Care shall be taken to avoid damage when loading, unloading, and handling members.
****455-89 BCR; 425-81 BCR; 302-73 BCR; 248-70 BCR***
*****Closed quotations not enacted here; probably intended.***

***** REFERENCE STANDARD RS 10-6A**

Reference Standard 10-6A, AISI 1974 Specification for the Design of Cold-Formed Stainless Steel Structural Members.
MODIFICATIONS-The provisions of AISI-1974 Specification for the Design of Cold-formed Stainless Steel Structural Members shall be subject to the following modifications. The section and paragraph numbers are from that standard.
1.2 Material.
Add the following to the last sentence of the last paragraph of section 1.2: "and provided it is approved for structural applications in accordance with RS 10-6A by the Board of Standards and Appeals."
3.1 Basic design stresses.
Add the following as the opening paragraph of section 3.1: "The allowable stresses indicated herein are applicable only in conjunction with the other requirements contained in the following subsections."
3.1.2 Wind, earthquake and combined forces.
Delete sections 3.1.2.1 and 3.1.2.2 and substitute the following: "The provisions of the building code for infrequent stress conditions shall apply."
4.2 Welds.
4.2.1 Fusion welds.
In the fourth paragraph following the words "Structural Welding Code, D1.1" add "1975 and D1.1 Rev. 1-76 and D1.1 Rev. 2-77."
4.5 Bolted connections.
4.5.4 Shear stress on bolts.
In paragraph two change the date of issuance of ASTM Designation A370 to read as follows: A370-76

6.1 Determination of stress-strain relationships.
Change the date of issuance of the following standards referred to in section 6.1 as indicated.
E8-69
E9-77
E141-69
6.2 Test for special cases.
6.2.1 General
6.2.1(c) Delete and substitute the following:
"Tests shall be made in conformance with the provisions of the Building Code."
6.2.2 Tests for determining structural performance.
Delete paragraph 6.2.2(b) and substitute the following:
"The provisions of the building code for load tests shall apply."
6.2.3 Tests for determining mechanical properties of full sections. Add the date of issuance of the following standard referred to in section 6.2.3(a) as indicated.

ASTM Designation A370-76

Add the following section:
Section 7. FABRICATION AND ERECTION
The applicable provisions of Reference Standard RS 10-5 shall apply supplemented as follows:
7.1 Fabrication
(a) Straightening and flattening-All material shall be clean and straight. If straightening or flattening is necessary, it shall be done by a suitable process or method and in a manner that will not injure the material.
(b) Profiles and distortion-Profiles used structurally shall conform to the specified dimension. Care shall be taken not to stretch, bend, or otherwise distort parts of the sections unless such forming is an integral part of the design.
(c) Cutting and punching-Components may be cut by slitting, shearing, sawing or flame cutting. All punched holes and sheared or flame cut edges of material in members subject to calculated stress shall be clean and free from notches and burred edges.
(d) Bolted and riveted connections-Holes for bolts or rivets shall be 1/16 inch larger than the nominal diameter of the bolt and rivet when the diameter of bolt or rivet is 1/2 inch and larger, and 1/32 inch larger than the nominal diameter of the bolt or rivet when the diameter is less than 1/2 inch.
7.2 Erection - Care shall be taken to avoid damage when loading, unloading, and handling members.
******249-70 BCR***

*** REFERENCE STANDARD RS 10-7**

SJI Standard Specifications for Open Web Steel Joists, H-series, as modified, February 15,1978, Revised November 7,1983.
SJI Standard Specifications for Open Web Steel Joists, K- Series, November 4,1985, Revised May 19,1987.
SJI Standard Specifications for Longspan Steel Joists, LH-Series, and Deep Longspan Steel Joists,
DLH-Series. February 15,1978. Revised to May 19,1987.
SJI Standard Specifications for Joist Girders, May 15,1978. Revised to May 19,1987.
SJI-1988 Standard Specifications, Load Tables and Weight Tables for Steel Joists and Joist Girder.
**MODIFICATIONS:
(1) Open web steel joists are prohibited in high rise buildings in all occupancy groups except J-2 or J-3.
(2) The provisions of the standard specifications for open web steel joists, longspan steel joists, deep longspan steel joists and joist girders, as listed above, shall be subject to the following modifications. The section and paragraph numbers are from those standards.
*****Local Law 26-2004.***

SPECIFIC MODIFICATIONS-OPEN WEB STEEL JOISTS, H-SERIES

3.1 STEEL

Add the date of publication of the following ASTM specifications:

ASTM A36-88c
ASTM A570-88
ASTM A606-85
ASTM A242-87
ASTM A572-88b
ASTM A607-85
ASTM A441-85
ASTM A588-88
ASTM A611-85

3.2 MECHANICAL PROPERTIES

Add the date of publication of the following ASTM specifications:

ASTM A370-88
ASTM A6-86b
ASTM A611-85

3.3 PAINT

The requirements of Reference Standard RS 10-5 shall also apply.

5.12 INSPECTION

Delete this section.
Minimum Thickness of Material-The provisions of reference standard RS 10-5 shall apply.

SPECIFIC MODIFICATIONS-OPEN WEB STEEL JOISTS K-SERIES

3.1 STEEL

Add the date of publication to the following ASTM specifications:

ASTM A36-88c
ASTM A588-88
ASTM A242-87
ASTM A606-85
ASTM A441-85
ASTM A607-85
ASTM A570-88
ASTM A611-85
ASTM A572-88b

3.2 MECHANICAL PROPERTIES
Add the date of publication to the following ASTM specifications:

ASTM A370-88
ASTM A6-86b
ASTM A611-85

In paragraph three insert "Reference Standard RS10-6" before the words, "of the AISI Specification...."

4.1 METHOD
In paragraph one delete the words, "of latest adoption"
In paragraph (a) insert "Reference Standard RS 10-5" before "American Institute of Steel Construction."
In paragraph (b) insert "Reference Standard RS 10-6" before "American Iron and Steel Institute."

4.8 SHOP PAINT
Add the following as the first paragraph of this section:
Painting of Open Web Steel Joists.-Painting of Open Web Steel Joists shall meet the requirements of reference standard RS 10-7 for Open Web Steel Joists. The shop coat shall be applied at the place of manufacture. All abrasions shall be touched up at the job site with the same material. Steel joists that remain exposed to the weather or a corrosive atmosphere shall receive an additional coat of metal protection of another color after erection, except for types of structural steels that have been specifically approved for use under exposure to the weather without metal protection.

5.12 INSPECTION
Delete this section.

SPECIFIC MODIFICATIONS-LONGSPAN STEEL JOISTS, LH-SERIES AND DEEP LONGSPAN STEEL JOISTS, DLH-SERIES

102.2 STEEL
Add the date of publication to the following ASTM specifications:

ASTM A36-88c
ASTM A588-88
ASTM A242-87
ASTM A606-85
ASTM A441-85
ASTM A607-85
ASTM A570-88
ASTM A611-85
ASTM A572-88b

102.2 MECHANICAL PROPERTIES
Add the date of publication to the following ASTM specifications:

ASTM A370-88
ASTM A6-86b
ASTM A611-85

103.1 METHOD
In paragraph one delete the words, "of latest adoption."
In paragraph (a) insert "Reference Standard RS 10-5" before, "American Institute of Steel Construction."
In paragraph (b) insert "Reference Standard RS 10-6" before, "American Iron and Steel Institute."

103.7 SHOP PAINTING
Add the following as the first paragraph of this section:
Painting of Joist Girders.- Painting of Joist Girders shall meet the requirements of reference standard RS 10-7 for Joist Girders. The shop coat shall be applied at the place of manufacture. All abrasions shall be touched up at the job site with the same material. Steel joists that remain exposed to the weather or a corrosive atmosphere shall receive an additional coat of metal protection of another color after erection, except for types of structural steels that have been specifically approved for use under exposure to the weather without metal protection.

104.13 INSPECTION
Delete this section.

SPECIFIC MODIFICATIONS—JOIST GIRDERS

1002.1 STEEL
Add the date of publication to the following ASTM specifications:

ASTM A36-88c
ASTM A588-88
ASTM A242-87
ASTM A606-85
ASTM A441-85
ASTM A607-85
ASTM A570-88b
ASTM A611-85
ASTM A572-88b

1002.2 MECHANICAL PROPERTIES
Add the date of publication to the following ASTM specifications:

ASTM A370-88
ASTM A6-86b
ASTM A611-85

1003.1 METHOD
In paragraph one delete the words, “of latest adoption”.
In paragraph (a) insert “Reference Standard RS 10-5” before, “American Institute of Steel Construction”.
In paragraph (b) insert “Reference Standard RS 10-6” before, “American Iron and Steel Institute”.

1003.1 SHOP PAINTING
Add the following as the first paragraph of this section:
Painting of Joist Girders.—Painting of Joist Girders shall meet the requirements of reference standard RS 10-7 for Joist Girders. The shop coat shall be applied at the place of manufacture. All abrasions shall be touched up at the job site with the same material. Steel joists that remain exposed to the weather or a corrosive atmosphere shall receive an additional coat of metal protection of another color after erection, except for types of structural steels that have been specifically approved for use under exposure to the weather without metal protection.

***** REFERENCE STANDARD RS 10-8**

LUMBER AND TIMBER CONSTRUCTION

AF&PA 1991 National Design Specification for Wood Construction- and its 1991 Supplement with 1993 Revisions

MODIFICATIONS-The provisions of AF&PA-National Design Specifications for Wood Construction shall be subject to the following modifications. The section and paragraph numbers are from that standard.

Part 1- General Requirements for Structural Design

1.4.2 Governed by Codes.

The provisions of the New York City Building Code shall constitute the minimum design loads.

Part IV-Sawn Lumber

4.1.2.1- When the design values specified herein are used, the lumber, including end-jointed or edge-jointed lumber shall be identified in accordance with the provisions of the Building Code for Identification. See Sections 26-251 and 27-618 of the code.

Part XIII-Metal Connector Plates

13.2- Design Values for Metal Connector Plates.

13.2.1- Tests for Design Values.

Tests to determine lateral design values for metal connector plates shall be conducted in accordance with ASTM Standard D1761-88 (Reference 13) or other approved test methods. The strength value of the metal connector plate in tension and shear shall be determined in accordance with ASTM E489-81. Tensile Strength Properties of Steel Truss Plates and ASTM E 767-80, Shear Resistance of Steel Truss Plates. The design value for normal load duration shall be determined by dividing the test load at wood-to-wood slip of 0.03" by 1.6 or by dividing the ultimate test load by 3.0 using the smaller of the two values as the design value (see Reference 43 for additional information). Design values determined in accordance with these test procedures shall be multiplied by all applicable adjustment factors (see Table 7.3.1) to obtain allowable design values.

13.2.3- Testing.

Full scale tests on representative trusses shall be conducted with ASTM E 73-84 Standard Methods of Testing Truss Assemblies.

13.2.4- Handling, Installation and Bracing.

Handling, installation and bracing metal plate connected wood trusses shall be in accordance with the recommendations of Truss Plate Institute, TPI-HIB-91, Commentary and Recommendations for Handling, Installing and Bracing Metal Plate Connected Wood Trusses.

Part XVI-Fire Protection

16.1-Scope.

This part is added to provide current State-of-the-Art Requirements for firestopping of concealed spaces above dropped ceilings and above ceilings attached to open web combustible trusses. These requirements are in addition to Sections 27-327 and 27-345 of the Building Code.

16.2-General.

16.2.1-General Requirement for Firestopping.

The space between the ceiling and the floor or roof above shall be divided by providing firestopping where ceilings are suspended below solid joists or suspended from or attached directly to the bottom of open wood floor trusses in buildings of combustible construction.

16.2.1.1-The space shall be divided into approximately equal areas not greater than 500 square feet in buildings of combustible construction. The firestopping shall generally be provided parallel to the main framing members. The roof trusses of private dwellings with roofs having a slope greater than 15 degrees from the horizontal may be excluded from this requirement.

16.2.1.2-Exception-Where the space above the ceiling is of combustible construction and the building is sprinklered in accordance with reference standard RS 17-2, above and below the ceiling, the firestopping may be omitted.

******DOB 4-17-96; 455-89 BCR; 288-84 BCR; 510-79 BCR; 394-71 BCR***

**** REFERENCE STANDARD RS 10-9**

PLYWOOD CONSTRUCTION

1. DEFINITIONS.-

(a) Plywood-Plywood is a laminated board or panel, consisting of a number of veneer sheets bonded together with either a water-resistant or waterproof adhesive that forms a bond stronger than the wood itself.

(b) Plywood component-A plywood component, for purposes of this standard, shall be defined as an element of a structural member formed by the assembly of plywood parts or of plywood parts with parts of wood or other materials so as to form an integral assemblage.

2. CONFORMANCE WITH STANDARD.-Materials, design and fabrication shall conform to Reference Standard RS 10-53, RS 10-54, RS 10-56 or RS 10-57, except that the word "should" in the standards shall be mandatory.

3. EXTERIOR USE.-All plywood when permanently exposed in outdoor applications shall be of exterior type. Plywood used for covering the exterior of outside walls and applied directly to supports shall be at least 3/8 in. nominal thickness, or comply with specifications for 303 Specialty Siding published by the American Plywood Association. Panel joints shall be backed solidly by studs or by nailing pieces at least 2 in. wide (nominal), except over sheathing or where applied as lapped siding, or when otherwise made waterproof. Plywood siding applied over sheathing shall be not less than ¼ in. thick.

4. ROOF SHEATHING.-Where plywood is used as roof sheathing the spans shall not exceed the values given in Table RS 10-9.1.

TABLE RS 10-9.1a
ALLOWABLE SPANS FOR PLYWOOD FLOOR AND ROOF SHEATHING CONTINUOUS OVER TWO OR MORE SPANS AND FACE GRAIN PERPENDICULAR TO SUPPORTS [a]

Panel Span Rating,[b] Roof/ Floor Span	Thickness (inches)	Roof Maximum Span (inches) Edges Blocked[c]	Edges Unblocked
10/0	5/16	12	12
16/0	5/16, 3/8	16	16
20/0	5/16, 3/8	19.2	19.2
24/0	3/8	20	20
24/0	15/32, ½	20	24
32/16	15/32, ½, 5/8	30	28
40/20	19/32, 5/8, ¾	40	32
48/24	23/32, 3/4	48	36
Panel Span Rating,[b]	Load (psf)		Floor Maximum span[e] (inches)
Roof/ Floor Span	Total	Live	
12/0	135	130	0
16/0	80	65	0
20/0	70	55	0
24/0	60	45	0
24/0	60	45	0
32/16	50	35	16[f]
40/20	40[d]	35[d]	20[f,g]
48/24	40[d]	35[d]	24

Notes:

[a] These values apply for C-D Sheathing Structural I and II and C-C grades only. Spans shall be limited to values shown because of possible effect of concentrated loads.

[b] Span rating appears on all panels in the construction grades listed in footnote[b].

[c] Edges shall be blocked with lumber or other approved type of edge support.

[d] For roof live load of 40 psf or total load of 55 psf, decrease spans by 13 percent or use panel with next greater span rating.

[e] Edges of plywood floor sheathing shall have approved tongue-and-groove joints or shall be supported with blocking, unless 1/4-inch minimum thickness underlayment of 1 1/2 inches of approved cellular or lightweight concrete is installed, or finish floor is 25/32-inch wood strip. Allowable uniform load based on deflection of 1/360 of the span is 165 psf.

[f] Maximum shall be 24 inches if 25/32 - inch wood strip flooring is installed at right angels to joist.

[g] For joists spaced at 24 inches on center, plywood sheathing with span rating numbers 40/20 or greater shall not be used for subfloors except when supporting 1 1/2 inches of lightweight concrete.

5. PLYWOOD SUBFLOORS.-Where plywood is used as structural subflooring the maximum spans shall not exceed the values given in Table RS 10-9.1. If resilient flooring or carpeting is to be applied directly to a plywood subfloor without separate underlayment, the panels shall be underlayment grade, C-C plugged, or any sanded grade of exterior type plywood. The thickness shall not be less than the values prescribed for the given spans and loads shown in Table RS 10-9.2.

6. SPECIAL 1 1/8 IN. PLYWOOD SUBFLOORING FOR 48 IN. SPAN.-
Such material, if conforming to design specifications of the American Plywood Association special 2-4-1 panel, may be used over girders spaced not more than 48 in. on centers, with edges on 2 in. x 4 in. blocking securely attached to main girders, provided the total floor load does not exceed 65 psf. A tongue and groove joint may be used in lieu of blocking.

7. PLYWOOD WALL SHEATHING.-Plywood may be applied either horizontally or vertically and as indicated in building code provisions for the bracing of exterior walls.

8. FASTENING.-Plywood sheathing and subflooring . Plywood sheathing and subflooring shall have the maximum fastener spacing on framing as prescribed in Table RS 10-9.3.

TABLE RS 10.9.1b
ALLOWABLE LOADS FOR PLYWOOD ROOF SHEATHING CONTINUOUS OVER TWO OR MORE SPANS AND FACE GRAIN PARALLEL TO SUPPORTS[a]

	Thickness (inches)	No. of Plies	Span (inches)	Total Load (psf)	Live Load (psf)
	15/32	4	24	30	20
	15/32	5	24	45	35
Structural 1	½	4	24	35	25
	½	5	24	55	40
	15/32	5	24	25	20
	½	5	24	30	25
Other grades	19/32	4	24	35	25
covered in DOC	19/32	5	24	50	40
PS-1	5/8	4	24	40	30
	5/8	5	24	55	45

Note:
[a] Uniform load deflection limitations: 1/180 of span under live load plus dead load, 1/240 under live load only. Edges shall be blocked with lumber or other approved type of edge supports.

TABLE RS 10-9.2 MINIMUM THICKNESS FOR PLYWOOD COMBINATION SUBFLOOR-UNDERLAYMENT[a]
(Plywood continuous over two or more spans and face grain perpendicular to supports)

	Maximum Spacing of Supports (in.)		
Species Group	16	20	24
1	½ in.	5/8 in.	¾ in.
2, 3	5/8 in.	¾ in.	7/8 in.
4	¾ in.	1/8 in.	1 in.

Notes:
[a] Applicable to underlayment grade, C-C (Plugged) and all grades of sanded exterior type plywood. Spans limited to values shown because of possible effect of concentrated loads. Allowable uniform load based on deflection of 1/360th of span is 100 psf. Plywood edges shall have approved tongue and groove joints or shall be supported with blocking, unless 1/4 - inch minimum thickness underlayment is installed, or finish floor is 25/32-inch wood strip. If wood strips are perpendicular to supports, thickness as shown for 16-and 20-inch spans may be used on 24 - inch span.
Except for 1/2 inch, Underlayment grade and C-C(plugged) panels may be of nominal thicknesses 1/32 inch thinner than the norminal thicknesses shown when marked with the reduced thickness.

TABLE RS 10-9.3 FASTENING SCHEDULE

Thickness (in.)	Common Nail and Staple Size/ Type	Fastener Spacing (in.)[a] Panel Edges	Intermediate Support
	Roof and Wall Sheathing		
1/2 or less	6d Smooth or deformed……..	6	12
5/8 or greater	8d Smooth or deformed ……..	6	12
5/16, 3/8,1/2	16 gage galvanized wire staples, 1/8 in. minimum crown. Length of one in. plus plywood thickness except 1 1/4 in. for 5/16 in. plywood...	4	8
	Subflooring		
1/2	6d Smooth or deformed……..	6	12
5/8, 3/4, 7/8	8d Smooth or 6d deformed……..	6	12
1, 1 1/8	10d Smooth or 8d deformed……...	6	6
1/2	16 gage galvanized wire staples, 3/8 in. minimum crown. ……	4	7
5/8	1 5/8 in. long……...	2 1/2	4

Note:
[a] Where spans are 48 in., or more, nails shall be spaced at 6 in. at all supports.

9. PLYWOOD SIDING.-Plywood siding shall be applied and nailed as prescribed in Table RS 10-9.4.

TABLE RS 10-9.4 PLYWOOD SIDING

Type of Siding	Plywood [b,c,] Thickness (in.)	Nail Size	Nail Type	Nail Spacing (in.) Panel Edges[a]	Nail Spacing (in.) Intermediate Supports
Panel Siding	3/8[d]	6d	Corrosive resistant box or casing nails	6	12
	1/2, 5/8 and thicker	8d			12
Lap Siding	3/8	6d	Corrosive resistant box or casing nails	6	One nail per stud for width 12 in. or less.
	1/2 and thicker	8d			
				4	8 in. for width greater than 12 in.

Notes:

[a]Minimum edge distance of 3/8 in.

[b]In direct-to-stud applications 5-ply panels of 1/2 in. nominal thickness or more may be used over studs 24 in. o.c. if texturing does not penetrate through the face veneer. All other panels must be used over studs spaced not more than 16 in. on center.

[c]Special requirement: Nails on ship-lap edges of 5/8 in. and thicker panel siding 3/8 in. from exposed edge and slant driven towards edge; do not set.

[d]When separate sheathing is applied, 3/8 in. panel and 303 siding may be used over supports spaced 24 in. on center 1/4 in. over supports 16 in. on center.

***10. PLYWOOD DIAPHRAGMS**.-Plywood diaphragms may be used to resist horizontal forces in horizontal and vertical distributing or resisting elements, provided the deflection in the plane of the diaphragm, as determined by calculations, tests, or analogies drawn therefrom, does not exceed the permissible deflection of attached distributing or resisting elements. Diaphragms to resist earthquake loads may be designed and constructed in accordance with reference standard RS 10-58.

Permissible deflection shall be that deflection up to which the diaphragm and any attached distributing or resisting element will maintain its structural integrity under assumed load conditions; i.e, continue to support assumed loads without danger to occupants of the structure.

Connections and anchorages capable of resisting the design forces shall be provided between the diaphragms and the resisting elements. Openings in diaphragms that materially affect the strength of the diaphragms shall be fully detailed on the plans, and shall have their edges reinforced to adequately transfer all shearing stresses. Structural diaphragm shapes shall be limited to the proportions given in Table RS 10-9.5.

TABLES RS 10-9.5 DIAPHRAGM PROPORTIONS

Type	Horizontal Diaphragms-Maximum Span-Width Ratios	Vertical Diaphragms-Maximum Height-Width Ratios
Nailed all edges....	4 : 1	31/2 : 1
Blocking omitted at intermediate joints	4 : 1	2 : 1

Local Law 17-1995.

Design-

Horizontal and vertical plywood diaphragms shall be used at shear values not exceeding those set forth in Tables RS 10-9.6 and RS 10-9.7 and respectively or shall be designed by principles of stress analysis. Plywood thickness for horizontal diaphragms shall not be less than as set forth in Tables RS 10-9.1 and RS 10-9.2 for corresponding joist spacing and loading, except that 1/4 in. may be used where design analysis justifies.

All framing members shall be proportioned and spliced where necessary to transmit direct stresses. The width of framing members shall be at least 2 in. nominal. In general, panel edges shall bear on the framing members and butt along their center lines. Nails shall be placed at least 3/8 in. from the panel edges, and spaced not more than 12 in. apart along intermediate supports and 6 in. apart along the panel edge-bearings. All nails shall be firmly driven into the framing members. No unblocked panel less than 12 in. wide shall be used. (See Tables RS 10-9.6 and RS 10-9.7).

11. PLYWOOD COMPONENTS.-Plywood components shall be acceptable when designed and fabricated according to procedures in reference standard RS 10-55.

12. STRUCTURAL USE PANELS.-Panels shall comply with Reference Standards RS 10-54 and RS 10-56 and shall include those manufactured using only veneer as in regular plywood, with veneer faces and a reconstituted wood core as in composite plywood, or using only reconstituted wood as in structural flakeboard. waferboard, oriented strandboard and particleboard.

13. MARKING OF PANELS.-Structural-use sheathing panels shall be marked with a Span Rating symbol as

required in RS 10-54 and RS 10-56. The left-hand number shall denote the maximum roof span in inches, and the right-hand number the floor span.

Structural-use panels designated for use as single-layer floor panels shall be marked with a floor Span Rating. Structural-use panels intended for use solely as wall sheathing shall be marked with a stud spacing of 16 o.c. or 24 o.c.

14. PANEL SPANS.-Spans for structural-use panels used for floor or roof sheathing shall not exceed the Span Rating. Live loads on floors or roofs shall not exceed those specified in Tables RS 10-9.1a and RS 10-9.1b.

Spans for structural-use panels for wall sheathing may be applied either horizontally or vertically. Maximum stud spacing shall not exceed 16 inches o.c. for panels with a rated wall span of 16 inches or roof span of 16 or 20 inches, and 24 inches o.c. for panels with rated wall span of 24 inches or roof span of 24 inches or more.

15. HORIZONTAL SHEAR.-Structural-use panels may be used to resist horizontal forces and shall be assigned shear values equal to those for C-D plywood and other grades in Tables RS 10-9.6 and RS 10-9.7.

16. FASTENINGS.-Structural-use panels shall be fastened to the framing system in accordance with Table RS 10-9.3.

17. FIRE RESISTANCE.-Structural-use panels SHALL NOT BE USED as an element of a fire resistive assembly unless it has been specifically tested and approved for such use.

*****455-89 BCR; 208-85 BCR; 288-84 BCR***

TABLE RS 10-9.6 ALLOW SHEAR FOR WIND FOR HORIZONTAL PLYWOOD DIAPHRAGMS
(lbs. Per st. of horizontal run)

					Blocked Diaphragms				Unblocked Diaphragms	
					Nail Spacing at Diaphram Boundaries (all cases) and Continuous Panel Edges Parallel to Load (Cases 3 & 4)				Nails Spaced 6 in. Maximum at Supported End	
Plywood Grade	Common Nail Size	Minimum Nail Penetration in Framing (in.)	Minimum Nominal Plywood Thickness (in.)	Minimum Nominal Width of Framing Member (in.)	6 in.	4 in.	2 ½ in.	2 in.	Load Perpendicular to Unblocked Edges and Continous Panel Joints (Case 1)	All Other Config-urations (Cases 2, 3, and 4)
					Nail Spacing at Other Plywood Panel Edges					
					6 in.	6 in.	4 in.	3 in.		
	6d	1 1/4	5/16	2	185	250	375	420	165	125
Structural I			or 1/4	3	210	280	420	475	185	140
	8d	1 1/2	3/8	2	270	360	530	600	240	180
				3	300	400	600	675	265	200
	10d	1 5/8	1/2	2	320	425	640[b]	730[b]	285	215
				3	360	480	720	820	320	240
	6d	1 1/4	5/16	2	170	225	335	380	150	110
Structural II			or 1/4	3	190	250	380	430	170	125
C-C			3/8	2	185	250	375	420	165	125
Exterior,				3	210	280	420	475	185	140
Standard	8d	1 1/2	3/8	2	240	320	480	545	215	160
Sheathing				3	270	360	540	610	240	180
and other			1/2	2	270	360	530	600	240	180
Grades				3	300	400	600	675	265	200
covered in	10d	1 3/8	1/2	2	290	385	575[b]	655[b]	255	190
Product				3	325	430	650	735	290	215
Standard			3/8	2	320	425	640[b]	730[b]	285	215
PS 1				3	360	480	720	820	320	240

Notes:
a These values are for short time loads due to wind and shall be reduced 25 percent for normal loading. Space nails 12 in. on center along intermediate framing members.
b Reduce tabulated values 10 per cent when boundary members provide less than 3 in. nominal nailing surface.

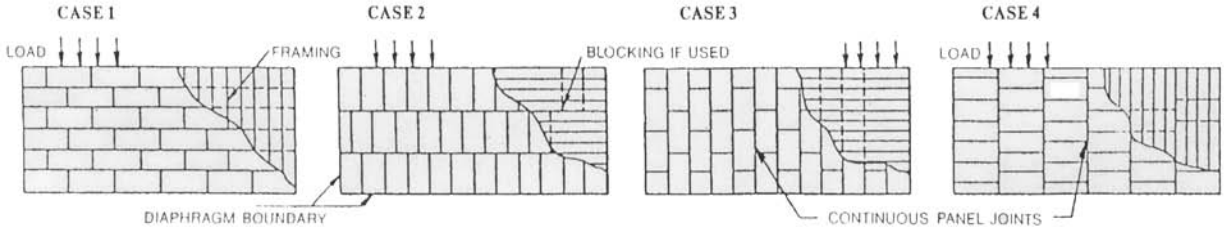

TABLE RS 10-9.7 ALLOWABLE SHEAR FOR WIND FOR VERTICAL PLYWOOD DIAPHRAMS a,b
(lbs. per ft. of vertical run)

Plywood Grade	Nail Size (Common or Galvanized Box)	Minimum Nail Penetration in Framing (in.)	Minimum Nominal Plywood Thickness (in.)	Plywood Applied Direct to Framing — Nail Spacing at Plywood Panel Edges 6	4	2 1/2	2	Nail Size (Common or Galvanized Box)	Plywood Applied over ½ inch Gypsum Sheathing — Nail Spacing at Plywood Panel Edges (in.) 6	4	2 1/2	2
	6d	1 1/4	5/16	200	300	450	510	8d	200	300	450	510
Stuctural I	8d	1 1/2	3/8	280	430	640	730	10d	280	430	640	730
	10d	1 5/8	1/2	340	510	770	870	—	—	—	—	—
Stuctural II, C-C Exterior, Standard												
Sheathing, Plywood Panel Siding,	6d	1 1/4	5/16	180	270	400	450	8d	180	270	400	450
and other grades covered in Product	8d	1 1/2	3/8	260	380	570	640	10d	260	380	570	640
Standard PS 1	10d	1 5/8	1/2	310	460	690	770	—	—	—	—	—
	Nail Size (Galvanized Casing)							Nail Size (Galvanized Casing)				
Plywood Panel Siding in grades	6d	1 1/4	5/16	140	210	320	360	8d	140	210	320	360
covered in Product Standard PS 1	8d	1 1/2	3/8	160	240	360	410	10d	160	240	360	410

Notes:
a These values are for short time loads due to wind and shall be reduced 25 per cent for normal loading. All panel edges backed with 2-inch nominal or wider framing. Plywood installed either horizontally or vertically. Space nails at 12 in. on center along intermediate framing members.
b For unblocked vertical plywood diaphragms use the values in the last column of Table RS 10-9.6.

11. PLYWOOD COMPONENTS. – Plywood components shall be acceptable when designed and fabricated according to procedures in reference standards RS 10-57 through RS 10-64, inclusive.

* **REFERENCE STANDARD RS 10-10A**
SPECIFICATION FOR ALUMINUM STRUCTURES ALLOWABLE STRESS DESIGN
AA Aluminum Design Manual Part 1-A Specification for Aluminum Structures Allowable Stress Design (Seventh Edition, January 2000).
Modification:

* * *

Section 2.3 Loads– is hereby amended to read as follows:

The dead load to be used in the design of the structure is the weight of the structure and all material permanently attached to and supported by the structure.

Static and dynamic live loads, as well as snow, ice, ponding and wind loads shall be based on [appropriate building codes] the New York City Building Code and its appropriate Reference Standards. [Where building codes do not apply, requirements shall be established from performance specifications for the structure.

Allowable stresses provided in *Specification for Aluminum Structures* shall be permitted to be increased by one-third when stresses are produced by wind or seismic loading , acting alone or in combination with the dead load or in combination with dead and live loads. Allowable stresses shall not be increased by one-third if prohibited by the applicable code or specification used to determine the load. Also, the section shall be not less than that required for the dead and other live loads acting alone.]

Combination of loads shall be in accordance with section 27-594 of the Building Code, or, with Reference Standard RS 9-2 if applicable.

In the case of wind and ice loads, the form of the structure and any of its exposed components (e.g. increased area exposed to wind due to icing) shall be considered.

* * *

**DOB 9-2-01;455-89 BCR*

*REFERENCE STANDARD RS 10-10B

SPECIFICATION FOR ALUMINUM STRUCTURES LOAD AND RESISTANCE FACTOR DESIGN OF BUILDINGS AND SIMILAR TYPE STRUCTURES
AA Aluminum Design Manual Part 1-B Specification for Aluminum Structures Load and Resistance Factor Design of Buildings and Similar Type Structures (Second Edition, January 2000).
Modification:

* * *

Section 2.3 Loads– is hereby amended to read as follows:

The nominal loads shall be the minimum design loads stipulated by the [applicable building code or performance specification] New York City Building Code and its applicable Reference Standards. Nominal loads shall be factored and combined in accordance with the [applicable building code or performance specification. In the absence of a code or performance specification, ASCE 7-98, *Minimum Design Loads for Buildings and Other Structures*, shall be used] New York City Building Code and its applicable Reference Standards.

* * *

****DOB 9-2-01;455-89 BCR***

***REFERENCE STANDARD RS 10-11**
SPECIFICATIONS FOR ALUMINUM

MATERIALS
ASTM B209-1988 - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate.
ASTM B308-1988 - Standard Specification for Aluminum-Alloy 6061-T6 Standard Structural Shapes, Rolled or Extruded.
ASTM B429-1988 - Standard Specification for Aluminum-Alloy Extruded Structural Pipe and Tube.
****455-89 BCR***

***REFERENCE STANDARD RS 10-12**
ASTM C317-1976 Standard Specification for Gypsum Concrete (Reapproved 1981).
****455-89 BCR***

****REFERENCE STANDARD RS 10-13**
SPAN TABLES FOR JOISTS AND RAFTERS
AF&PA - SPAN TABLES for JOISTS AND RAFTERS
1993 and its Supplement. Design Values for Joists and Rafters. February 1992.
MODIFICATIONS - The provisions of AF&PA - Span Tables for Joists and Rafters 1993, shall be subject to the following modifications. The section and paragraph numbers are from the standard.
Under the section EXPLANATION OF TABLES
2. LUMBER DESIGN VALUES - Add the following paragraph
AF&PA publication Design Values for Joists and Rafters, February 1992 Supplement, shall be acceptable for determining design values for joists and rafters.
7. LUMBER IDENTIFICATION - Delete the paragraph and substitute the following:
LUMBER IDENTIFICATION - The lumber, including end-jointed or edge-jointed lumber shall be identified in accordance with the provisions of the Building Code for Identification. See Sections 26-251 and 27-618 of the code.
10. DESIGN LOADS - The provisions of the New York City Building Code shall constitute the minimum design loads.
*****DOB 4-17-96; 511-79 BCR; 264-73 BCR; 394-71 BCR***

*****REFERENCE STANDARD RS 10-14**
ACI-214 1977 - Recommended Practice for Evaluation of Strength Test Results of Concrete (Reaffirmed 1983).
******1077-86 BCR; 208-85 BCR; 288-84 BCR***

REFERENCE STANDARD RS 10-15
ACI-506 1966 - Recommended Practice for Shotcreting (Revised 1983).

***REFERENCE STANDARD RS 10-16**
ANSI/ASTM-C42 1984a - Standard Method of Obtaining and Testing Drilled Cores and Sawed Beams of Concrete.
****1077-86 BCR; 288-84 BCR; 887-80 BCR***

***REFERENCE STANDARD RS 10-17**
ANSI/ASTM-C39 1984 - Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens.
****1077-86 BCR; 288-84 BCR; 887-80 BCR***

†**REFERENCE STANDARD RS 10-18**
GLUED-LAMINATED TIMBER DESIGN, MANUFACTURING AND CONSTRUCTION
ANSI/AITC A190.1-1992 Structural Glued Laminated Timber and AITC 200-92 Inspection Manual.
MODIFICATIONS - The provisions of ANSI/AITC A190.1-1992 shall be subject to the following modifications. The section and paragraph numbers are from that standard.
Section 3: List of Referenced Publications.
(a) American Institute of Timber Construction
7012 S. Revere Pkwy., Suite 140
Englewood, CO 80112
AITC 117-93 Design Values/Specifications.
AITC 117-93 Manufacturing Standard Specifications for Structural Glued Laminated Timber of Softwood Species.
†DOB 3-8-96; Local Law 17-1995; 288-84 BCR; 512-79 BCR

††**REFERENCE STANDARD RS 10-19**
ANSI/ASTM-C79 1987-Standard Specification for Gypsum Sheathing Board.
††455-89 BCR; 288-84 BCR; 390-80 BCR

†††**REFERENCE STANDARD RS 10-20**
AWPA-C2 1988-Standard for the Preservative Treatment of Lumber, Timbers, Bridge Ties and Mine Ties by Pressure Processes.
†††455-89 BCR; 288-84 BCR; 512-79 BCR

##**REFERENCE STANDARD RS 10-21**
ANSI/ASTM-C192 1981 - Standard Method of Making and Curing Concrete Test Specimens in the Laboratory.
##288-84 BCR; 887-80 BCR

†††**REFERENCE STANDARD RS 10-22**
AWPA-C9 1985 - Standard for the Preservative Treatment of Plywood by Pressure Process.
†††455-89 BCR; 288-84-BCR; 512-79 BCR

***REFERENCE STANDARD RS 10-23**
ANSI/ASTM-A153 1982 - Standard Specification for Zinc Coating (Hot Dip) on Iron and Steel Hardware.
****288-84 BCR; 493-80 BCR; 302-73 BCR***

REFERENCE STANDARD RS 10-24
ASTM-A90 1969 - Tests for Weight of Coating on Zinc-Coated (Galvanized) Iron or Steel Articles.

****REFERENCE STANDARD RS 10-24A**
ANSI/ASTM-A586 1986 - Specification for Zinc-coated Parallel and Helical Steel Wire Structural Strand.
*****455-89 BCR; 288-84 BCR; 493-80 BCR***

****REFERENCE STANDARD RS 10-24B**
ASTM-A603 1988 - Standard Specification for Zinc-Coated Steel Structural Wire Rope

****455-89 BCR; 288-84 BCR; 493-80 BCR***

*****REFERENCE STANDARD RS 10-25**
Delete
******455-89 BCR; 208-85 BCR; 288-84 BCR***

†**REFERENCE STANDARD RS 10-26**
ANSI/ASTM-B6 1987 - Standard Specification for Zinc (Slab Zinc).
†455-89 BCR; 288-84 BCR; 493-80 BCR; 302-73 BCR

*****REFERENCE STANDARD RS 10-27**
ASTM-D2277 1987 - Specification for Fiberboard Nail-base Sheathing (Reapproved 1980).
******455-89 BCR; 208-85 BCR; 288-84 BCR***

†††**REFERENCE STANDARD RS 10-28**
AWPA-C4 1988 - Standard for Preservative Treatment of Poles by Pressure Processes.
†††455-89 BCR; 288-84 BCR; 512-79 BCR

*****REFERENCE STANDARD RS 10-29**
AWPA-M4 1984 - Standard for the Care of Pressure-Treated Wood Products.
******455-89 BCR; 208-85 BCR; 288-84 BCR***

#**REFERENCE STANDARD RS 10-30**
ANSI-A82.1/ASTM-C67 1987 - Standard Methods of Sampling and Testing Brick and Structural Clay Tile.
#455-89 BCR; 288-84 BCR; 390-80 BCR

REFERENCE STANDARD RS 10-31
ANSI-A98.1/ASTM-C62 1988 - Standard Specification for Building Brick (Solid Masonry Units Made from Clay or Shale).
#455-89 BCR; 288-84 BCR; 390-80 BCR

REFERENCE STANDARD RS 10-31A
ANSI-A99.1/ASTM-C216 1987a Standard Specification for Facing Brick (Solid Masonry Units Made from Clay or Shale).
#455-89 BCR; 288-84 BCR; 390-80 BCR

#REFERENCE STANDARD RS 10-31B
ANSI/ASTM-C652 1988 Standard Specification for Hollow Brick (Hollow Masonry Units Made from Clay or Shale).
#455-89 BCR; 288-84 BCR; 390-80 BCR

#**REFERENCE STANDARD RS 10-32**
ANSI-A78.1/ASTM-C73 1985 - Standard Specifications for Calcium Silicate Face Brick (Sand-Lime Brick).
#455-89 BCR; 288-84 BCR; 390-80 BCR

#**REFERENCE STANDARD RS 10-33**
ANSI-A75.1/ASTM-C55 1985 - Standard Specification for Concrete Building Brick.
#455-89 BCR; 288-84 BCR; 390-80 BCR

#**REFERENCE STANDARD RS 10-34**
ANSI-A74.1/ASTM-C34 1984 Standard Specification for Structural Clay Load-bearing Wall tile.
#455-89 BCR; 288-84 BCR; 390-80 BCR

#**REFERENCE STANDARD RS 10-35**
ANSI/ASTM-C56 1971 - Standard Specification for Structural Clay Non-loadbearing Tile 1986.
#455-89 BCR; 288-84 BCR; 390-80 BCR

#**REFERENCE STANDARD RS 10-36**
ANSI-A81.1/ASTM-C145 1985 - Standard Specification for Solid Loadbearing Concrete Masonry Units.
#455-89 BCR; 288-84 BCR; 390-80 BCR

#**REFERENCE STANDARD RS 10-37**
ANSI-A79.1/ASTM-C90 1985 - Standard Specification for Hollow, Loadbearing Concrete Masonry Units.
#455-89 BCR; 288-84 BCR; 390-80 BCR

#**REFERENCE STANDARD RS 10-38**
ANSI-A80.1/ASTM-C129 1985 - Standard Specification for Hollow, Non-load-bearing Concrete Masonry Units.
#455-89 BCR; 288-84 BCR; 390-80 BCR

****REFERENCE STANDARD RS 10-39**
ANSI/ASTM-C52 1954 - Standard Specification for Gypsum Partition Tile or Block (Reapproved 1977).
*****288-84 BCR; 390-80 BCR***

#**REFERENCE STANDARD RS 10-40**
ANSI-A101.1/ASTM-C125 1986 - Standard Specification for Ceramic Glazed Structural Clay Facing Tile, Facing Brick and Solid Masonry Units.
#455-89 BCR; 288-84 BCR; 390-80 BCR

*****REFERENCE STANDARD RS 10-41**
ANSI/ASTM-A116 1988 - Standard Specification for Zinc-Coated (Galvanized) Steel Woven Wire Fence Fabric.
******455-89 BCR; 288-84 BCR; 493-80 BCR; 302-73 BCR***

†**REFERENCE STANDARD RS 10-42**
ANSI/ASTM-B227 1970 - Standard Specifications for Hard-Drawn Copper-Clad Steel Wire. (Reapproved 1980)
†208-85 BCR; 288-84 BCR

REFERENCE STANDARD RS 10-43
FS SS-S-721C 1964 Stone, Architectural, Cast.

††**REFERENCE STANDARD RS 10-44**

ANSI/ASTM-C494 1986 - Standard Specification for Chemical Admixtures for Concrete.
††455-89 BCR; 288-84 BCR; 887-80 BCR

REFERENCE STANDARD RS 10-45
ACI-ASCE-334 Concrete Shell Structures Practice and Commentary. Report of Committee 334 of the American

Concrete Journal of the American Concrete Institute, proc. V61, M.9, Sept. 1964 (Revised 1982).

#REFERENCE STANDARD RS 10-46
ANSI/ASTM-C270 1988 Specifications for Mortar for Unit Masonry.
#455-89 BCR; 288-84 BCR; 390-80 BCR

#REFERENCE STANDARD RS 10-47
ANSI/ASTM-C476 1983 Standard Specification for Grout for Reinforced and Non-Reinforced Masonry.
#455-89 BCR; 288-84 BCR; 390-80 BCR

#REFERENCE STANDARD RS 10-48
ANSI/ASTM-C22 1983 - Standard Specification for Gypsum.
#455-89 BCR; 288-84 BCR; 390-80 BCR

†††REFERENCE STANDARD RS 10-49
ASTM-C143 1978 - Standard Test Method for Slump of Portland Cement Concrete
†††1077-86 BCR

REFERENCE STANDARD RS 10-50
Deleted.

***REFERENCE STANDARD RS 10-51**
ANSI/ASTM-C172 1982 - Standard Method of Sampling Freshly Mixed Concrete.
****1077-86 BCR; 288-84 BCR; 887-80 BCR***

****REFERENCE STANDARD RS 10-52**
ANSI/ASTM-C31 1987 - Standard Method of Making and Curing Concrete Test Specimens in the Field.
*****455-89 BCR; 1077-86 BCR; 288-84 BCR; 887-80 BCR***

*****REFERENCE STANDARD RS 10-53**
APA 1986-Plywood Design Specifications.
******455-89 BCR; 208-85 BCR; 288-84 BCR***

*****REFERENCE STANDARD RS 10-54**
APA-PRP-108-1988 - Performance Standards and Policies for Structural-Use Panels.
******455-89 BCR; 208-85 BCR; 288-84 BCR***

*****REFERENCE STANDARD RS 10-55**
APA-1985 Design and Fabrication Specification of all Plywood-Lumber Components.
******455-89 BCR; 208-85 BCR; 288-84 BCR***

†REFERENCE STANDARD RS 10-56
TECO-1981 - Standards and Policies for Structural-Use Panels.
†208-85 BCR

*****REFERENCE STANDARD RS 10-57**
DOC PS 1-83-U.S. - Product Standard for Construction & Industrial Plywood. (Revised June 1987).
******455-89 BCR; 208-85 BCR; 288-84 BCR***

***REFERENCE STANDARD RS 10-58**
APA Form No. L350C-1989 - Diaphragms - Design/ Construction Guide.
APA Form No. E30K-1989 - Residential & Commercial, Design/Construction Guide.
****Local Law 17-1995.***

††REFERENCE STANDARD RS 10-59
Deleted.
††208-85 BCR; 288-84 BCR

REFERENCE STANDARD RS 10-60
Deleted.

###REFERENCE STANDARD RS 10-61
ANSI/ASTM-C173 1978 - Standard Test Method for Air Content of Freshly Mixed Concrete by the Volumetric Method.
###Local Law 65-1990.

###REFERENCE STANDARD RS 10-62
ANSI/ASTM-C231 1982 - Standard Test Method for Air Content of Freshly Mixed Concrete by the Pressure Method.
###Local Law 65-1990

###REFERENCE STANDARD RS 10-63
ANSI/ASTM-C138 1981 - Standard Test Method for Unit Weight Yield and Air Content (Gravimetric) of Concrete.
###Local Law 65-1990

###REFERENCE STANDARD RS 10-64
ANSI/ASTM-C567 1985 - Standard Test Method for Unit Weight of Structural Lightweight Concrete.
###Local Law 65-1990

†††REFERENCE STANDARD RS 10-65
ACI-211.2 1981 - Standard Practice for Selecting Proportions for Structural Lightweight Concrete.
†††1077-86 BCR

#REFERENCE STANDARD RS 10-66
Deleted.
#302-73 BCR

##REFERENCE STANDARD RS 10-67
ANSI-Z97.1 1984 - Safety Performance Specifications and Methods of Test for Safety Glazing Material Used in Buildings.
##455-89 BCR; 714-80 BCR

##REFERENCE STANDARD RS 10-68
SPECIFICATIONS FOR FLAT GLASS
ASTM C1036-1985 - Standard Specification for Flat Glass.
ASTM C1048-1987 - Standard Specification for Heat-Treated Flat Glass-Kind HS, Kind FT Coated and Uncoated Glass.
##455-89 BCR; 714-80 BCR

REFERENCE STANDARD RS 11
FOUNDATIONS

* LIST OF REFERENCED NATIONAL STANDARDS

ANSI/ASTM-C136	Method for or Sieve Analysis of Fine and Coarse Aggregates……...1984a
ANSI/ASTM-C117	Test Method for Material Finer than 75-um (No. 200) Sieve in Material Aggregates by Washing……...……...…… 1987
ANSI/ASTM-D1557	Test Methods for Moisture - Density Relations of Soils and Soil Aggregate Mixtures using 10-lb. (4.54-kg) Rammer and an 18 in. Drop……..……...……....1987
ANSI/ASTM-D3017	Standard Test Method for Moisture Content of Soil and Soil Aggregate in Place by Nuclear Methods (Shallow Depth)……..... 1978
ANSI 05.1	Specifications and Dimensions for Wood Poles……1987
AWPA-C1	Standard for the Preservative Treatment of all Timber Products by Pressure Processes.. 1987
AWPA-C3	Standard for the Preservative Treatment of Piles by Pressure Processes……1987
AWPA-C4	Standard for the Preservative Treatment of Poles by Pressure Processes……...1988
AWPA-M2	Standard Instructions for the Inspection of Preservative Treatment of Wood…….1983
AWPA-M4	Standard for the Care of Pressure-Treated Wood Products…… 1984
ASTM-D25	Standard Specification for Round Timber Piles……..... 1988
ASTM-D2899	Establishing Design Stresses for Round Timber Piles……1986
ANSI-ASTM-A252	Standard Specification for Welded and Seamless Steel Pipe Piles……1982

**** 1342-88 BCR; 289-84 BCR***

** REFERENCE STANDARD RS 11-1

ANSI/ASTM-C136	Method for Sieve Analysis of Fine and Coarse Aggregates…… .. 1984a

***** 1342-88 BCR;289-84 BCR;610-80 BCR***

** REFERENCE STANDARD RS 11-2

ANSI/ASTM-C117	Test Method for Material Finer than 75-um (No. 200) Sieve in Material Aggregates by Washing……..... 1987

***** 1342-88 BCR;289-84 BCR;610-80 BCR***

*** REFERENCE STANDARD RS 11-3

ANSI/ASTM-D-1557	Test Methods-Method of Test for the Moisture-Density Relations of Soils and Soil Aggregate Mixtures using 10 lb. (4.54-kg.) Rammer and an 18 in. Drop…….. 1978

****** 1342-88 BCR;610-80 BCR***

† REFERENCE STANDARD RS 11-3A

ANSI/ASTM-D3017 1978 - Standard Test Method for Moisture Content of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth)…….. 1978

†610-80 BCR

†† REFERENCE STANDARD RS 11-4

AWPA C4 1988 - Standard for the Preservative Treatment of Poles by Pressure Processes. ***512-79 BCR***

††1342-88 BCR; 289-84 BCR; 610-80 BCR;

†† REFERENCE STANDARD RS 11-5

ANSI 05.1 1987 - Specification and Dimensions for Wood Poles.

†† 1342-88 BCR; 289-84 BCR; 610-80 BCR;512-79 BCR

†† REFERENCE STANDARD RS 11-6

AWPA-C1-1987 -	Standard for the Preservative Treatment of All Timber Products by Pressure Processes.
AWPA-C3-1987 -	Standard for the Preservative Treatment of Piles by Pressure Processes.
AWPA-M2-1983 -	Standard Instructions for the Inspection of Preservative Treatment of Wood.
AWPA-M4-1984 -	Standard for the Case of Pressure Treated Wood Products.

††1342-88 BCR; 289-84 BCR; 610-80 BCR; 512-79 BCR

†† REFERENCE STANDARD RS 11-7

ANSI/ASTM-D25	Standard Specifications for Round Timber Piles……	1988
ASTM-D2899	Establishing Design Stresses for Round Timber Piles……..	1986

MODIFICATIONS The provisions of ASTM-D25- 1988 are modified so as to add the following note:

NOTE: The prior Use Classification distinction of Class A and Class B piles has been eliminated. The Use Classification now reflects the manner in which the load-carrying capacity of timber piles are developed, namely as Friction Piles or End-Bearing Piles. Class A and Class B piles, as referred to in section 27-707(a)(1), shall be distinguished from each other only by minimum tip size.

††1342-88 BCR; 289-84 BCR; 610-80 BCR; 512-79 BCR

** REFERENCE STANDARD RS 11-8

ANSI/ASTM-A252 1982 - Standard Specification for Welded and Seamless Steel Pipe Piles.

*****289-84 BCR; 610-80 BCR***

REFERENCE STANDARD RS 12
LIGHT, HEAT, VENTILATION AND NOISE CONTROL

* LIST OF REFERENCED NATIONAL STANDARDS

ASHRAE Handbook	HVAC Systems and Application	1987
ANSI/ASTM E90	Standard Method for Laboratory Measurement of Air- borne Sound Transmission Loss of Building Partitions	1987
ASTM E413	Standard Classification for Determination of Sound Transmission Class	1987
ANSI/ASTM E336	Standard Test Method for Measurement of Airborne Sound Insulation in Buildings	1984
NCMA-TEK 69.A	New Data on Sound Reduction with Concrete Masonry Walls	1978
GA-600	Fire Resistance Design Manual Twelfth Edition, as Modified	1988
ANSI/ASTM E492	Standard Method of Laboratory Measurement of Impact Sound Transmission through Floor-Ceiling Assemblies using the Tapping Machine	1986
ANSI/ISO 1680	Test Code for the Measurement of Airborne Noise Emitted by Rotating Electrical Machinery, Part 1 and Part 2	1986
ASHRAE Handbook	Fundamentals	1985
ANSI S 1.4	Specification for Sound Level Meters and Supplement ANSI A1.4a-1985	1983
ANSI S 12.34	Engineering Methods for the Determination of Sound Power Levels of Noise Sources for Free-Field Conditions over a Reflecting Plane	1988
ANSI S 12.30	Guidelines for the Use of Sound Power Standards and for the Preparation of Noise Test Codes	1990
ANSI S 12.31	Precision Method for the Determination of Sound Power Levels of Broadband Noise Sources in Reverberation Rooms	1990
ANSI S 12.32	Precision Method for the Determination of Sound Power Levels of Discrete Frequency and Narrow Band Noise Sources in Reverberation Rooms	1990
ANSI S 1.13	Methods for the Measurement of Sound Pressure Levels (R 1986)	1971
ANSI S 1.6	Preferred Frequencies and Band Numbers for Acoustical Measurements (R 1990)	1984
ANSI S 1.11	Specification for Octave-Band and Fractional-Octave- Band Analog and Digital Filters	1986
Opinion 76-16	Proceeding on Motion of the Commissioner as to Insulation Standards, PSC Case No. 26913 August 13, 1976	1976

****243-90 BCR; 261-86 BCR; 290-84 BCR***

** REFERENCE STANDARD RS 12-1 HEATING

1. HEATING CAPACITY - The heating capacity required in each room or space shall be calculated in accordance with the principles set forth in ASHRAE Handbook-1987 HVAC Systems and Applications.

The calculations of heating capacity shall consider the areas and transmission coefficients of all surfaces exposed to outdoor temperatures or to unheated areas, and shall include allowance for air infiltration and wind velocity. In spaces with high ceilings, an allowance shall be made for the effect of stratification so that the prescribed temperature will be maintained at a level 5 feet above the floor.

*****243-90 BCR; 253-82 BCR***

*** REFERENCE STANDARD RS 12-2 SOUND TRANSMISSION CLASS RATINGS

TEST PROCEDURES FOR STC RATINGS-The STC rating of a construction assembly shall be obtained from one of the following methods:

(a) Laboratory test:

ANSI/ASTM E 90 - 1987 Standard Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions.

ASTM E 413 - 1987 - Standard Classification for Determination of Sound Transmission Class.

(b) Field Test:

ANSI/ASTM E 90 - 1987 Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions.

ANSI/ASTM E 336 - 1984 Standard Test Method for Measurement of Airborne Sound Insulation in Buildings, applicable portions of this.

STC TEST DATA - Certified laboratory test data obtained by acceptable laboratories in accordance with ANSI/ASTM E 90 AND ASTM E 413 may be used in obtaining STC ratings.

The following national standards may be accepted for sound transmission class-ratings only:

NCMA-TEK 69.A - 1978 New Data on Sound Reduction with Concrete Masonry Walls.

GA-600 1988 Fire Resistance Design Manual, Twelfth Edition, as Modified.

******243-90 BCR; 261-86 BCR; 290-84 BCR; 253-82 BCR***

*** REFERENCE STANDARD RS 12-3

IMPACT NOISE RATINGS

TEST METHOD FOR INR - The INR of a floor-ceiling construction assembly shall be obtained from the following:

ANSI/ASTM E 492 - 1986 Standard Method of Laboratory Measurement of Impact Sound Transmission through Floor-Ceiling Assemblies using the Tapping Machine.

TEST DATA FOR INR RATINGS - Certified laboratory test data obtained by acceptable laboratories in accordance with ANSI/ASTM E 492 may be used for INR RATING.

******243-90 BCR; 261-86 BCR; 253-82 BCR***

***REFERENCE STANDARD RS 12-4**
NOISE CRITERION (NC) LEVELS

NC levels shall be as shown in ASHRAE 1989 Handbook-Fundamentals.

****243-90 BCR; 253-82 BCR***

***REFERENCE STANDARD 12-5**
TEST PROCEDURES FOR SOUND POWER LEVEL

The sound power levels of exterior mechanical equipment and of fan coil units, grills, registers, diffusers and induction units shall be measured in accordance with the following:

ASHRAE Handbook1987- HVAC Systems and Applications.

ANSI/ISO 1680-1986 Test Code for the Measurement of Airborne Noise Emitted by Rotating Electrical Machinery, Part 1 and Part 2.

****243-90 BCR; 253-82 BCR***

****REFERENCE STANDARD 12-6**

ANSI S 1.4-1983 - Specification for Sound Level Meters and Supplement ANSI S 1.4a-1985.

*****243-90 BCR; 261-86 BCR; 290-84 BCR***

***REFERENCE STANDARD 12-7**

ANSI S 12.34 - 1988 Engineering Methods for the Determination of Sound Power Levels of Noise Sources for Free-Field Conditions over a Reflecting Plane.

ANSI S 12.30 - 1990 Guidelines for the Use of Sound Power Standards and for the Preparation of Noise Test Codes.

ANSI S 12:30† - 1990 Precision Method for the Determination of Sound Power Levels of Broadband Noise Sources in Reverberation Rooms.

ANSI S 12.32-1990 Precision Method for the Determination of Sound Power Levels of Discrete Frequency and Narrow Bank Noise Sources in Reverberation Rooms.

ANSI S 1.13-1971 Methods for the Measure of Sound Pressure Levels. (R 1986).

****243-90 BCR; 253-82 BCR***
†As enacted; but "12.31" probably intended.

*****REFERENCE STANDARD 12-8**

ANSI S 1.61-984 Preferred Frequencies and Band Numbers for Acoustical Measurements (R 1990).

******243-90 BCR; 261-86 BCR; 253-82 BCR***

*** REFERENCE STANDARD 12-9**

ANSI S1.11-1986-Specification for Octave-Band and Fractional-Octave Band Analog and Digital Filters.

****243-90 BCR; 253-82 BCR***

REFERENCE STANDARD 12-10

OPINION 76-16 PSC 1976 Case No. 26913-Proceeding on Motion of the Commission as to Insulation Standards, August 13, 1976.

REFERENCE STANDARD RS 13
MECHANICAL VENTILATION, AIR CONDITIONING, AND REFRIGERATION SYSTEMS

* LIST OF REFERENCED NATIONAL STANDARDS

**NFiPA 90A	Standard for the Installation of Air Conditioning and Ventilating Systems, As Modified....1996
ANSI/ NFiPA 96	Standard for the Installation of Equipment for the Removal of Smoke and Grease-Laden Vapors from Commercial Cooking Equipment..... 1984
***NFiPA 90B	Standard for the Installation of Warm Air Heating and Air Conditioning and Ventilating Systems, As Modified 1996
ANSI/ NFiPA 91	Standard for the Installation of Blower and Exhaust Systems for Dust, Stock and Vapor Removal Conveying.....1973
ANSI B60.1/ ASHRAE 15	Safety Code for Mechanical Refrigeration..... 1978
ANSI Z263.1/ UL 207	Standard for Refrigerant-Containing Components and Accessories Non-Electrical..1982
ANSI Z262.1/ UL 303	Standard for Refrigeration and Air-Conditioning Condensing and Compressor Units, Revision March 1982.....1980
ANSI B136.1/ UL 353	Limit Controls, Revision November 1976.....1974
ANSI Z226.1/ UL 372	Standard for Primary Safety Controls for Gas and Oil-Fired Appliances. Revisions September 10, 1976 and September 3, 19..... 1975
ANSI B144.1/ UL 465	Standard for Central Cooling Air Conditioners. Revision May 1981.....1978
ANSI C33.14/ UL 484	Room Air Conditioners.....1982
ANSI B191.1/ UL 559	Standard for Heat Pumps. Revision October 1981..... 1975
ANSI Z251.1/ UL 883	Standard for Fan-Coil Units and Room Fan-Heaters. Revision February 1982..... 1980
ANSI B124.1/ UL 900	Standard for Test Performance of Air Filter Units. Revision December 1980.....1977
ANSI/ NFiPA 17	Standard for Dry Chemical Extinguishing Systems..... 1980

Note 1: Wherever in these standards reference is made to NFiPA 70, National Electrical Code, the work so covered shall meet the requirements of the Electrical Code of the City of New York.
Note 2: Wherever in these standards reference is made to the authority having jurisdiction, substitute " to the Commissioner."

**** 913-82 BCR***
*****DOB 5-4-02; Local Law 16-1984***
******DOB 5-4-02***

*** REFERENCE STANDARD RS 13-1

NFiPA No. 90 A-96, as modified, Standard for the Installation of Air Conditioning and Ventilation Systems.
Those provisions of ANSI/NFiPA No. 90 A-96 as herein set forth with the modifications thereto shall constitute Reference Standard RS 13-1.
The appendices to ANSI/NFiPA No. 90 A-96 are not part of this Reference Standard. These are for informational purposes only, and are not reproduced here.
Wherever reference is made to the "National Electrical Code" it shall be changed to read "Electrical Code of the City of New York."
The New York State Energy Conservation Construction Code also regulates the design and construction of heating, ventilating, and air conditioning systems in New York City.

STANDARD FOR THE INSTALLATION OF AIR CONDITIONING AND VENTILATION SYSTEMS ANSI/NFiPA No. 90 A-1996, AS MODIFIED

Indicates where text deviates from ANSI/NFiPA No. 90A – 1996.
Section numbers are from ANSI/NFiPA No. 90A – 1996.

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CHAPTER 1 - GENERAL

1-1 Introduction. - An air duct system has the potential to convey smoke, hot gases, and flame from area to area and to supply air to aid combustion in the fire area. For these reasons, fire protection of an air duct system is essential to safety, to life and the protection of property. However, an air duct system's fire integrity also enables it to be used as part of a building's fire protection system. *(See Section 1-4)*

1-2 Scope. - This standard shall apply to all systems for the movement of environmental air in structures that are not otherwise exempted by Section 27-777(b) of the Administrative Code.

1-3 Purpose.

1-3.1 This standard is intended to prescribe minimum requirements for safety to life and property from fire. These requirements are intended to:

(a) Restrict the spread of smoke through air duct systems within a building or into a building from the outside.

(b) Restrict the spread of fire through air duct systems from the area of fire origin whether located within the building or outside.

(c) Maintain the fire-resistive integrity of building components and elements such as floors, partitions, roofs, walls, and floor/roof-ceiling assemblies affected by the installation of air duct systems.

(d) Minimize ignition sources and combustibility of the elements of the air duct systems.

(e) Permit the air duct systems in a building to be used for the additional purpose of emergency smoke control.

1-3.2 Nothing in this standard is intended to prevent the use of new methods or devices, provided that sufficient technical data is submitted to the Department of Buildings to demonstrate that the proposed method or device is equivalent in quality, strength, durability, and safety to that prescribed by this standard.

1-3.3 The provisions of this standard are not intended to be applied retroactively. Where the system is being

altered, extended, or renovated, the requirements of Article 4 of Subchapter 1 of Chapter 1 of Title 27 of the Administrative Code shall govern the applicability of this standard.

1-4 Maintenance. –The appropriate provisions of the Building Code shall apply.

1-5 Definitions.

Accepted - Means "Accepted" by the Materials and Equipment Acceptance Division of the Department of Buildings.

NOTE: The MEA Division is the "authority having jurisdiction" in use of materials, assemblies, forms, methods of construction, and service equipment subject to the acceptance requirements of Building Code Sections 27-131 and 27-135.

Air Cleaner - A device used to reduce or remove airborne solids from heating, ventilating and air conditioning systems by electrostatic means.

Air Distribution System - A continuous passageway for the transmission of air that, in addition to air ducts, shall be permitted to include air connectors, air duct fittings, dampers, plenums, fans, and accessory air handling equipment, but that does not include conditioned spaces.

Air Duct - A conduit for conveying air.

Air Duct Connector - A conduit for transferring air between an air duct or plenum and an air terminal unit or an air inlet or an air outlet. *(For limitations on use of air connectors, see Section 2-3.2.1.)*

Air Duct Covering - A material such as adhesive, insulation, banding, a coating(s), film, or a jacket used to cover the outside surface of an air duct, fan casing, or duct plenum.

Air Duct Lining - A material such as an adhesive, insulation, a coating(s), or film used to line the inside surface of an air duct, fan casing, or duct plenum.

Air Filters - A device used to reduce or remove airborne solids from heating, ventilating, and air conditioning systems by mechanical means.

(a) A Class 1 air filter is one which, when clean, does not contribute fuel when attacked by flame, and emits only negligible amounts of smoke when tested in accordance with RS 13-15.

(b) A Class 2 air filter is one which, when clean, burns moderately when attacked by flame or emits moderate amounts of smoke or both when tested in accordance with RS 13-15.

Air Inlet - Any opening through which air is removed from a space and returned to an air distribution system.

Air Outlet - Any opening through which air is delivered to a space from an air distribution system.

Air Terminal Unit - An appliance receiving, conditioning, and delivering air supplied through an air distribution system.

Air Transfer Opening - An opening designed to allow the movement of environmental air between two contiguous spaces.

Approved - See subchapter 2 of the Building Code for definition.

Authority Having Jurisdiction - Means "The Commissioner of the Department of Buildings" or his designee.

Blower - A fan used to force air under pressure through an air duct system.

Ceiling Damper - A device installed to limit radiant heat transfer through an air outlet or air inlet opening in the ceiling of a floor/roof-ceiling assembly having not less than a 1-hour fire resistance rating. Such a device is described in the construction details for some tested floor/roof-ceiling assemblies.

Environmental Air - Air that is supplied, returned, recirculated, or exhausted from spaces for the purpose of modifying the existing atmosphere within the building.

Exhaust Air - Air removed from a space and not reused.

Exhaust System - An assembly of connected ducts, plenums, fittings, registers, grilles and hoods through which air is conducted from the space or spaces and exhausted to the outside atmosphere.

Fan - An assembly comprising blades or runners and a housing or casing that is either a blower or an exhaust fan.

Fire Damper - A device installed in an air distribution system, that is designed to close automatically upon detection of heat, to interrupt migratory airflow, and to restrict the passage of flame. A combination fire and smoke damper meets the requirements of both.

Fire-Resistance Rating - See subchapter 2 of the Building Code for definition.

Flame Spread Rating - The measurement of the comparative rate of propagation of flame over the surface of a material as determined by a fire test made in accordance with a specified standard in subchapter five of [this chapter] the Building Code.

Limited Combustible Material - A building construction material not complying with the definition of non-combustible material, which, in the form in which it is used, has a potential heat value not exceeding 3500 Btu/lb (8141kj/kg) and complies with one of the following paragraphs (a) or (b). Materials subject to increase in combustibility or flame spread index/rating beyond the limits herein established through the effects of age, moisture, or other atmospheric condition shall be considered combustible.

(a) Materials having a structural base or noncombustible material, with a surfacing not exceeding a thickness of one-eighth in. (3.2 mm), that has a flame spread index/rating not greater than 50.

(b) Materials, in the form and thickness used, other than as described in (a), having neither a flame spread index/rating greater than 25 nor evidence of continued combustion, and of such composition that surfaces that would be exposed by cutting through the material on any plane would have neither a flame spread index/rating

greater than 25 nor evidence of continued progressive combustion.

Listed - Equipment, materials or services included in a list published by an organization acceptable to the "authority having jurisdiction" and concerned with evaluation of products or services that maintains periodic inspection of production of listed equipment, materials or periodic evaluation of services, and whose listing states either that the equipment, material or service meets identified standards or has been tested and found suitable for use in a specified purpose.

NOTE: The means for identifying listed equipment may vary for each organization concerned with product evaluation, some of which do not recognize equipment as listed unless it is also labeled. The "authority having jurisdiction" should utilize the system employed by the listing organization to identify a listed product.

Noncombustible - See subchapter 2 of the Building Code for definition.

Plenum - An air compartment or chamber located in one story only to which one or more ducts are connected and which forms part of the air supply or return system and may be part of the building construction such as the concealed space above a ceiling. Any such air compartment or chamber in more than one contiguous story shall meet the requirements of Section 2-3.10.

Shall - Indicates a mandatory requirement.

Smoke - The airborne solid and liquid particulars and gases evolved when a material undergoes pyrolysis or combustion.

Smoke Barrier - See subchapter 2 of the Building Code for definition.

Smoke Control - A system that utilizes fans to produce pressure differences to manage smoke movement.

Smoke Damper - A device to resist the passage of smoke which:

(a) Is arranged to operate automatically, and

(b) Is controlled by a smoke detector, and

(c) When required shall be capable of being positioned manually from a remote command station.

A smoke damper may be a fire damper or a damper serving other functions, if its location lends itself to the multiple functions. A combination fire and smoke damper shall meet the requirements of both.

Smoke Detector - A device which senses visible or invisible particles of combustion.

Smoke Developed Rating - A smoke developed rating of a material refers to a number or classification of a material obtained according to RS 5-5.

CHAPTER 2 - HVAC SYSTEMS

2-1 General Requirements - Equipment.

2-1.1 Equipment shall be arranged to afford access for inspection maintenance, and repair.

2-1.2 Equipment shall be selected and installed based on its proper application with respect to the manufacturer's installation instructions and listing, as applicable.

2-1.3 Equipment shall be guarded for personnel protection and against intake or foreign matter into the system.

2-1.4 Electrical wiring and equipment shall be installed in accordance with NYC Electrical Code.

2-1.5 Equipment Location. - *See Section 3-1*

2-2 System Components.

2-2.1 Outside Air Intakes and Exhaust.

2-2.1.1 Outside air intakes shall be located to avoid drawing in combustible material or flammable vapor and to minimize hazard from fires in other structures.

2.2.1.2 Outside air intakes shall be protected by screens of corrosion-resistant material not larger than one-half in. (12.7 mm) mesh.

2-2.1.3 An outdoor air intake opening with gross area of more than 144 square inches (.0929 m^2) shall be provided with fire dampers and smoke dampers, or combined fire and smoke dampers when such opening is located as follows:

(a) Less than 30 feet (9.145 m) above grade.

(b) Less than 30 feet (9.145 m) in any direction from any opening in another building.

(c) Less than 15 feet (4.570 m) from a lot line.

(d) Less than 50 feet (15.240 m) above and less than 50 feet (15.240 m) in any direction from a roof of combustible material or a building in which the exterior walls are constructed wholly or partly of wood.

Exception No. 1: Smoke dampers shall not be required for outdoor air intake openings installed in any construction required to have a fire resistance rating of less than two hours.

Exception No. 2: Smoke dampers shall not be required for outdoor air intake openings of systems greater than 15,000 cfm (7080L/s) which are provided with smoke dampers in accordance with 2-3.9.2 and arranged as to not introduce smoke into the building or space in which the equipment is located.

2-2.1.4 To minimize the hazard from fires and from noxious, toxic or obnoxious discharges to structures, any exhaust air discharge to the outside atmosphere shall terminate at or above the roof or setback roof of the building or in an exterior wall adjoining a street, yard or court. Exhaust air discharges shall be at least 10 feet (3.050 m) above the sidewalk or ground and shall terminate at least 10 feet (3.050 m) from any window in another building or from any window in a residential portion of the same building, or from any fire escape, exterior stair, or balcony. Exhaust system openings shall be provided with vanes or louvers constructed so as to direct the air away from windows, other openings, and pedestrians. Protection of openings in exterior walls shall be in accordance with Table 3-4 of the Building Code.

2-2.2. Air Cleaners and Air Filters.

2-2.2.1 Electrostatic air cleaners shall be accepted in accordance with *RS 14-6,* and shall be installed in conformance with the conditions of acceptance.

2-2.2.2 Approved air filters shall have either a Class 1 or Class 2 rating in accordance with *RS 13-15.*

2-2.2.3 Liquid adhesive coatings used on air filters shall have flash point not lower than 325 F (163 C) as determined by *RS 14-13.*

2-2.2.4 Where air filters are flushed with liquid adhesives, the system shall be arranged so that the air cleaner cannot be flushed while the fan is in operation.

2-2.2.5 Liquid adhesive tanks into which removable filters are dipped should preferably be located outside the building or in a separate fire resistive room and stored in accordance with NFiPA 30/96, *Flammable and Combustible Liquids Code*. Such tanks shall be of metal, equipped with tight-fitting covers and shall be kept tightly covered when not in actual use.

2-2.2.6 All air filters shall be kept free of excess dust and combustible material. Unit filters shall be renewed or cleaned when the resistance to airflow has increased to two times the original resistance or when the resistance has reached a value of recommended replacement by the manufacturer. A permanently installed draft gauge shall be provided for this purpose. Where the filters are of the automatic liquid adhesive type, sludge shall be removed from the liquid adhesive reservoir regularly.

2-2.3 Fans.

2-2.3.1 Installation. - Fans shall be installed in accordance with applicable NFPA standards and manufacturer's instructions. Fans shall be suitable for the specific installation.

2-2.3.2 Access. - Fans shall be located, arranged and installed to afford access for inspection and maintenance.

2-2.3.3 Exposed Inlets. - Exposed fan inlets shall be protected with metal screens to prevent the entry of paper, trash, and similar foreign materials.

2-2.4 Air Cooling and Heating Equipment.

2-2.4.1 Installation. - Heating and cooling equipment shall be installed in accordance with applicable NFPA standards and the manufacturer's instructions. The equipment shall be approved/accepted for the specific installation. *(See 2-3.3.1.)*

2-2.4.2 Appliances. - Materials used in the manufacturing of fan coil units, self-contained air-conditioning units, furnaces, heat pumps, humidifiers, and all similar appliances shall meet the requirements of 2-3.3.1 and 2-3.3.2. Acceptance by the MEA Division of the Department of Buildings shall be sufficient evidence of compliance with this requirement.

2-2.4.3 Mechanical Cooling. - Mechanical refrigeration used with air duct systems shall be installed in accordance with recognized safety practices and RS 13-6.

2-2.4.4 Furnaces. - Heating furnaces, combined with cooling units in the same air duct system shall be installed in accordance with *RS 14-2,* if gas fired, and *RS 14-3* if oil fired.

2-2.4.5 Duct Heaters. - Where electrical resistance or fuel burning heaters are installed in air ducts, the air duct coverings and their installation shall comply with the provisions of 2-3.5.3. The installation of electrical duct heaters shall comply with the Electrical Code of the City of New York.

2-3 Air Distribution.

2-3.1 Air Ducts.

2-3.1.1 Air ducts shall be permitted to be rigid or flexible and shall be constructed of materials that are reinforced and sealed to satisfy the requirements for the use of the air duct system, such as the supply air system, the return or exhaust air system, and the variable volume/ pressure air system.

2-3.1.2 Air ducts shall be constructed of the following materials:

(a) Iron, steel, aluminum, copper, concrete, masonry, or clay tile.

(b) Class 0 or Class 1 rigid or flexible air ducts tested in accordance with UL 181/96, *Standard for Safety Factory-Made Air Ducts and Air Connectors,* and installed in conformance with the conditions of listing.

Exception No. 1: Class 0 or Class 1 rigid or flexible air duct shall not be used as a vertical air duct that is more than two stories in height.

Exception No. 2: Class 0 or Class 1 rigid or flexible air ducts shall not be used for air ducts containing air at temperatures in excess of 250 F (121 C).

(c) Where the temperature of the conveyed air does not exceed 125 F (52 C) in normal service, negative pressure exhaust or return air ducts shall be permitted to be constructed of gypsum board having a maximum flame spread index/rating of 25 without evidence of continued progressive combustion and a maximum smoke developed index/rating of 50.

Exception: The maximum conveyed air temperature of 125 F (52 C) shall not apply to gypsum board material used for emergency smoke exhaust air ducts.

(d) All air duct materials shall be suitable for continuous exposure to the temperature and humidity conditions of the environmental air in the air duct.

2-3.1.3 The materials, thickness, construction, and installation of ducts shall provide structural strength and durability in conformance with recognized good practice. Air ducts shall be considered to be in compliance with this requirement where constructed and installed in accordance with RS 14-22. Where no standard exists for the construction of air ducts, they shall be constructed to withstand both the positive and negative pressures of the system.

2-3.2 Air Connectors.

2-3.2.1 Air connectors are limited-use, flexible air ducts that shall be required to conform to the provisions for air ducts where they meet the following requirements:

(a) Air connectors shall conform to the requirements for Class 0 or Class 1 connectors when tested and

approved in accordance with UL 181/96, *Standard for Safety Factory-Made Air Ducts and Air Connectors.*

(b) Class 0 or Class 1 air connectors shall not be used for ducts containing air at temperatures in excess of 250 F (121 C).

(c) Air connector runs shall not exceed 14 ft. (4.265 m) in length.

(d) Air connectors shall not pass through any wall, partition, or enclosure of a vertical shaft that is required to have a fire resistance rating of 1 hour or more.

(e) Air connectors shall not pass through floors.

2-3.2.2 Vibration isolation connectors in duct systems shall be made of an approved flame-retardant fabric or shall consist of sleeve joints with packing of approved material, each having a maximum flame spread index/ rating of 25 and a maximum smoke developed index/rating of 50. The fabric shall have a maximum length of 10 in. (254 mm) in the direction of airflow.

2-3.3 Supplementary Materials for Air Distribution Systems.

2-3.3.1 Supplementary materials such as duct coverings, duct linings, vapor retarder facings, adhesives, fasteners, tapes, and core materials added to air ducts, plenums, panels, and duct silencers used in duct systems shall have, in the form in which they are used, a maximum flame spread

index/rating of 25 without evidence of continued progressive combustion and a maximum smoke developed index/rating of 50. Where air duct coverings and linings are to be applied with adhesives, they shall have a maximum flame spread index of 25 and a maximum smoke developed index of 50 when in the final dry state, *(See 2-2.4.2.)*

Closure systems for use with rigid air ducts tested in accordance with UL 181/96, *Standard for Safety Factory-Made Air Ducts and Air Connectors,* shall have been tested and listed in accordance with UL 181A/94, *Standard for Safety Closure Systems for Use with Rigid Air Ducts and Air Connectors,* and used in accordance with the conditions of their listings.

Exception No. 1: This requirement shall not apply to air duct weatherproof coverings where they are located entirely outside of a building, do not penetrate a wall or roof, and do not create an exposure hazard.

Exception No. 2: Smoke detectors required by 4-4.2.

2-3.3.2 Air duct, panel, and plenum coverings and linings shall not flame, glow, smolder, or smoke when tested in accordance with similar test for pipe coverings, ASTM C411/97, *Standard Test Method for Hot-Surface Performance of High-Temperature Thermal Insulation,* at the temperature to which they are exposed in service. In no case shall the test temperature be below 250 F (121 C).

2-3.3.3 Air duct coverings shall not extend through walls or floors that are required to be firestopped or required to have a fire resistance rating.

Exception:Where such coverings meet the requirements of 3-4.6.4.

2-3.3.4 Air duct linings shall be interrupted at fire dampers to prevent interference with the operation of devices.

2-3.3.5 Air duct coverings shall not be installed so as to conceal or prevent the use of any service opening.

2-3.3.6 Pipe insulation and coverings shall meet the requirements of 2-3.3.1 and 2-3.3.2 where installed in ducts, plenums, or concealed spaces used as part of the air distribution system.

2-3.4 Air Duct Access and Inspection.

2-3.4.1 A service opening shall be provided in air ducts adjacent to each fire damper, smoke damper, and smoke detector. The opening shall be large enough to permit maintenance and resetting of the device.

Access doors for fire dampers shall be located so that the spring catch and fusible links are accessible for purposes of inspection, resetting or repair. Where the size of the duct permits, the minimum size access door shall be 18 in. x 16 in. (457 mm x 406 mm). For dampers that are too large for an ordinary person's arms to reach from outside the duct to reset the damper and replace the fusible link, the minimum size for the access door shall be increased to 24 in. x 16 in. (610 mm x 406 mm) to allow the entrance of an individual.

Access doors shall be located as close as practicable to fire dampers and smoke dampers. If feasible, the underside of the duct shall be used rather than a side door.

Whenever spring-loaded dampers require the use of two arms (two persons, if necessary) for re-setting, the access doors (one on each side of the partition, if necessary) shall be of sufficient size to allow two arms to enter the duct. Also refer to Section 27-343 of the Building Code.

2-3.4.2 Service openings shall be identified with letters having a minimum height of one-half in. (12.7 mm) to indicate the location of the fire protection device(s) within.

2-3.4.3 Horizontal air ducts and plenums shall be provided with service openings *(see 2-3.4.1)* to facilitate the removal of accumulations of dust and combustible materials. Service openings shall be located at approximately 20 ft. (6.095 m) intervals along the air duct and at the base of each vertical riser.

Exception No. 1: Removable air outlet or air inlet devices of adequate size shall be permitted in lieu of service openings.

Exception No. 2: Service openings shall not be required in supply ducts where the supply air has previously passed through an air filter, an air cleaner, or a water spray.

Exception No. 3: Service openings shall not be required where all the following conditions exist:

(a) The occupancy has no process producing combustible material such as dust, lint, or greasy vapors. Such occupancies include banks, office buildings, churches, hotels, and health care facilities (but not kitchens, laundries, and manufacturing portions of such facilities).

(b) The air inlets are at least 7 ft. (2.135 m) above the floor or are protected by corrosion-resistant metal screens of at least 14 mesh (0.07 in.) (1.8 mm) that are installed at the inlets so that they cannot draw papers, refuse, or other combustible solids into the return air duct.

(c) The minimum design velocity in the return duct for the particular occupancy is 1000 ft./min. (5.080 m/s).

2-3.4.4 Inspection windows shall be permitted in air ducts provided they are glazed with wired glass. However, service openings shall be provided as required in 2-3.4.1.

2-3.4.5 Openings in walls or ceilings shall be provided so that service openings in air ducts are accessible for maintenance and inspection needs.

2-3.4.6 Where a service opening is necessary in an air duct located above the ceiling of a floor/roof-ceiling assembly that has been tested and assigned a fire resistance rating in accordance with *RS 5-2,* access shall be provided in the ceiling and shall be designed and installed so that it does not reduce the fire resistance rating of the assembly.

2-3.5 Air Duct Integrity.

2-3.5.1 Air ducts shall be located where they are not subject to damage or rupture, or they shall be protected to maintain their integrity.

2-3.5.2 Where an air duct is located outdoors, the air duct, together with its covering or lining, shall be protected from harmful elements.

2-3.5.3 Air Duct at Heat Sources. - Where electrical, fossil fuel, or solar energy collection heat sources are installed in air ducts, the installation shall avoid the creation of a fire hazard. Air ducts rated as Class 1 in accordance with UL 181/96, *Standard for Safety Factory-Made Air Ducts and Air Connectors,* air duct coverings, and linings shall be interrupted at the immediate area of operation of such heat sources in order to meet the clearances specified as a condition of the equipment listing.

Exception No. 1: Appliances listed for zero clearance from combustibles where installed in accordance with the conditions of their listings.

Exception No. 2: Insulation specifically suitable for the maximum temperature that reasonably can be anticipated on the duct surface shall be permitted to be installed at the immediate area of operation of such appliances.

2-3.6 Air Outlets.

2-3.6.1 General. - Air supplied to any space shall not contain flammable vapors, flyings, or dust in quantities and concentrations that would introduce a hazardous condition.

2-3.6.2 Construction of Air Outlets. - Air outlets shall be constructed of noncombustible material or a material that has a maximum smoke developed index/rating of 50 and a maximum flame spread index/rating of 25.

2-3.6.3 Location of Air Outlets.

(a) Air outlets shall be located at least 3 in. (76 mm) above the floor.

Exception: Where provisions have been made to prevent dirt and dust accumulations from entering the system.

(b) Where located less than 7 ft. (2.135 m) above the floor, outlet openings shall be protected by a grille or screen having openings through which a one-half in. (12.7 mm) sphere cannot pass.

(c) Grilles may be located in floors provided they are installed so that they may be removed for cleaning purposes and provided they are constructed as follows:

(1) Grilles up to 3 square feet (0.2787 m^2) in gross area shall be designed to support a concentrated live load of 250 lb. (1112N) on any 4 square inches (2580 mm^2) of surface.

(2) Grilles over 3 square feet (0.2787 m^2) in gross area shall be designed to support the same loads as the floor in the area where used.

(3) If located where they may be walked upon, the opening in grilles shall reject a one-half inch (12.7 mm) sphere.

2-3.7 Air Inlets (Return or Exhaust or Return and Exhaust).

2-3.7.1 General. - Air shall not be recirculated from any space in which flammable vapors, flyings, or dust is present in quantities and concentrations that would introduce a hazardous condition into the return air system.

2-3.7.2 Construction of Air Inlets. - Air inlets shall be constructed of noncombustible material or a material that has a maximum flame spread index/rating of 25 and a maximum smoke developed index/rating of 50.

2-3.7.3 Location of Air Inlets.

(a) Air inlets shall be located at least 3 in. (76 mm) above the floor.

Exception: Where provisions have been made to prevent dirt and dust accumulations from entering the system.

(b) Where located less than 7 ft (2.135 m) above the floor, inlet openings shall be protected by a grill or screens having openings through which a one-half in. (12.7 mm) sphere cannot pass.

(c) Grilles may be located in floors provided they are installed so that they may be removed for cleaning purposes and provided they are constructed as follows:

(1) Grilles up to 3 square feet (0.2787 m^2) in gross area shall be designed to support a concentrated live load of 250 lb. (1112 N) on any 4 square inches (2580 mm^2) of surface.

(2) Grilles over 3 square feet (0.2787 m^2) in gross area shall be designed to support the same loads as the floor in the area where used.

(3) If located where they may be walked upon, the opening in grilles shall reject a one-half inch (12.7 mm) sphere.

2-3.8 Fire Dampers. - Approved fire dampers shall be provided as required in Chapter 3 and installed in conformance with the conditions of their listings.

2-3.9 Smoke Dampers.

2-3.9.1 Approved smoke dampers shall be provided as required in Chapter 3 and installed in conformance with the conditions of their listings.

2-3.9.2 Smoke dampers shall be installed in systems with a capacity greater than 15,000 cfm (7079 L/s) to isolate the air-handling equipment, including filters, from the remainder of the system in order to restrict the circulation of smoke.

Exception No. 1: Where the air-handling unit is located on the floor that it serves and serves only that floor.

Exception No. 2: Where the air-handling unit is located on the roof and serves only the floor immediately below the roof.

Exception No. 3: Existing buildings using only Class 1 filters shall be exempt from this subdivision provided the control system is arranged to shut down the fresh air intake, return air, and exhaust air dampers, and fan shutdown and smoke detection are provided in accordance with Section 4-4.

2-3.10 Plenums.

2-3.10.1 Ceiling Cavity Plenum. - The space between the top of the finished ceiling and the underside of the floor or roof above shall be permitted to be used to supply air to, or return or exhaust air from, or return and exhaust air from the occupied area provided that the following conditions are met:

(a) All materials exposed to the airflow shall be noncombustible or limited combustible and have a maximum smoke developed index/rating of 50.

Exception No. 1: The following materials shall be permitted in the ceiling cavity plenum where listed as having a maximum peak optical density of 0.5 or less, an average optical density of 0.15 or less, and a maximum flame spread distance of 5 ft. (1.525 m) or less when tested in accordance with the specified test method:

(a) Electrical wires and cables - Electrical wires and cables shall be installed in accordance with the NYC Electrical Code.

(b) Pneumatic tubing for control systems - UL 1820/94, Standard for Safety Fire Test of Pneumatic Tubing for Flame and Smoke Characteristics Only.

(c) Optical-fiber cables - Optical-fiber cables shall be installed in accordance with the NYC Electrical Code.

(d) Optical-fiber cable raceway Optical-fiber cable raceway shall be installed in accordance with the NYC Electrical Code.

(e) Fire alarm cables - Fire alarm cables shall be red, type FPLP, and be installed in accordance with Reference Standards RS 17-3, RS 17-3A, RS 17-3B, and RS 17-3C, and be tested and listed in accordance with the requirements of UL 1424/90, UL 910/95 and the City of New York, and shall be marked with the company name, type FPLP, size (AWG), minimum temperature rating 150 C (UL), Also Classified NYC CERT Fire Alarm Cable.

Exception No. 2: Smoke detectors.

Exception No. 3: Loudspeakers, loudspeaker assemblies, and their accessories shall be permitted in the ceiling cavity plenum where listed as having a maximum peak optical density of 0.5 or less, an average optical density of 0.15 or less, and a peak heat release rate of 100 kW or less when tested in accordance with UL 2043/92, Standard for Safety Fire Test for Heat and Visible Smoke Release for Discrete Products and Their Accessories Installed in Air-Handling Spaces.

(b) The integrity of the firestopping for penetrations shall be maintained.

(c) Light diffusers, other than those made of metal or glass, used in air-handling light fixtures shall be listed and marked "Fixture Light Diffusers for Air-Handling Fixtures."

(d) The temperature of air delivered to these plenums shall not exceed 250 F (121 C).

(e) Materials used in the construction of a ceiling plenum shall be suitable for continuous exposure to the temperature and humidity conditions of the environmental air in the plenum.

(f) Where the plenum is a part of a floor-ceiling or roof- ceiling assembly that has been tested or investigated and assigned a fire resistance rating of 1 hour or more, the assembly shall meet the requirements of 3-3.3.

(g) All portions of the ceiling cavity plenum shall be designed to withstand the maximum air pressure differential that may be developed.

2-3.10.2 Duct Distribution Plenum. - A duct enclosure used for the multiple distribution or gathering of ducts or connectors shall be constructed of materials and methods specified in 2-3.1.

2-3.10.3 Apparatus Casing Plenum. - A fabricated plenum and apparatus casing shall be permitted to be used for supply, return, or exhaust air service and shall be constructed of materials and methods specified in 2-3.1, and in accordance with the following:

(a) The casing and plenum construction standards, as per RS 14-22.

(b) Paragraph 2-3.3 for all air duct coverings, duct lining acoustical liner/cells, and miscellaneous materials.

2-3.10.4 Air-Handling Unit Room Plenum.

(a) Individual rooms containing an air-handling unit(s) gather return air from various sources and combine the return air within the room for returning to the air-handling unit. Duct covering, duct lining, acoustical liner/cells, and miscellaneous materials shall comply with 2-3.3.

(b) Air-handling unit room plenums shall not be used for storage or occupied other than during equipment servicing.

2-3.10.5 Raised Floor Plenum. - The space between the top of the finished floor and the underside of a raised floor shall be permitted to be used to supply air to, or return exhaust air from, or return and exhaust air from the occupied area, provided that the following conditions are met:

(a) All materials exposed to the airflow shall be noncombustible or limited combustible and shall have a maximum smoke developed index/rating of 50.

Exception No. 1: The following materials shall be permitted in the raised floor plenum where listed as having a maximum peak optical density of 0.5 or less, an average optical density of 0.15 or less, and a maximum flame spread distance of 5 ft. (1.525 m) or less when tested in accordance with the specified test method:

(a) Electrical wires and cables - Electrical wires and cables shall be installed in accordance with the NYC Electrical Code.

(b) Pneumatic tubing for control systems - UL 1820/94, Standard for Safety Fire Test of Pneumatic Tubing for Flame and Smoke Characteristics Only.

(c) Optical-fiber cables - Optical-fiber cables shall be installed in accordance with the NYC Electrical Code.

(d)Optical-fiber cable raceway - Optical-fiber cable raceway shall be installed in accordance with the NYC Electrical Code.

(e) Fire alarm cables - Fire alarm cables shall be red, type FPLP, and be installed in accordance with Reference Standards RS 17-3, RS 17-3A, RS 17-3B, and RS 17-3C, and tested and listed in accordance with the requirements of UL 1424/90, UL 910/95 and the City of New York, and shall be marked with the company name, type FPLP, size (AWG), minimum temperature rating 150 C (UL), Also Classified NYC CERT Fire Alarm Cable.

Exception No. 2: Raised floors, intermachine cables, electrical wires, listed plenum optical-fiber cable raceways, and optical-fiber cables in computer/data processing rooms where these rooms are designed and installed in accordance with NFPA 75/95, Standard for the Protection of Electronic Computer/Data Processing Equipment.

Exception No. 3: Smoke detectors.

(b) The integrity of the firestopping for penetrations shall be maintained.

(c) The temperature of air delivered to these plenums shall not exceed 250 F (121 C).

(d) Materials used in the construction of a raised floor plenum shall be suitable for continuous exposure to the temperature and humidity conditions of the environmental air in the plenum.

2-3.11 Corridor Air Systems.

2-3.11.1 Egress Corridors. - Except in fully sprinklered office buildings, public corridors shall not be used as a portion of direct supply, return, or exhaust air system serving adjoining areas. Air transfer because of pressure differential in health care occupancies from corridors is permitted. An air transfer opening(s) shall not be permitted in walls or in doors separating egress corridors from adjoining areas.

Exception No. 1: Toilet rooms, bathrooms, shower rooms, sink closets, and similar auxiliary spaces opening directly onto the egress corridor.

Exception No. 2: Where door clearances do not exceed those specified for fire doors in RS 5-8, air transfer caused by pressure differentials shall be permitted.

Exception No. 3: Use of egress corridors as part of an engineered smoke-control system.

Exception No. 4: In detention and correctional occupancies with corridor separations of open construction (e.g., grating doors or grating partitions).

Exception No. 5: In existing buildings classified in Occupancy Group J-1 ventilation may be provided in accordance with Section 27-777.2(a) of the Administrative Code.

Exception No. 6: In institutions as classified in article 10 of subchapter 3 of the Administrative Code provided the system(s) serving the corridor have smoke detectors located as required in Section 4-4.1 of this Reference Standard that will shut down fans upon activation.

2-3.11.2 Exits. - Exit passageways, stairs, ramps, and other exits shall not be used as a part of a supply, return, or exhaust air system serving other areas of the building.

2-3.12 Smoke Control. - Where a smoke-control or exhaust system is required, it shall conform to the requirements of the building code.

CHAPTER 3 - INTEGRATION OF A VENTILATION AND AIR CONDITIONING SYSTEM(S) WITH BUILDING CONSTRUCTION

3-1 Air-Handling Equipment Rooms.

3-1.1 General. - Air-handling equipment rooms generally fall into three categories:

(a) Those used as air plenums (usually return air);

(b) Those with air ducts that open directly into a shaft; and

(c) Other air-handling unit rooms.

3-1.2 Air-Handling Equipment Rooms Used as Plenum Space. - Air-handling unit rooms used as plenums for supply or return air shall comply with 2-3.10.4.

3-1.3 Air-Handling Equipment Rooms that Have Air Ducts that Open Directly into a Shaft. Air-handling equipment rooms, including the protection of openings, shall be separated from shafts by construction having a fire resistance rating not less than that required for the shaft by 3-3.4.

Exception: Fire-resistant separation shall not be required for air-handling equipment rooms that are enclosed by construction having a fire resistance rating not less than that required for the shaft.

3-1.4 Other Spaces Housing Air-Handling Units. - Other spaces housing air-handling units shall meet the requirements of the building code. [of the authority having jurisdiction]

3-2 Building Construction.

3-2.1 Air Duct Clearance. - The clearance from metal air ducts to assemblies constructed of combustible materials, including plaster on wood lath, shall be not less than one-half in. (12.7 mm), or the combustible material shall be protected with minimum one-quarter in. (6.4 mm) firestopping material as per the Building Code. The integrity of the firestopping and smokestopping shall be maintained.

Exception: This clearance shall not apply to systems used solely for ventilation, air cooling, or air conditioning without heating.

3-2.2 Structural Members. - The installation of air ducts, including the hangers, shall not reduce the fire resistance rating of structural members.

3-2.3 Where the installation of the hangers for the components of an air duct system penetrates an existing ceiling of a fire-resistive floor/roof-ceiling assembly and necessitates removal of a portion of that ceiling, the replacement material shall be identical to or approved as equivalent to that which was removed.

Exception: As an alternative to repairing the existing ceiling, a new ceiling shall be permitted to be installed below the air duct system, provided the fire resistance rating of the floor/roof-ceiling design is not reduced.

3-3 Penetrations - Protection of Openings. - For examples of the application of the penetration protection requirements, see Figure 3-3.

3-3.1 Fire-Rated Walls and Partitions.

3-3.1.1[*]Approved fire dampers shall be provided where air ducts penetrate or terminate at openings in walls or partitions required to have a fire resistance rating pursuant to Section 27-343 of the Administrative Code. In addition, approved fire dampers shall be provided in outdoor intake openings in accordance with Section 2-2.1.3. *(See Figure 3-3).*

Exception: Fire dampers shall not be required where other openings through the wall are not required to be protected.

3-3.1.2 Approved fire dampers shall be provided in all air transfer openings in partitions required to have a fire resistance rating and in which other openings are required to be protected.

3-3.2 Floors Required to Have a Fire Resistance Rating. - Where air ducts extend through only one floor and serve only two adjacent stories, the air ducts shall be enclosed *(see 3-3.4.1)* or fire dampers shall be installed at each point where the floor is penetrated

Exception: Air ducts serving air conditioning terminal devices on the floor above, provided a fire test conducted in accordance with RS 5-2, determines that the fire resistance rating of the floor is maintained.

3-3.3 Floor/Roof -Ceiling Assemblies Having a Fire Resistance Rating. - Where air ducts and openings for air ducts are used in a floor/roof-ceiling assembly required to have a fire resistance rating, all the materials and the construction of the assembly, including the air duct materials and the size and protection of the openings, shall conform with the design of the fire-resistive assembly, as tested in accordance with *RS 5-2. (Where dampers are required, see 3-4.4.)*

3-3.4 Shafts.

3-3.4.1 Enclosure of Ducts. - (a) Air ducts that pass through the floors of buildings requiring the protection of vertical openings shall be enclosed with partitions or walls constructed of materials as permitted by the Building Code, section 27-344.

Exception: Where an air duct penetrates only one floor and the air duct contains a fire damper located where the duct penetrates the floor, an air duct enclosure shall not be required.

(b) Ducts passing through two or more floors, or through a floor and a roof, and having a cross-sectional area of more than 2 square feet (0.1858 m^2) shall be encased in shafts of noncombustible construction having a minimum 2-hour fire resistance rating. Where the cross-sectional area is 2 square feet (0.1858 m^2) or less, such ducts may be fire protected with construction having a minimum fire resistance rating of 1 hour placed as close as possible to the duct in lieu of a shaft, with the space between the duct and the floor construction filled solidly with inert noncombustible material for the full depth of the floor construction. Exceptions and qualifications are as follows:

(1) The encasing of ducts shall not be required for ducts which are cut off from the main portion of the duct by approved fire dampers.

(2) Ducts which are located in one story and have all duct openings extending through a floor to the story next above or below may in lieu of such fire resistive enclosure be provided with approved fire dampers at each such point where the floor is pierced.

(3) Two or more ducts serving separate floors shall not be encased in the same fire resistive enclosure unless approved fire dampers are installed where each branch is taken from such encased ducts.

(4) A branch duct having a cross-sectional area of less than 20 square inches (12900 mm^2) which passes through one floor only and pierces the floor at one point only to supply air conditioning units in one story only is not required to be encased. Where a branch serves connectors which pierce the floor at more than one point, the portion of the duct below the floor shall be encased with not less than one-half inch (12.7 mm) of noncombustible insulating material such as metal lath and plaster or shall be enclosed with noncombustible material such as by locating above a noncombustible ceiling.

3-3.4.2 A fire-resistive enclosure used as an air duct shall conform with 3-3.4.1 and 2-3.1. Gypsum board systems shall be constructed in accordance with RS 5-1A or RS 5-1B, and the corners of such systems shall be constructed in accordance with details approved by the Board of Standards and Appeals under Calendar Number 354-76-SM or equivalent.

3-3.4.3 Shafts that constitute air ducts or that enclose air ducts used for the movement of environmental air shall not enclose:

(a) Exhaust ducts used for the removal of smoke and grease-laden vapors from cooking equipment;

(b) Ducts used for the removal of flammable vapors;

(c) Ducts used for moving, conveying, or transporting stock, vapor or dust;

(d) Ducts used for the removal of nonflammable corrosive fumes and vapors;

(e) Refuse and linen chutes; or

(f) Piping.

Exception: Noncombustible piping conveying water or other nonhazardous or nontoxic materials.

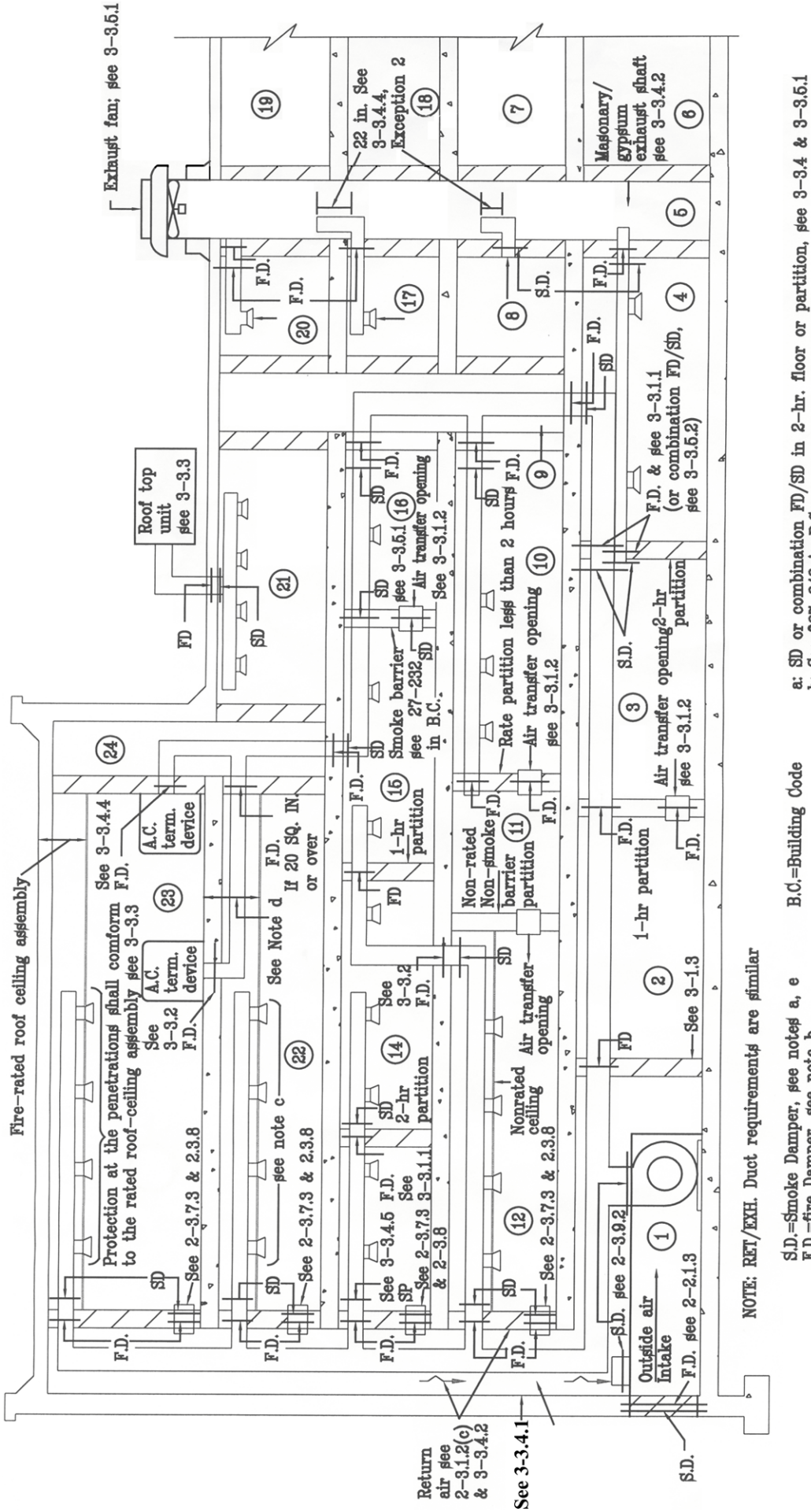

Figure 3-3 Application of Penetration requirements

3-3.4.4 Fire dampers shall be installed at each direct or ducted opening into or out of enclosures required by 3-3.4.1.
Exception No. 1: Where an air duct system serving only one story is used only for exhaust of air to the outside and is contained within its own dedicated shaft.
Exception No. 2: Where branch ducts connect to enclosed exhaust risers meeting the requirements of 3-3.4.1 or 3-3.4.2 in which the airflow moves upward and steel subducts at least 22 in. (559 mm) in length are carried up inside the riser for each inlet and the riser is appropriately sized to accommodate the flow restriction created by the subduct. (See Figure 3-3)
Exception No. 3: Where such openings are provided for ducts serving air terminal units and the ducts or duct connectors meet all of the following conditions (See Figure 3-3):
(a)They have a cross-sectional area of less than 20 sq. in. (12900 mm^2);
(b)They meet the requirements specified in 2-3.1;
(c)They serve air terminal units which directly abut the shaft enclosure or have continuous architectural enclosures constructed the same as the air terminal unit; and
(d)They meet the requirements of 3-4.6.4.

3-3.5 Location of Smoke Dampers.

3-3.5.1 Smoke dampers shall be installed at or adjacent to the point where air ducts pass through required smoke barriers, partitions adjacent to spaces leading from elevators to a street or to the exterior of a building, and any construction required to have a rating of 2 hrs. or more, but in no case shall a smoke damper be installed more than 2 ft. (610 mm) from the barrier or after the first air duct inlet or outlet, whichever is closer to the smoke barrier.
Exception No. 1: Smoke dampers shall not be required on air systems other than where necessary for the proper function of that system where the system is designed specifically to:
(a)Function as an engineered smoke-control system, including the provision of continuous air movement with the air-handling system; or
(b)Provide air to other areas of the building during a fire emergency; or
(c)Provide pressure differentials during a fire emergency.
Exception No. 2: Smoke dampers shall not be required to be located within a prescribed distance of a fire rated enclosure where isolation smoke dampers are used in air-handling equipment. (See 2-3.9.2)
Exception No. 3: Buildings classified in Occupancy Group J-2.
Exception No. 4: Smoke dampers shall not be required in ducts where the air continues to move and the air-handling system installed is arranged to prevent recirculation of exhaust or return air under fire emergency conditions.
3-3.5.2 Where penetration of a smoke barrier is required to be provided with a fire damper, a combination fire and smoke damper equipped and arranged to be both smoke responsive and heat responsive shall be permitted.
3-3.5.3 The above requirements are applicable to new buildings and existing buildings where new fire rated partitions are erected or where existing ducts are being modified or reconfigured in such a way as to require the installation of smoke and/or fire dampers.

3-4 Fire Dampers, Smoke Dampers, and Ceiling Dampers.

3-4.1 Fire dampers used for the protection of openings in walls, partitions, or floors with fire resistance ratings of less than 3 hours shall have a one and one-half-hour fire protection rating in accordance with UL 555/99, *Standard for Safety Fire Dampers*.
3-4.2 Fire dampers used for the protection of openings in walls, partitions, or floors having a fire resistance rating of 3 hours or more shall have a 3-hour fire protection rating in accordance with UL 555/99, *Standard for Safety Fire Dampers*.
3-4.3 Smoke dampers used for the protection of openings in smoke barriers or in engineered smoke-control systems shall be classified in accordance with UL 555S/99, *Standard for Safety Leakage Rated Dampers for Use in Smoke Control Systems.*
3-4.4 Ceiling dampers or other methods of protecting openings in rated floor/roof-ceiling assemblies shall comply with the construction details of the tested floor/roof-ceiling assembly or with listed ceiling air diffusers, or with listed ceiling dampers. Ceiling dampers shall be tested in accordance with UL 555C/96, *Standard for Safety Ceiling Dampers*.

3-4.5 Damper Closure.

3-4.5.1 All fire dampers and ceiling dampers shall close automatically, and they shall remain closed upon the operation of a listed fusible link or other approved heat-actuated device located where readily affected by an abnormal rise of temperature in the air duct.
3-4.5.2 Fusible links shall have a temperature rating approximately 50 F (28 C) above the maximum temperature that normally is encountered when the system is in operation or shut down, but not less than 160 F (71 C).
Exception: Where combination fire/smoke dampers are located within air ducts that are part of an engineered smoke-control system, fusible links or other approved heat-responsive devices shall have a temperature rating approximately 50EF (28 C) above the maximum smoke-control system designed operating temperature, but shall not exceed the UL 555S/99, Standard for Safety Leakage Rated Dampers for Use in Smoke Control Systems degradation test temperature rating of the combination fire/smoke damper or a maximum of 350 F (177 C).
3-4.5.3 A provision for remote opening of combination fire and smoke dampers, where necessary for smoke removal, shall be permitted. Such dampers shall have provisions that allow them to reclose automatically upon reaching the damper's maximum degradation test temperature in accordance with UL 555S/99, *Standard for Safety Leakage Rated Dampers for Use in Smoke Control Systems*.
3-4.5.4 Dampers shall close against the maximum calculated airflow of that portion of the air duct system in which they are installed. Fire dampers shall be tested in accordance with UL 555/99, *Standard for Safety Fire*

Dampers. Smoke dampers shall be tested in accordance with UL 555S/99, *Standard for Safety Leakage Rated Dampers for Use in Smoke Control Systems*.

Exception: Where provisions for fan or airflow shutdown are provided.

3-4.6 Installation. (See 2-3.4 for access)

3-4.6.1 The locations and mounting arrangement of all fire dampers, smoke dampers, ceiling dampers, and fire protection means of a similar nature required by this standard shall be shown on the mechanical plans pursuant to section 27-157(c) or 27-162 of the Building Code.

3-4.6.2 Fire dampers (including their sleeves), smoke dampers, and ceiling dampers shall be installed in accordance with the conditions of their listings and the manufacturer's installation instructions.

3-4.6.3 The thickness of sleeves for fire dampers shall not be less than that associated with the conditions of rating required by Section 3-4.

Exception: Where UL 555/99, Standard for Safety Fire Dampers, permits sleeve thickness to be the same as that of the duct gage, such thickness shall not be less than that specified in Table 3-4.6.3.

Table 3-4.6.3 Minimum Sleeve Thickness Permitted in Accordance with UL 555/99
(See 3-4.6.3 Exception.)

Air Duct Diameter Or Moximum Width		Minimum Sleeve Thickness	
(in.)	(mm.)	(in.)	(mm.)
12 or lees	305	0.018	26
13-30	330-762	0.024	24
31-54	181-1370	0.030	22
55-84	1395-2135	0.036	20
85 or more	2160	0.047	18

3-4.6.4 Patching, Filling, and Repairing. Where air ducts pass through walls, floors or partitions required to have a fire resistance rating and where fire dampers are not required, the opening in the construction around the air duct shall not exceed a 1-in. (25.4 mm) average clearance on all sides and shall be firestopped in accordance with the Building Code.

Exception: Where fire dampers are installed, proper clearance for expansion shall be maintained. (See 3-4.6.)

CHAPTER 4 - CONTROLS

4-1 Wiring. The installation of electrical wiring and equipment associated with the operation and control of air conditioning and ventilating systems shall be in accordance with the Electrical Code of the City of New York.

4-2 Manual Control. Each air distribution system shall be provided with not less than one manually operable means to stop the operation of the supply, return, and exhaust fans(s) in an emergency. The means of manual operation shall be located at an approved location.

4-2.1 Any building classified in Occupancy Group E, 75 feet (22.840 m) or more in height, and any existing office building 100 feet (30.450 m) or more in height where a system serves floors other than the floor on which the equipment is located, in addition to the controls required by this chapter, shall be provided with:

(a) Manual controls for operating individually each air supply and each exhaust or return fan in the system located as follows:

(1) At the Fire Command Station, (or in a mechanical control center in existing buildings only), and

(2) In the room containing the affected air handling fans.

(b) Manual controls for operating individually or in groups each remote control reversible fire shutter, when such shutters are provided in accordance with the provisions of Section 27-972 of the Administrative Code, or each smoke damper provided in accordance with the provisions of Section 27-777.1(b) of the Administrative Code, shall be located at the Fire Command Station, (or in a mechanical control center in existing buildings only).

4-2.2 Manual Restart of Fans After Reset of an Automatic Fire Detecting Device or Fire Alarm System. Fans or fan systems which have been automatically shut down on activation of an automatic fire detecting device or fire alarm system shall be arranged and equipped not to automatically restart when either the automatic fire detecting device or fire alarm system is reset. The manual means of restarting the fans or fan system shall function independently from the manual resetting of either the automatic fire detecting device or fire alarm system.

4-3 Smoke Dampers.

4-3.1 Smoke dampers shall be activated by an automatic smoke and/or alarm initiating device. Smoke dampers that are part of an engineered smoke control system shall be capable of being positioned manually from a command station. Such positioning devices shall be provided, for supply and return/exhaust dampers, grouped by floor and by type (i.e. supply or return/ exhaust). Damper switch positions shall indicate whether the related dampers are commanded to be either open or closed.

Smoke damper positioning switches shall be located at the Fire Command Station, or in a mechanical control center in buildings without a Fire Command Station.

Refer to Section 27-777.1(b) of the Building Code for additional requirements.

4-3.2 Smoke dampers installed to isolate the air-handling system in accordance with 2-3.9.2 shall be arranged to close automatically when the system is not in operation.

4-3.3 Smoke dampers installed in smoke barriers shall be permitted to remain open during fan shutdown, provided their associated controlling damper actuators and smoke detectors remain operational.

4-4 Smoke Detection for Automatic Control.

4-4.1 Location. Smoke detectors listed for use in air distribution systems shall be located:

(a) Downstream of the air filters and ahead of any branch connections in air supply systems having a capacity greater than 2000 cfm (944 L/s).

(b) At each story in buildings classified in Occupancy Group E, 75 ft. (22.838 m) or more in height, and in existing office buildings 100 ft. (30.450 m) or more in

height prior to the connection to a return air shaft in air return systems having a capacity greater than 15,000 cfm (7080 L/s) and serving more than one story except that in an existing office building 100 feet (30.450 m) or more in height where compliance would cause practical difficulty or undue hardship, the Commissioner may approve other locations for such devices fulfilling the intent of the requirement.

(c) In the return air stream, prior to exhausting from the building and prior to any recirculation or fresh air inlet connection in air return systems having a capacity equal to or greater than 15,000 cfm (7080 L/s) arranged to either automatically exhaust the smoke laden return air or to stop the fan.

Exception No. 1: Return system smoke detectors shall not be required where the entire space served by the air distribution system is protected by a system of area smoke detectors.

Exception No. 2: Fan units whose sole function is to remove air from the inside of the building to the outside of the building.

Exception No. 3: Systems meeting the criteria for Exceptions Nos. 1 or 2 in Section 2-3.9.2.

Exception No. 4: Smoke detectors provided in accordance with (b) above shall fulfill the requirement of (c) above.

4-4.2 Function. Smoke detectors provided as required by 4-4.1 shall automatically stop their respective fan(s) upon detecting the presence of smoke.

Exception: Where the return air fan is functioning as part of an engineered smoke-control system and a different mode is required.

4-4.3 Installation.

4-4.3.1 In addition to the requirements of 4-4.2, where an approved protective signaling system is installed in a building, the smoke detectors required by the provisions of Sections 4-3 and 4-4 shall be connected to the protective signaling system in accordance with the requirements of the Building Code, so that the activation of any air distribution system smoke detector causes a supervisory signal to be indicated at a constantly attended location or causes an alarm signal.

4-4.3.2 Where smoke detectors required by Section 4-4 are installed in a building not equipped with an approved protective signaling system as specified by 4-4.3.1:

(a) The smoke detector activation required by Section 4-4 shall cause a visual and an audible signal in a normally occupied area; and

(b) Smoke detector trouble conditions shall be indicated visually or audibly in a normally occupied area and shall be identified as air duct detector trouble.

4-4.3.3 Smoke detectors powered separately from the signaling system for the sole function of stopping fans shall not require standby power.

4-4.3.4 When any building or floor is provided with an air system utilizing recirculated air and is protected by an automatic sprinkler system or an automatic fire alarm system, provision shall be made to automatically stop the fans serving the affected area when the sprinkler system or fire alarm system operates. Where both sprinkler systems and fire alarm systems are installed in the area, it shall be required to have only one of these systems arranged to stop the fans.

Exception No. 1: Activation of a manual pull station shall not be required to automatically stop the fans.

Exception No. 2: Systems having a capacity of 2,000 cfm or less or serving not more than one floor.

******DOB 5-4-02; 17-87 BCR; Local Law 16-1984***

*REFERENCE STANDARD RS 13-2

Exhaust Systems for Cooking Spaces

1. Construction-Exhaust systems for cooking spaces shall be separate systems that may exhaust a number or such spaces. The ductwork shall be constructed as required by Reference Standard RS 13-1, with the following modifications:

(a) Ducts shall be of galvanized steel and the minimum gage shall be as follows:

(1) In all buildings other than those classified as residential occupancy, a minimum of no. 16 galvanized sheet gage shall be used.

(2) In residential occupancies other than one- and two-family dwellings a minimum of no. 18 galvanized sheet gage shall be used.

(3) In one- and two-family dwellings the gages shall be as required in Reference Standard RS 13-4 for supply ductwork.

(b) Where branch ductwork is to be used to exhaust vapors from dishwashers, pot sinks, or other similar equipment of a commercial type from which moisture is emitted, copper or aluminum of the minimum gages and weights required in Reference Standard RS 13-1, or other equivalent moisture and corrosion resistant metals, shall be used. Such ductwork shall be installed so that condensate cannot leak from it.

(c) Sub-ducts, as described in Reference Standard RS 13-1, shall not be permitted in lieu of fire dampers.

****506-77 BCR***

**REFERENCE STANDARD RS 13-3

ANSI/NFiPA 96-1984 Standard for the Installation of Equipment for the Removal of Smoke and Grease-Laden Vapors from Commercial Cooking Equipment, as Modified.

Modifications. - The provisions of ANSI/NFiPA 96-1984 shall be subject to the following modifications. The chapter, section and paragraph numbers are from that standard.

Amend Section 1-3.1 as follows:

1-3.1 Commercial cooking equipment used in processes producing smoke or grease-laden vapors and fumes such as from ranges, deep fat fryers, grills, broilers, candy kettles, cruller furnaces and ovens shall be equipped with an independent exhaust system complying with the following:

(a) A hood complying with the requirements of Chapter 2, and

(b) A duct system complying with the requirements

of Chapter 3, and

(c) Grease removal devices complying with the requirements of Chapter 4, and

(d) Fire extinguishing equipment complying with the requirements of Chapter 7.

Add Section 1-3.1.1:

1-3.1.1 Where restaurant type equipment is installed and is used only for warming, where no frying or grilling is done, and where no grease-laden vapors or fumes can be generated, compliance with reference standard RS 13-6 shall not be required, and the ductwork may be constructed as required in reference standard RS 13-2. Where restaurant type equipment is installed for periodic cooking use, for other than commercial only, in community rooms of multiple dwellings, firehouses and other low hazard occupancies, determined by the commissioner, automatic fire extinguishing systems shall not be required and the ductwork may be constructed as required in reference standard RS 13-1.

Replace Section 1-3.3 with the following:

1-3.3 Permits in accordance with Section C26-109.1 of the Administrative (Building) Code shall be required for the alteration, replacement, or relocation of any exhaust or extinguishing system or part thereof, or cooking equipment.

1-3.3.1 Upon the issuance of such permit, the Contractor shall install the system as described on the applications and plans, examined and approved by the Department of Buildings.

1-3.3.2 Upon completion, the work shall be subject to a performance test conducted by the installer and witnessed by a representative from the Fire Department for the purpose of determining the performance of the installed system in accordance with Section C19-165.3 of the Administrative Code.

1-3.3.3 Any discrepancies between the system as installed and the approved plans which prevents certification, shall be brought to the attention of the Department of Buildings and the Applicant of Record.

Add the following sections:

3-2.9.1.1 If the building is less than 4 stories in height and of construction classification II-C, II-D and II-E, the enclosure wall shall have a fire resistance rating of not less than one-hour.

3-2.9.4 Branch ducts from other equipment in the same kitchen area, for which hoods and filters are not required, or from registers exhausting the kitchen space in general, may be connected to the main hood exhaust duct if the following requirements are complied with:

(a) A fusible link fire damper of the same gage as the hood exhaust duct shall be added at the point of connection of the branch duct to the hood exhaust duct.

(b) If the branch connection is made to the portion of the ductwork that will contain the fire extinguishing medium, then the fire dampers required in above shall be arranged to close automatically upon the operation of the fire extinguishing system.

(c) The branch connection shall be made in either the top or sides of the main duct in a manner to prevent grease from flowing into the branch duct.

(d) The branch ducts shall be constructed of steel, aluminum, or copper of the gages and weights required in reference standard RS 13-1; and they shall be insulated with one inch of magnesia or other material having equivalent insulative and fire resistance qualities.

(e) All registers in these branches shall have fusible link actuated dampers.

(f) When branch ductwork is to be used to exhaust vapors from dishwashers, pot sinks, or from other equipment of a commercial type from which moisture is emitted, copper, aluminum, or other corrosion resistant metals of the minimum gages and weights required in reference standard RS 13-1 shall be used. Such ductwork shall be installed so that condensate cannot leak from it.

3-2.9.5 All hoods in a single room or kitchen and/or all hoods in separate rooms may be connected to the same system, provided all of the hoods are part of the same facilities and are located on the same floor and under the control of one owner or tenant.

3-2.10 Insulation

3-2.10.1 A minimum insulation covering of two-inches of magnesium or calcium silicate block, attached with galvanized steel wire or construction equivalent in insulating and fire resistance qualities, shall be applied to all ducts inside of the building. The insulation shall be applied up to the outer face of the discharge from the building and shall also be applied to the housing of the exhaust fan when it is located inside of the building. Care shall be taken to insure that the insulation extends through the walls and roofs to separate the ducts from the building construction. Masonry or concrete ducts shall not require insulation.

Replace section 3-3.1 with the following:

3-3.1 Materials - Ducts shall be constructed in accordance with Table 15-4 of Section C26-1501.8 for low temperature chimneys.

Amend the following section:

3-5.1 In all buildings more than one (1) story in height and in one-story buildings where the roof or roof-ceiling assembly is required to have a fire resistance rating, the ducts shall be enclosed in a continuous enclosure extending from the ceiling above the hood, through any vertical spaces passing through other floors, or through the roof so as to maintain the integrity of the fire separations required by the applicable building code provisions. Horizontal ducts passing through fire walls or partitions shall be protected by an enclosure or thimble extending at least equal to the width of the duct. Where passing over exit corridors, the protection shall be for the entire length of the duct within the corridor. The enclosure shall conform to the following***:***

Amend the following section:

4-1.2.1.2 Grease filters shall be accepted for use with

commercial cooking equipment.

Add the following section:

4-1.2.1.3 Grease filters shall comply with UL 1046-1979. Standard for Grease Filters for Exhaust Ducts.

5-1.3 Flexible connectors at fans shall be made of non-combustible material that has a mineral base and that cannot be penetrated by grease.

7-1.3 Approved fixed pipe extinguishing equipment, in addition to approved filters or other approved means of grease extraction, shall be provided where any of the following conditions occur:

(a) Where the discharge of the exhaust system is located in a wall below the top floor of a building, such discharges shall be permitted only where the wall containing the discharge is constructed with an outer surface of non-combustible material, having a fire resistance rating of one-hour or more and where this non-combustible material extends 8 ft. horizontally on either side of the opening and projects to a height of 40 ft. above the opening.

(b) Where the length of duct from the most remote hood in the system to the discharge from the building is more than 20 feet.

(c) Where the total exhaust air from all hoods served by the system is more than 3,000 cfm.

7-2.2 The following minimum requirements shall apply for the particular type of extinguishing system:

7-2.2.1 Where steam is used: A continuous source of steam supply of at least 15 psi shall be provided. The pipe sizes of the main branch shall be at least 1 1/2 inch in diameter and to the last stream jet or nozzle shall be at least 3/4 inch in diameter. Such nozzles shall be standard 1/2 inch open sprinkler heads or equivalent in spray pattern and delivery. Nozzles shall be located throughout the entire run of duct up to the flue or riser duct and the confining damper shall be located at this point. The piping within the hood and ductwork shall be a minimum of ANSI Schedule 40 steel with 125 psi standard cast iron screwed fittings. The piping shall be arranged and/or dipped to remove all condensate on both sides of the automatic and manual control valves. A shut-off valve that is sealed open shall be located in the branch line before the control valve.

7-2.2.2 Where a fine water spray is used: All pipe and valve sizes shall conform to provisions for the installation of sprinklers in reference standard RS 17-5. The minimum static pressure at the highest nozzle shall be at least 30 psig. Also, 1/2 inch open wide pattern nozzles shall be installed throughout.

7-2.2.3 Where carbon dioxide is used: At least one 50 lb. cylinder of carbon dioxide shall be provided for each installation up to 400 cu. ft. of hood and duct volume. For every additional 400 cu. ft. or portion thereof, an additional 50 lb. cylinder shall be installed. A confining damper shall be installed in the duct not less than 25 feet down stream from the last uptake or inlet from the hood or equipment into the duct.

7-2.2.4 Where listed pre-engineered dry chemical and liquid agent is used: All pipe and fittings shall conform to the manufacturer's specifications and limitations as approved by a national recognized testing laboratory, and approved by the Board of Standards and Appeals. Confining dampers shall be installed in the duct work, as per section 3-2.9.4, only for branch ducts connected to the main grease exhaust duct and shall be automatically operated either by means of mechanical fusible links or electric thermostats connected and/or wired to the extinguishing system to effect simultaneous operation. Exhaust fans shall not be inter-wired with the extinguishing system. They shall continue operation during and after the extinguishing system's discharge.

Amend the following section:

7-3.1.2 Fixed pipe extinguishing systems in a single hazard fire section (see Section 1-2) shall be arranged for simultaneous automatic operation upon actuation of any one of the systems.

Exception: When the fixed pipe extinguishing system is an automatic sprinkler system.

7.3.2 Except as otherwise provided, the following additional requirements shall apply for all extinguishing systems:

7-3.2.1 Manual controls or manual releases shall be accessibly located whenever practical on a path of egress from the protected area and at least 10 feet but not more than 35 feet from the hood and shall be sealed closed with a light wire seal or easy break-glass control. Manual controls shall be of quick-opening lever type and shall be operated by a chain or insulated handle.

7-3.2.2 Signs shall be affixed to all hand valves, manual control, or manual releases indicating the purpose of these devices and designating their proper operating position for manual operation.

7-3.2.3 The duct system and any deep frying units shall be provided with an adequate number of nozzles to effectively extinguish a fire. As minimum requirements, one nozzle shall be installed at each inlet to the duct and one at each side of any required confining damper. The nozzle on the downstream side of any required confining damper shall have a capacity of at least 10 percent of the total capacity of the system. The distance between other nozzles throughout the duct shall not exceed 10 feet on centers, except as provided in 7-2.2.4, and thermal detecting units shall be located at all duct inlets.

7-3.2.4 The automatic releasing equipment and heat detecting units shall be approved.

7-3.3 Clear, concise and complete operating and cleaning instructions covering all components of the exhaust system shall be permanently posted outside the main entrance or other suitable entrance to the kitchen; and, a schematic drawing or sketch at least 8 1/2 inches by 11 inches in size, showing the origin, run and terminus of the grease duct shall be similarly posted.

Replace Sections 7-4.1 and 7-4.2 with the following:

7-4.1 Complete drawings of the system installation to include the hood(s), exhaust duct(s), and appliances along with the interface of the fire extinguishing system

detectors, piping, nozzles, fuel shut-off devices, agent storage container(s), and manual actuation device(s) shall be submitted in accordance with the requirements of sub-article 116.0 of this Code.
7-4.2 Installation of systems shall be made only by persons properly trained and qualified to install the specific system being provided. The installer shall certify to the Fire Commissioner that the installation is in complete agreement with the terms of the listing and the manufacturer's instruction and approved design, and that the manufacturer has qualified the installer.

Replace Section 8-2.1 with the following:
8-2.1 An inspection, test and servicing of the automatic valve operation and the fire extinguishing system by properly trained and qualified persons, on behalf of the owner, shall be made at least every six months. A record of such tests shall be kept on the premises and shall be available for inspection by the Commissioner and the Fire Commissioner.

Add the following Section: 8-4 Filters
8-4.1 Filters shall be serviced and replaced regularly by qualified employees of the owner or by a cleaning agency. A record indicating the name of the person or firm doing the servicing and the dates when filters were cleaned or replaced shall be available for inspection by the Commissioner. They shall be cleaned or replaced as frequently as necessary, but at least every three months and no exhaust system shall be operated while cooking is being carried on without the filters installed in place.
*****814-85 BCR; 695-84 BCR***

***REFERENCE STANDARD RS 13-4**

ANSI/NFiPA- 90 B 1996, as modified—Standard for the Installation of Warm Air Heating and Air Conditioning Systems.
The provisions of ANSI/NFiPA No. 90 B-96 together with the modifications thereto shall constitute Reference Standards RS 13-4 and RS 14-1.
The appendices to ANSI/NFiPA No. 90 B-96 are not part of this Reference Standard. These are for informational purposes only.
Wherever reference is made to the "National Electrical Code" it shall be changed to read "Electrical Code of the City of New York."
The New York State Energy Conservation Construction Code also regulates the design and construction of heating, ventilating, and air conditioning systems in New York City.

STANDARD FOR THE INSTALLATION OF WARM AIR HEATING AND AIR CONDITIONING SYSTEMS
ANSI/NFiPA No. 90 B-1996, AS MODIFIED
Delete the NOTICE.
Delete asterisks from all section numbers having them.
Material in [brackets] is to be deleted.
Underlined material is new.
** * * denotes unchanged text.*

Section numbers are from ANSI/NFiPA No. 90 B-1996.

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Chapter 1 General

1-1 Scope. This standard shall apply to all systems for the movement of environmental air in structures that[:] are otherwise exempted by Section 27-777(b) of the Administrative Code, or whose heating systems are subject to Section 27-812 of the Administrative Code.
[(a) Serve one- or two-family dwellings; or
(b) Serve spaces not exceeding 25,000 ft^3 (708 m^3) in volume in any occupancy.
Exception: Buildings of combustible construction over three stories in height shall be in accordance with NFPA 90A, Standard for the Installation of Air Conditioning and Ventilating Systems.]
1-1.1 The provisions of this standard are not intended to be applied retroactively. Where the system is being altered, extended, or renovated, the requirements of Article 4 of Subchapter 1 of Chapter 1 of Title 27 of the Administrative Code shall govern the applicability of this standard.

*** * ***

1-3 Definitions.
Accepted - Means "Accepted" by the Materials and Equipment Acceptance Division of the Department of Buildings.
NOTE: The MEA Division is the "authority having jurisdiction" in use of materials, assemblies, forms, methods of construction, and service equipment subject to the acceptance requirements of Building Code Sections 27-131 and 27-135.
Air Filter. [A device used to reduce or remove air-borne solids from heating, ventilating, and air conditioning systems.]
(a) A Class 1 air filter is one which, when clean, does not contribute fuel when attacked by flame, and emits

only negligible amounts of smoke when tested in accordance with RS 13-15.
(b) A Class 2 air filter is one which, when clean, burns moderately when attacked by flame or emits moderate amounts of smoke or both when tested in accordance with RS 13-15.
Approved. [Acceptable to the authority having jurisdiction.] See subchapter 2 of the Building Code for definition.
Authority Having Jurisdiction. [The organization, office, or individual responsible for approving equipment, an installation, or a procedure.] The Commissioner of the Department of Buildings or his designee.

*** * ***

Listed - Equipment, materials or services included in a list published by an organization acceptable to the "authority having jurisdiction" and concerned with evaluation of products or services that maintains periodic inspection of production of listed equipment or materials or periodic evaluation of services, and whose listing states either that the equipment, material or service meets identified standards or has been tested and found suitable for use in a specified purpose.
NOTE: The means for identifying listed equipment may vary for each organization concerned with product evaluation, some of which do not recognize equipment as listed unless it is also labeled. The "authority having jurisdiction" should utilize the system employed by the listing organization to identify a listed product.
Noncombustible Material. [A material that, in the form in which it is used and under the conditions anticipated, cannot ignite, burn, support combustion, or release flammable vapors when subjected to fire or heat. When tested in accordance with ASTM E 136, Standard Test Method for Behavior of Materials in a Vertical Tube Furnace at 750 Degrees C, materials that successfully pass the test shall be considered noncombustible.] See subchapter 2 of the Building Code for definition.

*** * ***

[Should. Indicates a recommendation or that which is advised but not required.]

*** * ***

Chapter 2 System Components

*** * ***

2-1.1.1 Supply ducts shall be:
(a) Class 0 or Class 1 rigid or flexible air ducts tested in accordance with UL 181/96, *Standard for Safety Factory-Made Air Ducts and Air Connectors*; or
(b) Of sheet metal having a nominal thickness as shown in Table 2-1.1.1.
Exception No. 1: Supply ducts that are completely encased in not less than 2 in. (51 mm) of concrete in a floor slab shall not be required to meet the requirements of 2-1.1.1, except within 2 ft (0.61 m) of the furnace supply plenum and within 2 ft (0.61 m) of a vertical connection to a riser or register.
Exception No. 2: Supply ducts for a separate air cooling system, not interconnected to any warm air heating system, serving a single-family dwelling shall not be required to meet the requirements of 2-1.1.1, provided that they are not closer than 2 ft (0.61 m) to any furnace or its supply plenum, boiler, or other heat-producing appliances and that they comply with 2-2.1.1, 2-2.1.3, 2-2.2, 2-2.3, and 2-2.4 as specified for return ducts.
Exception No. 3: Vibration isolation connectors in duct systems shall be made of approved flame-retardant fabric or shall consist of sleeve joints with packing of approved noncombustible material. The fabric shall not exceed 10 in. (254 mm) in length in the direction of airflow.
Exception No. 4: A Class 0 or Class 1 rigid or flexible air duct shall not be used as a vertical air duct that is more than two stories in height.
Exception No. 5: A Class 0 or Class 1 rigid or flexible air duct shall not be used in an air duct containing air at a temperature in excess of 250°F (121°C).

2-1.1.2 Supply ducts shall be installed in conformance with:
(a) The conditions of their listing;
(b) RS 14-22 [SMACNA *Fibrous Glass Duct Construction Standards*;
(c) SMACNA *HVAC Duct Construction Standards — Metal and Flexible*;
(d) SMACNA *Installation Standards for Residential Heating and Air Conditioning Systems*.]

2-1.2 Air Connectors. Air connectors are limited-use, flexible air ducts that shall not be required to conform to the requirements for air ducts, provided they conform to the following provisions:
(a) Air connectors shall conform to the requirements for Class 0 or Class 1 connectors when tested in accordance with UL 181/96, *Standard for Safety Factory-Made Air Ducts and Air Connectors*.
(b) Class 0 or Class 1 air connectors shall not be used in ducts containing air at temperatures in excess of 250°F (121°C).
(c) An air connector run shall not exceed 14 ft (4.3 m) in length.
(d) Air connectors shall not pass through any wall, partition, or enclosure of a vertical shaft that is required to have a fire resistance rating of 1 hour or more.
(e) Air connectors shall not pass through floors.
(f) Air connectors shall be installed in conformance with the conditions of their approval.

*** * ***

2-3.1.2 Duct coverings and linings shall not flame, glow, smolder, or smoke when tested in accordance with ASTM C 411/97, *Standard Test Method for Hot-Surface Performance of High-Temperature Thermal Insulation*, at the temperature to which it is exposed in service. In no case shall the test temperature be below 250°F (121°C).

*** * ***

2-3.2 Joints. Joints and seams shall be fastened securely and made substantially airtight. Slip joints shall have a lap of at least 1 in. (25.4 mm) and shall be fastened individually (*see Figure 2-3.2*). Tape shall be permitted to be used for sealing joints but, where exposed to the air in the system, it shall not be more combustible than fabric complying with [NFPA 701,

Standard Methods of Fire Tests for Flame-Resistant Textiles and Films] RS 7-3.

Closure systems for use with rigid air ducts tested in accordance with UL 181/96, *Standard for Safety Factory-Made Air Ducts and Air Connectors*, shall have been tested and listed in accordance with UL 181A/94, *Standard for Safety Closure Systems for Use with Rigid Air Ducts and Air Connectors*, and used in conformance with the conditions of the listing.

*** * ***

2-3.5.1 Registers shall be constructed of metal or shall conform with the following:

(a) Registers shall be made of a material classified as 94 HB when tested as described in UL 94/96, *Standard for Safety Test for Flammability of Plastic Materials for Parts in Devices and Appliances*.

(b) Floor registers shall resist, without structural failure, a 200-lb (90.7-kg) concentrated load on a 2-in. (51-mm) diameter disc applied to the most critical area of the exposed face of the register. For this test, the register shall be at a temperature not less than 165°F (74°C) and shall be supported in accordance with the manufacturer's instructions.

*** * ***

2-3.5.3 Fittings connecting the registers to the duct system shall be constructed of metal or material that complies with the requirements of Class 0, Class 1, or Class 2 ducts in UL 181/96, *Standard for Safety Factory-Made Air Ducts and Air Connectors*.

*** * ***

4-1.1.3 Construction.

(a) Where the warm air supply is from a warm air furnace, heating panels shall be enclosed on all sides with material that is wholly noncombustible or that possesses a flame spread classification of not over 25 as determined in accordance with [NFPA 255, *Standard Method of Test of Surface Burning Characteristics of Building Materials*] RS 5-5. This enclosing material shall be attached securely to the building structure; joints and seams shall be substantially airtight. Braces and hangers inside the chamber shall be noncombustible.

(b) Where the warm air supply is from a steam or hot water heat exchanger, heating panels shall either comply with 4-1.1.3(a) or shall be enclosed on all sides with material not more flammable than 1-in. (25.4-mm) (nominal) wood boards. This enclosing material shall be attached securely to the building structure; joints and seams shall be substantially airtight. No single vertical heating panel shall serve more than one story.

*** * ***

4-1.3.1 Air filters shall have either a Class 1 or Class 2 rating in accordance with [UL 900, *Standard for Safety Air Filter Units*, 1994] RS 13-15.

*** * ***

4-1.3.3 Liquid adhesive coatings used on filters shall have a flash point not less than 325°F (163°C) in accordance with [ASTM D 93, *Standard Test Methods for Flash Point by Pensky-Martens Closed Cup Tester*] RS 14-13.

4-1.3.4 All air filters shall be kept free of excess dust and combustible material. Unit filters shall be renewed or cleaned when the resistance to airflow has increased to two times the original resistance or when the resistance has reached a value of recommended replacement by the manufacturer. A permanently installed draft gauge shall be provided for this purpose. Where the filters are of the automatic liquid adhesive type, sludge shall be removed from the liquid adhesive reservoir regularly.

4-1.4 Air-Cooling Equipment.

Mechanical refrigeration used with air duct systems shall be installed in accordance with [ANSI/ASHRAE 15, *Safety Code for Mechanical Refrigeration*] RS 13-6.

*** * ***

4-2 Electric Wiring and Equipment.

Electric wiring and equipment shall be adequate for safe operation and shall be installed in accordance with [NFPA 70, *National Electrical Code*®] the *New York City Electrical Code*. In addition, a disconnecting means shall be installed within sight and easy reach in the ungrounded leads of each power circuit to electrically operated components that are in unprotected locations and in other locations not readily accessible for service.

*** * ***

4-3.2 Fan Control for Stoker-Fired Furnaces.

Where a warm air furnace equipped with a fan to circulate the air is stoker-fired, it also shall be equipped with an automatic overrun control to start the fan when the air in the furnace bonnet or at the beginning of the main supply duct at a point not affected by radiated heat reaches a temperature not higher than 200°F (93°C) after the stoker and fan (in its normal operation) have been shut down as a result of a satisfied thermostat. If a manual disconnect is installed in the air circulating fan electrical circuit, it shall be installed to deenergize both the fan and the stoker simultaneously. Solid fuel may be used only as permitted by Local Law 93/85.

*** * ***

4-3.4 Thermostatically Controlled, Hand-Fired, Solid-Fuel Burning Furnaces.

Hand-fired, solid-fuel burning furnaces on which the furnace draft is controlled by a thermostat shall be equipped with the following:

(a) A fail-safe 250°F (121°C) limit control installed not more than 10 in. (254 mm) above the top surface of the heat exchanger in a supply plenum that extends at least 12 in. (305 mm) above the top surface of the heat exchanger; and

(b) A barometric draft control operated by draft intensity and permanently set to limit the draft to a maximum intensity of 0.13 in. (32.4 Pa) of water gauge. A fail-safe limit control is a limit control that automatically checks the furnace in the event of power failure or shutoff or that automatically checks the furnace when a temperature of 250°F (121°C) is reached, whether or not power is available.

(c) Solid fuel may be used only as permitted by Local Law 93/85.

4-3.5 Air-Circulating Fan Controls.

Where a hand-fired, solid-fuel burning furnace is equipped with a fan to circulate the air, it shall be equipped with fan controls as required for stoker-fired furnaces by 4-3.2. Solid fuel may be used only as permitted by Local Law 93/85.

*** * ***

Chapter 5 Referenced Publications – Delete
Appendix B - Delete
****DOB 5-4-02; 723-72 BCR***

****REFERENCE STANDARD RS 13-5**

ANSI/NFiPA 91-1973-Standard for the installation of blower and exhaust systems for dust, stock, and vapor removal or conveying.
*****913-82 BCR***

*****REFERENCE STANDARD RS 13-6**

ANSI-B60.1/ASHRAE 15-1978 Safety Code for Mechanical Refrigeration.
Modifications - The provisions of ANSI/ASHRAE 15-1978 shall be subject to the following modifications. The section and paragraph numbers are from that standard.
Section 1 Scope and Purpose
1.3 **Application** - Delete the second paragraph beginning with "Equipment" and concluding with "Code."
Section 2 Definition
Add the following paragraph:
2.21a "Equivalent kilowatts = the horsepower multiplied by the factor 0.746."
Section 3 Building Occupancy Classification
The occupancy group classifications of building occupancies shall be those defined in the code as follows:
3.1.1 Institutional occupancy - Shall include Occupancy Groups H-1 and H-2.
3.1.2 Public assembly occupancy - Shall include Occupancy Groups F-1, F-2, F-3, F-4, and G, and all retail stores having an occupant load more than 100 persons on any floor other than the street floor.
3.1.3 Residential occupancy - Shall include Occupancy Groups J-1, J-2, and J-3.
3.1.4 Commercial occupancy - Shall include Occupancy Groups C and E, except retail stores having an occupant load of more than 100 persons on any floor other than the street floor.
3.1.5 Industrial occupancy - Shall include Occupancy Groups A, B-1, B-2, D-1 and D-2.
3.1.6 Multiple occupancy-In buildings classified in more than one occupancy group, the requirements of the "safety code" shall apply separately to each occupancy.
Section 6 Requirements for Institutional, Public Assembly, Residential, and Commercial Occupancies
6.2.4 Delete the words, "more than 1 pound" and substitute: "more than 6 lbs." Add the following to the end of this paragraph: "Electric hot plates and bunsen burners used intermittently shall not be considered a violation of this paragraph provided that the number of bunsen burners installed shall not exceed one burner for each 3 lbs. of refrigerant in the system."
Section 7 Requirements for Industrial Occupancies
7.3 Delete the entire paragraph and substitute the following: "Flammable refrigerants listed in table 4 shall not be used in a refrigerating system unless permission permitted by the Commissioner. Use of such refrigerants shall in no case be permitted unless the applicant submits acceptable evidence that their use will not create a public hazard. No refrigerating system containing a group 3 refrigerant shall be installed unless it conforms with the provisions of the code and is accepted by the fire commissioner."
Section 8 Design and Construction of Equipment
8.5.2 After the words "shall have" insert the words "manual and."
8.8 Add the following to the end of this paragraph: 'Also include the horsepower of the prime mover or compressor, or the equivalent of such horsepower in kilowatts."
Section 10 Pressure-Relief Protection
10.4.8 Delete the entire paragraph and substitute the following: "Discharge or pressure relief devices and fusible plugs on all systems containing more than 7 lbs. of group 2 or group 3 refrigerants shall be to the outside of the building. On systems containing more than 100 lbs. of group 1 refrigerants, discharge of pressure relief devices and fusible plugs shall be to the outside of the building. Discharge of group 1 refrigerants to the outside of the building shall be at least 12 ft. above the grade level and the discharge outlets shall be turned downward. Discharge of systems employing group 2 refrigerants shall be acceptable to the Commissioner. Discharge of group 3 refrigerants shall be acceptable to the Commissioner and the fire commissioner. "
Section 11 Installation Requirements
11.9 Delete this paragraph and substitute the following: "When compressors or self-contained unit systems are housed in a machinery space, other than in a machinery room or a plenum, the space shall be ventilated in accordance with the requirements of table 7."
11.13.4 After the last sentence add the following: "Exhaust registers or outlets capable of exhausting the amount required by table 7 shall be located near the floor unless a lighter than air refrigerant is used; when a lighter than air refrigerant is used, the exhaust registers or outlets shall be located near the ceiling. Emergency remote controls, properly labeled and in an accessible location outside the machinery room shall be provided to start and stop the fans."
Add the following paragraph: "11.13.51 Emergency remote controls, properly labeled and in an accessible location outside the machinery room shall be provided to stop the compressors."
Add the following paragraph:
"11.14 All insulation including finishes, coverings, vapor barriers, and adhesives used with refrigeration system shall have a maximum flame spread rating of 25 without evidence of continued progressive combustion and with a maximum smoke developed rating of 50. If applied with adhesives the insulation may be tested as applied

with adhesives; or the adhesives used shall have a maximum flame spread rating of 25 and a maximum smoke developed rating of 50. Tests shall be performed in accordance with ASTM-E84-61."

11.12.2 After the words, "main exit hallways" insert the words "or stairways." Delete the last part of the last sentence in the paragraph starting with the words "if there are no joints, etc.," and substitute if the section in the hallway is contained in a rigid metal pipe and is labeled in accordance with the provisions of paragraph 13.2."

Section 13 Instructions

13.1 Delete the entire paragraph and substitute: "Signs. Each refrigerating system erected on the premises shall be provided with a legible permanent sign in a prominent location, securely attached and readily accessible, indicating the name and address of the installer, the horsepower of the prime mover or compressor or the equivalent thereof in kilowatts, the kind and number of pounds of refrigerant required in the system for normal operation, and the refrigerant leakage field-test pressure applied. "

13.7 Add to the last sentence in this paragraph: "and in no case more than 75 per cent of the container's capacity."

13.11 Add paragraph (d) as follows: "Where such systems are installed in machinery rooms, the instructions shall state that, in case of emergency or refrigerant leakage, the machinery room shall be vacated promptly, the system shut down by means of the required remote controls located outside the machinery room, and the room ventilated."

******913-82 BCR; Local Law 76-1972***

***REFERENCE STANDARD RS 13-7**

ANSI Z263.1/UL 207-1982 Standard for Refrigerant Containing Components and Accessories, Non Electrical.

****913-82 BCR; Local Law 80-1973***

***REFERENCE STANDARD RS 13-8**

ANSI Z262.1/UL 303 - 1980 Standard for Refrigeration and Air-Conditioning Condensing and Compressor Units. Revision March 1982.

****913-82 BCR; Local Law 80-1973***

***REFERENCE STANDARD RS 13-9**

ANSI B136.1/UL 353 - 1974 Limit Controls. Revision November 1976.

****913-82 BCR; Local Law 80-1973***

***REFERENCE STANDARD RS 13-10**

ANSI Z226.1/UL 372 - 1975 Standard for Primary Safety Controls for Gas and Oil-Fired Appliances. Revisions September 10, 1976 and September 3, 1980.

****913-82 BCR; Local Law 80-1973***

***REFERENCE STANDARD RS 13-11A**

ANSI B144.1/UL 465 - 1978 Standard for Central Cooling Air Conditioners. Revision May 1981.

****913-82 BCR; Local Law 80-1973***

****REFERENCE STANDARD RS 13-11B**
FIELD TEST PROCEDURES FOR LARGE MECHANICAL LIQUID CHILLING UNITS

1.0 PURPOSE

1.1 The purpose of this procedure is to establish the basis for investigation and testing a mechanical liquid chilling unit, primarily for use with environmental applications, to determine its adequacy for public safety.

2.0 SCOPE

2.1 This procedure applies to mechanical liquid chilling packages consisting of a factory designed and fabricated assembly (not necessarily shipped as one package) of one or more compressors, condensers and liquid coolers with interconnections and appurtenances.

2.2 This procedure applies to any reciprocating, centrifugal or screw type hermetic liquid chilling package or open-drive liquid chilling package driven by an electric motor, steam turbine or other prime mover which cannot be tested in an approved independent testing laboratory. Certification of the inadequacy of existing test facilities shall be obtained in writing from the President, Air Conditioning and Refrigeration Institute and accepted by the Director, MEA Division, prior to commencement of testing.

2.3 All electrical work shall conform with the New York City Electrical Code. Electrical equipment shall be submitted to the Advisory Board of the Bureau of Gas and Electricity for approval.

3.0 REFERENCE STANDARDS

3.1 The equipment shall comply with all applicable requirements of the following standards and codes:

3.1.1 Hermetic and open-drive chilling units.

A. ANSI B9.1 Safety Code for Mechanical Refrigeration.

B. ANSI B144.1 (UL 465) Standard for Safety, Central Cooling Air Conditioners.

3.1.2 Open-drive chilling units.

A. Electric motor drive: ANSI C51.1 (NEMA Publication MG 2) Safety Standard for Construction and Guide for Selection, Installation and Use of Electric Motors and Generators.

B. Steam turbine drive: NEMA Publication SM 21 Multistage Steam Turbines For Mechanical Drive Service of NEMA Publication SM 22 Single Stage Turbines for Mechanical Drive Service.

C. Gas turbine drive: ANSI B176.1 (NFiPA No. 37) Installation and Use of Stationary Combustion Engines and Gas Turbines.

D. Gas or Diesel Engine drive: ANSI B176.1 (NFiPA No. 37) Installation and Use of Stationary Combustion Engines and Gas Turbines.

3.2 Where conflicting requirements might occur between ANSI B9.1 and ANSI B144.1, the requirements of ANSI B9.1 shall govern.

3.3 Where conflicting requirements might occur between ANSI C51.1 and ANSI B144.1, the requirements of ANSI C51.1 shall govern.

3.4 For interpretive and supplemental information necessary to adapt ANSI B144.1 (UL 465) requirements to mechanical liquid chilling packages, refer to Section 6.

4.0 PROCEDURE FOR CERTIFICATION OF COMPLIANCE

4.1 An approved independent testing laboratory, hereinafter the Laboratory, shall be retained to determine

and certify compliance to referenced standards, and to this procedure: or that a reduced requirement has been met.
4.1.1 Laboratory, as referred to herein, shall be an independent testing laboratory which has been approved by the City of New York for such work and has received an MEA laboratory acceptance number.
4.2 The Laboratory shall review the manufacturer's equipment design to determine what tests are required to meet the reference standards and this procedure.
4.2.1 The Laboratory shall review the manufacturer's test data produced during the manufacturing process and shall direct the performance of final tests in the manufacturer's facility or in the field.
4.2.2 Where tests are performed at a location remote from the manufacturer's factory, it shall be the responsibility of the Laboratory to determine that the equipment involved is adequate for subjection to the specified tests. The Laboratory shall avail itself of applicable design, inspection, and test records from the manufacturer in making this determination.
4.2.3 The Laboratory shall submit a written final test report certifying that the requirements of the referenced standards and this procedure have been met; of which, if any, requirements were not met, and why.

5.0 INSPECTION AND TESTING REQUIREMENTS AND PROCEDURES

5.1 Where testing for compliance to applicable standards or this procedure has been performed by the Laboratory in the manufacturer's facility, it shall not be necessary to repeat the test in the field, provided that the design and testing criteria were met and a report submitted.
5.2 It is not intended that equipment or components intended for subsequent installation and service be in any way damaged, deformed or destroyed as a result of tests specified in the reference standards or in this procedure. When this conflicts with a requirement of a referenced standard, a sample of an equivalent component shall be subjected to the required test and the chiller or component in question be evaluated by engineering analysis. The sample may be tested in the manufacturers facility or elsewhere by the Laboratory.
5.2.1 Results of tests that have been performed on equipment or components of the same model and design, when of equal size or larger, are considered acceptable for use by the Laboratory in evaluation of equipment design by engineering analysis.
5.3 Any component, device, or unit that bears a U. L. label shall be considered to be in compliance with the requirements of the reference standards and of this procedure without further testing, provided that it is applied within its rating and that no modifications have been made following shipment from the manufacturer's facility.
5.4 Any components, device, or unit that bears a C.S.A. label shall be considered to be in compliance with the requirements of the referenced standards and of this procedure without further testing provided that it is applied within its rating and that no modifications have been made following shipment from the manufacturer's facility.
5.5 Any pressure vessel that bears the ASME Code U or N stamp shall be considered to be in compliance with all applicable portions of the referenced standards and of this procedure without design review or further testing provided no modifications to the vessel have been made after shipment from the manufacturer's facility.
5.6 Any pressure vessel that bears the ASME Code UM stamp shall be considered to be in compliance with the requirements of the referenced standards and this procedure without design review or further testing provided that the Laboratory has determined that the vessel was tested in accordance with applicable standards, and that no modifications to the vessel have been made following shipment from the manufacturer's facility.
5.7 This procedure shall apply only to liquid chiller packages and components of such packages, and does not apply to auxiliary or associated system components furnished by parties other than the chiller manufacturer. The responsibility for determination that such components or devices satisfy the requirements of applicable standards and codes is not within the scope of this procedure.
5.8 It is the responsibility of the Laboratory to insure adequate safeguards for the protection of personnel from hazards associated with testing requirements.
5.9 It shall be the responsibility of the Laboratory to insure that equipment, devices, and facilities be properly protected during performance of specified tests.

6.0 INTERPRETATIONS AND SUPPLEMENTAL INFORMATION

6.1 Substitutions and Additions to UL 465, Standard for Safety, Central Cooling Air Conditioners.
6.1.1 To Section 1.1 add: Liquid chillers as described in this procedure are normally installed in systems classified as "Indirect Systems" as described in Section 4.4 of ANSI B9.1, Safety Code for Mechanical Refrigeration, where there is no direct interface between the refrigerant and the air serving the conditioned space.
6.1.2 In Section 1.3 change maximum voltage to 15,000 volts.
6.1.3 To Section 3.2 add: Where the compressor motor controller and overload protective device are not furnished by the manufacturer of the chiller, the manufacturer shall provide a specification for these components for the customer. The specification shall include information as to the required controller rating, sequencing of start, overload protection trip current and connections to the chiller control system. If a current transformer to provide a signal input circuit to the chiller control system is to be included, the specification is to include the requirements for the current transformer and its shunting device, if any.
6.1.4 To Section 8.19 thru 8.26 add: If the field-wiring enclosure of the motor or that portion of the wiring enclosure to which a field-wiring system (conduit) is to be connected can be readily removed and replaced in the field, an opening or knockout for connection of a wiring system to the motor is not required to be provided. The surface of the enclosure to which the field-wiring system is to be connected shall be of adequate size to accommodate the number and size of conduits which may be required for the installation.
6.1.5 To Section 10.24 add: Soldering lugs or pressure terminal connectors are not required to be provided by the manufacturer for connection of the field wiring to

hermetic motor power supply terminals. Threaded studs of adequate size and length are to be used. Nuts for the studs shall be provided to adequately secure at least one terminal connector to each threaded stud.

6.1.6 To Section 11 add: Wiring to hermetic motors shall be with copper conductors only unless it can be determined that galvanic corrosion due to condensation at the terminals will not occur.

6.1.7 To Section 12 add:

A signal input circuit derived from a current transformer sensing the motor current and located in the (remote) motor controller is considered to be a National Electric Code Class 1 circuit. It shall be segregated or separate from other circuits.

B. Unless provided with insulation rated for the highest voltage involved, terminals for temperature sensors, when furnished on motors, shall be located in a separate enclosure or shall be separated by substantial barriers from the space provided for field wiring to the power supply connections on the motor.

C. Factory wiring to such sensing devices shall be protected from damage during installation of field wiring to the motor.

6.1.8 To Table 13.1 add the conductor sizes for larger current ratings from Table 250-95 of National Electric Code NFiPA No. 70.

6.1.9 To Section 16 add:

A. Insulating materials used inside hermetic motors shall be compatible with the refrigerants and oil used. They shall also be compatible with each other and with other materials used within the motor.

B. Compliance with paragraph (A) is to be judged in the same manner as for materials used in hermetic motor-compressors as judged under the Standard for Sealed (Hermetic Type) Motor Compressors, UL 984.

6.1.10 To Section 23 add:

A. For hermetic motors rated 600 volts or less, the spacings inside the motor shall conform with the requirements in the Standard for Sealed (Hermetic Type) Motor-Compressors, UL 984.

B. For hermetic motors rated more than 600 volts, the spacings shall conform with paragraphs (C) thru (E) inside and outside the enclosure.

C. Except as indicated in paragraph (E), the spacing between uninsulated live parts of different polarity shall not be less than the value indicated in Table 6-1.

TABLE 6-1 MINIMUM SPACING BETWEEN UNINSULATED LIVE PARTS OF DIFFERENT POLARITY

Rating Volts	Through Space Inches	Oversurface Inches
601- 1,000	3/8	1/2
1,001- 2,000	3/4	1 3/8
2,001- 3,000	1	2
3,001- 5,000	3 1/4	4
5,001- 7,500	4	5
7,501- 12,500	5 1/4	7
12,501- 15,000	6	8

D. Except as indicated in paragraph (E), the spacing between uninsulated live parts and dead-metal parts including the enclosure shall not be less than the value indicated in Table 6-2.

TABLE 6-2 MINIMUM SPACING BETWEEN UNINSULATED LIVE PARTS AND DEAD-METAL PARTS

Rating Volts	Through Space Inches	Oversurface Inches
601- 1,000	3/8	1/2
1,001- 2,000	3/4	1 3/8
2,001- 3,000	1	2
3,001- 5,000	2 1/2	3
5,001- 7,500	3	3 1/2
7,501- 12,500	4 3/8	5
12,501- 15,000	5	5 ¾

E. Linings or barriers of suitable insulating materials may be employed where the spacings are less than the values specified in Tables 6-1 and 6-2 provided that the linings or barriers are securely fastened in place.

F. Spacings inside hermetic type oil pump assemblies shall comply with the spacing requirements for inside hermetic motors. See paragraph (A). Spacings in non-hermetic motors shall comply with the Safety Standard for Electric Motors, NEMA Publication MG-2.

G. A signal input circuit at a low level of voltage or current to the chiller control system which is derived from a current transformer sensing the motor current and located in the (remote) motor controller is not considered to be a low-voltage circuit. The spacings on the basis of the maximum available voltage or current at the component from the signal circuit with the motor operating at rated load current assuming this is a high-voltage circuit, and as described in paragraph (I). Consideration shall also be given to the voltage and current available during starting and stalled rotor conditions.

H. The terms "low-voltage circuit" and "high-voltage circuit" are defined in UL 465, paragraph 2.2.

I. Provision shall be made for limiting the potential (voltage) in the chiller control assembly resulting from an open secondary circuit of a remote current transformer, such as described in paragraph (G) to a potential (voltage) for which the chiller control components in this circuit are acceptable.

J. The open secondary circuit may result from an open remote shunt resistor or from a disconnected or broken conductor at the connection to the chiller control circuit.

6.1.11 For Section 27.5 substitute 8.3.1 of ANSI B9.1 Safety Code for Mechanical Refrigeration.

6.1.12 For Section 27.10 substitute the following: The dial of a pressure gauge permanently connected to the high side of a refrigeration system shall be graduated up to not less than 1.2 times the design pressure of the high side of the system.

6.1.13 In Section 28.5 change maximum setting of pressure limiting device to 90% of the design pressure of the high side of the refrigeration system for positive displacement compressors and 100% of the design pressure of the high side of the refrigeration system for non-positive displacement compressors.

6.1.14 For Section 29 substitute Section 10, Pressure

Relief Protection, of ANSI B9.1 Safety Code for Mechanical Refrigeration.

6.1.15 For Section 34.1 substitute:

A. During the Input Test the chiller shall be run at design operating conditions as stipulated on the equipment submittal drawings.

B. During the Temperature and Pressure Test, the chiller shall be run at the design chilled water leaving temperature and flow rate conditions as stipulated on the equipment submittal drawings and the chiller loaded to the rated current of the motor by adjusting the condenser water or air flow rate and/or temperature. If a variable speed drive is furnished, the compressor is to run at its design operating speed.

6.1.16 To Section 35 add: An input test is not required if the chiller is provided with a current-limiting control for the motor or if the compressor is driven by a prime mover other than an electric motor.

6.1.17 To Section 36.1 and Table 36.1 add: The temperature on the winding of an hermetic motor shall not exceed a value appropriate for the insulation system or for the refrigerant and oil employed.

6.1.18 To Section 39 add: The dielectric withstand test on the main motor may be conducted by the Laboratory at the motor manufacturer's plant if an open drive motor, or the chiller manufacturer's plant if an hermetic motor after final assembly of the motor in its enclosure. During the test low voltage circuits, motor sensor elements, and signal input circuits are to be connected to the enclosure.

6.1.19 To Section 39.1 add:

C. Test potential may be 20% higher for a period of one second when the test is performed in the manufacturer's plant.

D. Test potential shall be 85% of that in A, B, or C when the test is performed in the field.

6.1.20 For Section 51.3 substitute: Parts exposed to high side refrigerant pressure shall withstand, without failure, a pressure equal to five times the factory test pressure for the high side of the refrigeration system.

6.1.21 For Section 51.5 substitute: A refrigerant-containing component having a marked design pressure shall withstand, without failure, a pressure equal to three times the working pressure.

6.1.22 For Section 51.6 substitute: High side parts of a liquid chiller provided with a pressure limiting device required for compliance with Section 28.1 shall withstand, without failure, a pressure equal to three times the maximum setting to which the pressure limiting device may be readily adjusted by the adjusting means provided for centrifugal and screw equipment and five and one-half times for reciprocating equipment.

6.1.23 For Section 51.13 substitute: Parts exposed to low side refrigerant pressure shall withstand, without failure, a pressure equal to three times the design pressure of the low side of the refrigeration system.

6.1.24 To Section 51.15 add: If results of tests of samples of a refrigerant containing part are not readily available from the manufacturer, the Laboratory shall be responsible for obtaining samples and for testing. Samples subjected to such strength tests may not be used on the equipment being investigated.

6.1.25 For Section 55 substitute the following: Every liquid chilling unit, whether assembled in the manufacturer's plant or erected on the premises, shall be subjected to the Field Test stipulated in Section 12 of ANSI B9.1 Safety Code for Mechanical Refrigeration.

6.2 Deletions.

6.2.1 The following sections of UL 465 Standard for Safety, Central Air Conditioners are not applicable to liquid chilling units described in this procedure since such chillers do not include components located in the air stream serving the conditioned space: 9, 21.2, 21.3, 24.3, 27.8, 32.1, 33, 36.10, 42 and 55.3.

6.2.2 The provisions of Section 5 of NEMA Standards Publication Nos. 21 and 22 covering turbine sound pressure levels are not included as a requirement in this procedure.

6.2.3 The provisions of Section 91 of ANSI B176.1 (NFiPA No. 37) covering fire extinguishers are not included as a requirement in this procedure.

****1101-79 BCR***

***REFERENCE STANDARD RS 13-12**

ANSI C33.14/UL 484 - 1982 Room Air Conditioners.

****913-82 BCR; Local Law 80-1973***

***REFERENCE STANDARD RS 13-13**

ANSI B191.1/UL 559 - 1975 Standard for Heat Pumps. Revision October 1981.

****913-82 BCR; Local Law 80-1973***

***REFERENCE STANDARD RS 13-14**

ANSI Z251.1/UL 883 - 1980 Standard for Fan Coil Units and Room Fan-Heater Units. Revision February 1982.

****913-82 BCR; Local Law 80-1973***

***REFERENCE STANDARD RS 13-15**

ANSI B124.1/UL 900 - 1977 Standard for Test Performance of Air Filter Units. Revision December 1980.

****913-82 BCR; Local Law 80-1973***

***REFERENCE STANDARD RS 13-16**

ANSI/NFiPA 17-1980 Standard for Dry Chemical Extinguishing Systems.

**** 913-82 BCR; Local Law 80-1973***

REFERENCE STANDARD RS 14
HEATING AND COMBUSTION EQUIPMENT

*LIST OF REFERENCED NATIONAL STANDARDS

**NFiPA No. 90B	Standard for the Installation of Warm Air Heating and Air Conditioning nd Ventilating Systems, As Modified ……1996
AGA/ANSI-Z223.1 /NFiPA 54	National Fuel Gas Code, and Addenda ANSI Z223.1a-1987……..……1984
ANSI/NFiPA	Standard for the Installation of Oil Burning No. 31 Equipment.……..1983
ANSI/NFiPA 211	Standard for Chimneys, Fireplaces, Vents, and Solid Fuel Burning Appliances….. 1988
ANSI/ASME	Boiler and Pressure Vessel Code, Sections I, IV and VIII……..……1986
ANSI-Z21.1	Household Cooking Gas Appliances and Addenda Z21.1a-1982, Z21.1b-1984……1982
ANSI-Z21.2	Gas Hose Connectors for Portable Indoor Gas-Fired Equipment, and Addenda Z21.2a-1985, Z21.2b-1987.....…….....…..…….…..……. 1983
ANSI-Z21.3	Hotel and Restaurant Gas Ranges and Unit Broilers...……...…..……. 1982
ANSI-Z21.5.1	Gas Clothes Dryers, Volume I, Type 1 Clothes Dryers……...…..……. 1982
ANSI-Z21.5.2	Gas Clothes Dryers, Volume II, Type 2 Clothes Dryers, and Addenda Z21.5.2a-1981, Z21.5.2b-1982.....…...……. 1979
ANSI-Z21.8	Installation of Domestic Gas Conversion Burners.....……...…....……. 1984
ANSI-Z21.10.1	Gas Water Heaters, Volume I. Storage Water Heaters with Input Ratings of 75,000BTU per Hour or less…….……..……1987
ANSI-Z21.10.3	Gas Water Heaters, Volume III — Storage with Input Ratings above 75,000 BTU per Hour, Circulating and Instantaneous Water Heaters.....…….…..1987
ANSI-Z21.11.1	Gas-Fired Room Heaters, Volume I, Vented Room Heaters, and Addenda Z21.11.1a-1985..1983
ANSI-Z21.11.2	Gas-Fired Room Heaters, Volume II, Unvented Room Heaters, and Addenda Z21.11.2a-1984.....…….....…….……1983
ANSI-Z21.12	Draft Hoods and Addenda Z21.12a-1983.....…..….....…….. 1981
ANSI-Z21.13	Gas-Fired Low Pressure Steam and Hot Water Boilers, and Addenda Z21.13a…… 1982
ANSI-Z21.15	Manually Operated Gas Valves, and Addenda Z21.15a-.1981 Z21.15b-1984.…… 1979
ANSI-Z21.17	Domestic Gas Conversion Burner……..…….…….…….. 1984
ANSI-Z21.19	Refrigerators Using Gas Fuel, and Addenda Z21.19a-1984……..…….……1983
ANSI-Z21.20	Automatic Gas Ignition Systems and Components, and Addenda Z21.20a-1987..…1985
ANSI-Z21-21	Automatic Valves for Gas Appliances, and Addenda Z21.21a-1977, Z21.21b-1981…...1974
ANSI-Z21.22	Relief Valves and Automatic Gas Shut Off Devices for Hot Water Supply Systems…. 1986
ANSI-Z21.23	Gas Appliance Thermostats, and Addenda Z21.23a-1985……. 1980
ANSI-Z21.24	Metal Connectors for Gas Appliances.....…….....…….. 1987
ANSI-Z21.27	Hotel and Restaurant Gas Deep Fat Fryers, and Addenda Z21.27a-1975, Z21.27b-1978... 1974
ANSI-Z21.28	Commercial Gas Baking and Roasting Ovens, and Addenda Z21.28a-1975, Z21.28b-1978..1974
ANSI-Z21.31	Gas Counter Appliances, and Addenda Z21.31a-1978……..…..…… 1975
ANSI-Z21.34	Gas-Fired Duct Furnaces, and Addenda Z21-34a-1974, Z21.34b-1974…… 1971
ANSI-Z21.40.1	Gas-Fired Absorbtion Summer Air Conditioning Appliances, and Addenda Z21.40.1a-1982... 1981
ANSI-Z21.41	Quick-Disconnect Devices for Use with Gas Fuel, and Addenda Z21.41a-1981, Z21.41b-1983……..…..…….……1971
ANSI-Z21.42	Gas-Fired Illuminating Appliances, and Addenda Z21.42a-1973, Z21.42b-1981…. 1971
ANSI-Z21.44	Gas-Fired Gravity and Fan Type Direct Vent Wall Furnaces, and Addenda Z21.44a-1985... 1985
ANSI-Z21.45	Flexible Connectors of Other than All Metal Construction for Gas Appliances, and Addenda Z21.45a-1987...….....….....…….. 1985
ANSI-Z21.46	Gas-Fired Kettles, Steam Cookers and Steam Generators, and Addenda Z21.46a-1975, Z21.46b-1978.....…….....…….. ……..……1974
ANSI-Z21.47	Gas-Fired Central Furnaces (Except Direct Vent Central Furnaces) ……1987
ANSI-Z21.48	Gas-Fired Gravity and Fan Type Floor Furnaces.....…….....……... 1986
ANSI-Z21.49	Gas-Fired Gravity and Fan Type Vented Wall Furnaces...…….....……1986
ANSI-Z21.50	Vented Decorative Gas Appliances.....…….....…….. 1986
ANSI-Z21.52	Gas-Fired Single Firebox Boiler, and Addenda Z21.52a-1973…….. 1971
ANSI-Z21.54	Gas Hose Connectors for Portable Outdoor Gas-Fired Appliances, and Addenda Z21.54a 1983, Z21.54b-1985.....…….....…….…..……. 1979
ANSI-Z21.55	Gas-Fired Sauna Heaters, and Addenda Z21.55a-1980, Z21.55b-1981…….. 1979
ANSI-Z21.56	Gas-Fired Pool Heaters, and Addenda Z21.56a-1987…….……... 1986

ANSI-Z21.57	Recreational Vehicle Cooking Gas Appliances, and Addenda Z21.57a-1982, Z21.57b-1984.	1982
ANSI-Z21.58	Outdoor Cooking Gas Appliances	1987
ANSI-Z21.59	Gas-Fired High Pressure Steam and Hot Water Boilers	1974
ANSI-Z21.60	Decorative Gas Appliances for Installation in Vented Fireplaces, and Addenda Z21.60a-1982, Z21.60b-1984	1981
ANSI-Z21.64	Direct Vent Central Furnaces, and Addenda Z21.64a-1986, Z21.64b-1987	1985
ANSI-Z21.65	Separated Combustion System Central Furnaces	1978
ANSI-Z21.69	Connectors for Movable Gas Appliances, and Addenda Z21.69a-1983, Z21.69b-1985.	1979
ANSI-Z83.2	Gas Atmosphere Generators	1977
ANSI-Z83.3	Gas Utilization Equipment in Large Boilers, and Addenda Z83.3a-1972, Z83.3b-1976.	1971
ANSI-Z83.4	Direct Gas-Fired Make-Up Air Heaters, and Addenda Z83.4a-1986	1985
ANSI-Z83.6	Gas-Fired Infrared Heaters, and Addenda Z83.6a-1984, Z83.6b-1985	1982
ANSI-Z83.7	Gas-Fired Construction Heaters	1974
ANSI-Z83.8	Gas Unit Heaters, and Addenda Z83.8a-1986	1985
ANSI-Z83.9	Gas-Fired Duct Furnaces	1986
ANSI-Z83.11	Gas Food Service Equipment- Ranges and Unit Broilers	1986
ANSI-Z83.12	Gas Food Service Equipment- Baking and Roasting Ovens	1986
ANSI-Z83.13	Gas Food Service Equipment- Deep Fat Fryers	1986
ANSI-Z83.14	Gas Food Service Equipment- Counter Appliances	1986
ANSI-Z83.15	Gas Food Service Equipment- Kettles, Steam Cookers, and Steam Generators	1986
ANSI-UL-815	Electric Sauna Heating Equipment, January 1986 Revision	1983
ANSI-C33.87/UL 174	Household Electric Cooking Appliances, January 1986 Revision	1983
ANSI/UL-197	Commercial Electric Cooking Appliances, September 1986 Revision	1982
UL 127	Standard for Factory-Built Fireplaces	1988
UL 252	Compressed Gas Regulators, May 1986 Revision	1984
ANSI-Z96.2/UL 296	Oil Burners, August 1985 Revision	1980
ANSI-B130.1/UL 343	Pumps for Oil-Burning Appliances	1986
UL 412	Refrigeration Unit Coolers, December 1984 Revision	1980
ANSI/UL 471	Commercial Refrigerators and Freezers, November 1985 Revision	1985
ANSI/C33.1/UL 499	Electric Heating Appliances, March 1985 Revision	1978
UL 560	Electric Home-Laundry Equipment	1986
ANSI/UL 574	Electric Oil Heaters, May 1985 Revision	1980
ANSI/UL 737	Standard for Fireplace Stoves	1988
UL 586	Test Performance of High Efficiency, Particulates, Air-Filter Units	1986
ANSI-Z96.3/UL 726	Oil-Fired Boiler Assemblies, June 1986 Revision	1975
ANSI-Z96.1/UL 727	Oil-Fired Central Furnaces, November 1986 Revision	1986
ANSI-Z96.4/UL 729	Oil-Fired Floor Furnaces, December 1980 Revision	1976
ANSI-Z96.5/UL 730	Oil-Fired Wall Furnaces, December 1980 Revision	1974
ANSI-Z96.2/UL 731	Oil-Fired Unit Heaters, January 1985 Revision	1975
ANSI-Z95.3/UL 732	Oil-Fired Water Heaters, December 1980, Revision, January 1985 Revision	1974
UL 733	Oil-Fired Air Heaters and Direct-Fired Heaters, August 1985 Revision	1975
UL 795	Commercial-Industrial Gas-Heating Equipment, February 1986 Revision	1973
UL 834	Electric Heating Water Supply, and Power Boilers, October 1983 Revision	1980
UL 867	Electroectrostatic Air Cleaners	1981
ANSI-C33.75/UL 875	Electric Dry Bath Heaters, October 1984 Revision	1983
UL 1025	Electric Air Heaters, October 1986 Revision	1980
UL 1042	Electric Baseboard Heating Equipment, May 1985 Revision	1979
ANSI-C33.104/UL10096	Electric Central Air-Heating Equipment, July 1986 Revision	1986
UL 1206	Electric Commercial Clothes-Washing Equipment	1979
UL 1240	Electric Commercial Clothes-Drying Equipment,July 1984 Revision	1979
UL 1261	Electric Water-Heaters for Pools and Tubs, April 1986 Revision	1985
UL 1453	Electric Booster and Commercial Storage Tank Water Heaters,May 1983 Revision	1982
UL 1482	Standard for Room Heaters, Solid Fuel Type (September 1988 Revision	1988
ANSI/UL 1555	Electric Coin-operated Clothes-Washing Machine	1982
UL 1556	Electric Coin-operated Clothes-Drying Equipment, July 1984 Revision	1982
ANSI/ASTM-C64	Specifications for Refractories for Incinerators and Boilers (Reapproved 1977)	1972
ANSI/ASTM-C401	Classification of Castable Refractories	1984
ANSI/ASTM-C612	Standard Specification for Mineral Fiber Block and Board Thermal Insulation	1983
ASTM-E84	Method of Test for Surface Burning Characteristics of Building Materials	1961

ANSI/ASTM-D396	Specification for Fuel Oils…….	1984
ANSI/ASTM-D93	Method of Test for Flash Points by Pensky-Martens Closed Tester…….	1985
ANSI/ASTM-C105	Specifications for Ground Fire Clay as a Mortar for Laying-up FireClay Brick, (Reapproved 1981)…….…….	1947
*SMACNA	Fibrous Glass Duct Construction Standard, as Modified.....…….	1992
**SMACNA	HVAC Duct Construction Standards – Metal and Flexible, as Modified……..	1995
**SMACNA	HVAC Air Duct Leakage Test Manual, as Modified.....……..…….	1985

Note: Wherever in these standards reference is made to the "National Electrical Code" the work so covered shall meet the requirements of the Electrical Code of the City of New York.
946-87 BCR; Local Law 80-1989
****DOB 5-4-02***

* REFERENCE STANDARD RS 14-1

ANSI/NFiPA- 90 B 1996, as modified—Standard for the Installation of Warm Air Heating and Air Conditioning Systems.
The provisions of ANSI/NFiPA No. 90 B-96 together with the modifications thereto shall constitute Reference Standards RS 13-4 and RS 14-1.
The appendices to ANSI/NFiPA No. 90 B-96 are not part of this Reference Standard. These are for informational purposes only.
Wherever reference is made to the "National Electrical Code" it shall be changed to read "Electrical Code of the City of New York."
The New York State Energy Conservation Construction Code also regulates the design and construction of heating, ventilating, and air conditioning systems in New York City.

STANDARD FOR THE INSTALLATION OF WARM AIR HEATING AND AIR CONDITIONING SYSTEMS

ANSI/NFiPA No. 90 B-1996, AS MODIFIED

Delete the NOTICE.
Delete asterisks from all section numbers having them.
Material in [brackets] is to be deleted.
Underlined material is new.
** * * denotes unchanged text.*
Section numbers are from ANSI/NFiPA No. 90 B-1996.

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Chapter 1 General

1-1 Scope. This standard shall apply to all systems for the movement of environmental air in structures that[:] are otherwise exempted by Section 27-777(b) of the Administrative Code, or whose heating systems are subject to Section 27-812 of the Administrative Code.
[(a) Serve one- or two-family dwellings; or
(b) Serve spaces not exceeding 25,000 ft^3 (708 m^3) in volume in any occupancy.
Exception: Buildings of combustible construction over three stories in height shall be in accordance with NFPA 90A, Standard for the Installation of Air Conditioning and Ventilating Systems.]

1-1.1 The provisions of this standard are not intended to be applied retroactively. Where the system is being altered, extended, or renovated, the requirements of Article 4 of Subchapter 1 of Chapter 1 of Title 27 of the Administrative Code shall govern the applicability of this standard.
*** * ***

1-3 Definitions.
Accepted - Means "Accepted" by the Materials and Equipment Acceptance Division of the Department of Buildings.
NOTE: The MEA Division is the "authority having jurisdiction" in use of materials, assemblies, forms, methods of construction, and service equipment subject to the acceptance requirements of Building Code Sections 27-131 and 27-135.

Air Filter. [A device used to reduce or remove air-borne solids from heating, ventilating, and air conditioning systems.]

(a) A Class 1 air filter is one which, when clean, does not contribute fuel when attacked by flame, and emits only negligible amounts of smoke when tested in accordance with RS 13-15.

(b) A Class 2 air filter is one which, when clean, burns moderately when attacked by flame or emits moderate amounts of smoke or both when tested in accordance with RS 13-15.

Approved. [Acceptable to the authority having jurisdiction.] See subchapter 2 of the Building Code for definition.

Authority Having Jurisdiction. [The organization, office, or individual responsible for approving equipment, an installation, or a procedure.] The Commissioner of the Department of Buildings or his designee.

*** * ***

Listed - Equipment, materials or services included in a list published by an organization acceptable to the "authority having jurisdiction" and concerned with evaluation of products or services that maintains periodic inspection of production of listed equipment or materials or periodic evaluation of services, and whose listing states either that the equipment, material or service meets identified standards or has been tested and found suitable for use in a specified purpose.

NOTE: The means for identifying listed equipment may vary for each organization concerned with product evaluation, some of which do not recognize equipment as listed unless it is also labeled. The "authority having jurisdiction" should utilize the system employed by the listing organization to identify a listed product.

Noncombustible Material. [A material that, in the form in which it is used and under the conditions anticipated, cannot ignite, burn, support combustion, or release flammable vapors when subjected to fire or heat. When tested in accordance with ASTM E 136, Standard Test Method for Behavior of Materials in a Vertical Tube Furnace at 750 Degrees C, materials that successfully pass the test shall be considered noncombustible.] See subchapter 2 of the Building Code for definition.

*** * ***

[**Should.** Indicates a recommendation or that which is advised but not required.]

*** * ***

Chapter 2 System Components

*** * ***

2-1.1.1 Supply ducts shall be:

(a) Class 0 or Class 1 rigid or flexible air ducts tested in accordance with UL 181/96, *Standard for Safety Factory-Made Air Ducts and Air Connectors*; or

(b)Of sheet metal having a nominal thickness as shown in Table 2-1.1.1.

Exception No. 1: Supply ducts that are completely encased in not less than 2 in. (51 mm) of concrete in a floor slab shall not be required to meet the requirements of 2-1.1.1, except within 2 ft (0.61 m) of the furnace supply plenum and within 2 ft (0.61 m) of a vertical connection to a riser or register.

Exception No. 2: Supply ducts for a separate air cooling system, not interconnected to any warm air heating system, serving a single-family dwelling shall not be required to meet the requirements of 2-1.1.1, provided that they are not closer than 2 ft (0.61 m) to any furnace or its supply plenum, boiler, or other heat-producing appliances and that they comply with 2-2.1.1, 2-2.1.3, 2-2.2, 2-2.3, and 2-2.4 as specified for return ducts.

Exception No. 3: Vibration isolation connectors in duct systems shall be made of approved flame-retardant fabric or shall consist of sleeve joints with packing of approved noncombustible material. The fabric shall not exceed 10 in. (254 mm) in length in the direction of airflow.

Exception No. 4: A Class 0 or Class 1 rigid or flexible air duct shall not be used as a vertical air duct that is more than two stories in height.

Exception No. 5: A Class 0 or Class 1 rigid or flexible air duct shall not be used in an air duct containing air at a temperature in excess of 250°F (121°C).

2-1.1.2 Supply ducts shall be installed in conformance with:

(a) Class 0 or Class1 rigid or flexible air ducts tested in accordance with UL 181/96, *Standard for Safety Factory-Made Air Ducts and Air Connectors*; or

(b) Of sheet metal having a nominal thickness as shown in table 2-1.1.1

(b) RS 14-22 [SMACNA *Fibrous Glass Duct Construction Standards*;

(c) SMACNA *HVAC Duct Construction Standards — Metal and Flexible*;

(d) SMACNA *Installation Standards for Residential Heating and Air Conditioning Systems*.]

2-1.2 Air Connectors. Air connectors are limited-use, flexible air ducts that shall not be required to conform to the requirements for air ducts, provided they conform to the following provisions:

(a) Air connectors shall conform to the requirements for Class 0 or Class 1 connectors when tested in accordance with UL 181/96, *Standard for Safety Factory-Made Air Ducts and Air Connectors*.

(b) Class 0 or Class 1 air connectors shall not be used in ducts containing air at temperatures in excess of 250°F (121°C).

(c) An air connector run shall not exceed 14 ft (4.3 m) in length.

(d) Air connectors shall not pass through any wall, partition, or enclosure of a vertical shaft that is required to have a fire resistance rating of 1 hour or more.

(e) Air connectors shall not pass through floors.

(f) Air connectors shall be installed in conformance with the conditions of their approval.

*** * ***

2-3.1.2 Duct coverings and linings shall not flame, glow, smolder, or smoke when tested in accordance with ASTM C 411/97, *Standard Test Method for Hot-Surface Performance of High-Temperature Thermal Insulation*, at the temperature to which it is exposed in service. In no case shall the test temperature be below 250°F (121°C).

*** * ***

2-3.2 Joints. Joints and seams shall be fastened securely and made substantially airtight. Slip joints shall have a lap of at least 1 in. (25.4 mm) and shall be fastened individually (*see Figure 2-3.2*). Tape shall be permitted to be used for sealing joints but, where exposed to the air in the system, it shall not be more combustible than fabric complying with [NFPA 701, *Standard Methods of Fire Tests for Flame-Resistant Textiles and Films*] RS 7-3.

Closure systems for use with rigid air ducts tested in accordance with UL 181/96, *Standard for Safety Factory-Made Air Ducts and Air Connectors*, shall have been tested and listed in accordance with UL 181A/94, *Standard for Safety Closure Systems for Use with Rigid Air Ducts and Air Connectors*, and used in conformance with the conditions of the listing.

*** * ***

2-3.5.1 Registers shall be constructed of metal or shall conform with the following:

(a) Registers shall be made of a material classified as 94 HB when tested as described in UL 94/96, *Standard for Safety Test for Flammability of Plastic Materials for Parts in Devices and Appliances*.

(b) Floor registers shall resist, without structural failure, a 200-lb (90.7-kg) concentrated load on a 2-in. (51-mm) diameter disc applied to the most critical area of the exposed face of the register. For this test, the register shall be at a temperature not less than 165°F (74°C) and shall be supported in accordance with the manufacturer's instructions.

*** * ***

2-3.5.3 Fittings connecting the registers to the duct system shall be constructed of metal or material that complies with the requirements of Class 0, Class 1, or Class 2 ducts in UL 181/96, *Standard for Safety Factory-Made Air Ducts and Air Connectors*.

*** * ***

4-1.1.3 Construction.

(a) Where the warm air supply is from a warm air furnace, heating panels shall be enclosed on all sides with material that is wholly noncombustible or that possesses a flame spread classification of not over 25 as determined in accordance with [NFPA 255, *Standard Method of Test of Surface Burning Characteristics of Building Materials*] RS 5-5. This enclosing material shall be attached securely to the building structure; joints and seams shall be substantially airtight. Braces and hangers inside the chamber shall be noncombustible.

(b) Where the warm air supply is from a steam or hot water heat exchanger, heating panels shall either comply with 4-1.1.3(a) or shall be enclosed on all sides with material not more flammable than 1-in. (25.4-mm) (nominal) wood boards. This enclosing material shall be attached securely to the building structure; joints and seams shall be substantially airtight. No single vertical heating panel shall serve more than one story.

*** * ***

4-1.12 Air filters shall have either a Class 1 or Class 2 rating in accordance with [UL 900, *Standard for Safety Air Filter Units*, 1994] RS 13-15.

*** * ***

4-1.3.3 Liquid adhesive coatings used on filters shall have a flash point not less than 325°F (163°C) in accordance with [ASTM D 93, *Standard Test Methods for Flash Point by Pensky-Martens Closed Cup Tester*] RS 14-13.

4-1.3.4 All air filters shall be kept free of excess dust and combustible material. Unit filters shall be renewed or cleaned when the resistance to airflow has increased to two times the original resistance or when the resistance has reached a value of recommended replacement by the manufacturer. A permanently installed draft gauge shall be provided for this purpose. Where the filters are of the automatic liquid adhesive type, sludge shall be removed from the liquid adhesive reservoir regularly.

4-1.4 Air-Cooling Equipment.

Mechanical refrigeration used with air duct systems shall be installed in accordance with [ANSI/ASHRAE 15, *Safety Code for Mechanical Refrigeration*] RS 13-6.

*** * ***

4-2 Electric Wiring and Equipment.

Electric wiring and equipment shall be adequate for safe operation and shall be installed in accordance with [NFPA 70, *National Electrical Code*®] the *New York City Electrical Code*. In addition, a disconnecting means shall be installed within sight and easy reach in the ungrounded leads of each power circuit to electrically operated components that are in unprotected locations and in other locations not readily accessible for service.

*** * ***

4-3.2 Fan Control for Stoker-Fired Furnaces.

Where a warm air furnace equipped with a fan to circulate the air is stoker-fired, it also shall be equipped with an automatic overrun control to start the fan when the air in the furnace bonnet or at the beginning of the main supply duct at a point not affected by radiated heat

reaches a temperature not higher than 200°F (93°C) after the stoker and fan (in its normal operation) have been shut down as a result of a satisfied thermostat. If a manual disconnect is installed in the air circulating fan electrical circuit, it shall be installed to deenergize both the fan and the stoker simultaneously. Solid fuel may be used only as permitted by Local Law 93/85.

*** * ***

4-3.4 Thermostatically Controlled, Hand-Fired, Solid-Fuel Burning Furnaces.

Hand-fired, solid-fuel burning furnaces on which the furnace draft is controlled by a thermostat shall be equipped with the following:

(a) A fail-safe 250°F (121°C) limit control installed not more than 10 in. (254 mm) above the top surface of the heat exchanger in a supply plenum that extends at least 12 in. (305 mm) above the top surface of the heat exchanger; and

(b) A barometric draft control operated by draft intensity and permanently set to limit the draft to a maximum intensity of 0.13 in. (32.4 Pa) of water gauge. A fail-safe limit control is a limit control that automatically checks the furnace in the event of power failure or shutoff or that automatically checks the furnace when a temperature of 250°F (121°C) is reached, whether or not power is available.

(c) Solid fuel may be used only as permitted by Local Law 93/85.

4-3.5 Air-Circulating Fan Controls.

Where a hand-fired, solid-fuel burning furnace is equipped with a fan to circulate the air, it shall be equipped with fan controls as required for stoker-fired furnaces by 4-3.2. Solid fuel may be used only as permitted by Local Law 93/85.

*** * ***

Chapter 5 Referenced Publications – Delete

Appendix A – Delete
Appendix B - Delete
****DOB 5-4-02;946-87 BCR; 938-80 BCR***

****REFERENCE STANDARD RS 14-2**

AGA/ANSI-Z223.1/NFiPA 54-1984 -National Fuel Gas Code and Addenda ANSI Z223.1a-1987.
*****946-87 BCR; 916-82 BCR; 938-80 BCR***

*****REFERENCE STANDARD RS 14-3**

ANSI/NFiPA No. 31 1983 -Standard for the Installation of Oil Burning Equipment.
Section 1-5 Air for combustion and ventilation.
******938-80 BCR***

****REFERENCE STANDARD RS 14-4**

ANSI/ASME Boiler and Pressure Vessel Code 1986.
*****946-87 BCR; 916-82 BCR; 938-80 BCR***
Section VIII Pressure Vessels.

****REFERENCE STANDARD RS 14-5A**

ANSI/ASME Boiler and Pressure Vessel Code 1986.
Section I Power Boilers
*Section IV Heating Boilers.

***Rule HG-614 LOW - WATER FUEL CUTOFF**

(a) Each automatically fired hot water boiler shall have an automatic low-water fuel cutoff which has been designed for hot water service, and it shall be so located as to automatically cut off the fuel supply when the surface of the water falls to the level established in (b) below. (see Fig. HG-703.2).

(b) As there is no normal waterline to be maintained in a hot water heating boiler, any location of the low- water fuel cutoff above the lowest safe permissible water level established by the boiler manufacturer is satisfactory.

(c) A coil-type boiler or a watertube boiler requiring forced circulation to prevent overheating of the coils or tubes shall have a flow-sensing device installed in the outlet piping in lieu of the low-water fuel cutoff required in (a) above to automatically cut off the fuel supply when the circulating flow is interrupted.

*****946-87 BCR; 916-82 BCR; 938-80 BCR***
****DOB 3-8-96***

†**REFERENCE STANDARD RS 14-5B**

UL 834 - 1980 - Electric Heating, Water Supply, and Power Boilers, and November 1982 Revision.
†1045-83 BCR

††REFERENCE STANDARD RS 14-6

ANSI-Z21.1-1982 - Household Cooking Gas Appliance, and Addenda Z21.1a-1982, Z21.1b-1984.
ANSI-Z21.1-1983 - Gas Hose Connectors for Portable Indoor Gas-Fired Equipment, and Addenda Z21.2a-1985.
ANSI-Z21.3-1982 - Hotel and Restaurant Gas Ranges and Unit Boilers.
ANSI-Z21.5.1-1982 - Gas Clothes Dryers, Volume I, Type 1 Clothes Dryers.
ANSI-Z21.5.2-1979 - Gas Clothes Dryers, Volume II, Type 2 Clothes Dryers, and Addenda Z21.5.2a-1981, Z21.5.2b-1982.
ANSI-Z21.8-1984 - Installation of Domestic Gas Conversion Burners.
ANSI-Z21.10.1-1984 - Gas Water Heaters, Volume I, Storage Water Heaters with Input Ratings of 75,000 BTU per Hour or Less, and Addenda Z21.10.1a-1982, Z21.10.1b-1986.
ANSI-Z21.10.3-1984 - Gas Water Heaters, Volume III Storage with Input Ratings above 75,000 BTU per Hour, Circulating and Instantaneous Water Heaters, and Addenda Z21.10.3a-1985, Z21.10.3b-1985.
ANSI-Z21.11.1-1983 - Gas Fired Room Heaters, Volume I, Vented Room Heaters, and Addenda Z21.11.1a-1985.
ANSI-Z21.11.2-1983 - Gas Fired Room Heaters, Volume II, Unvented Room Heaters, and Addenda Z21.11.2a-1984.
ANSI-Z21.12-1981 - Draft Hoods and Addenda Z21.12a-1983.
ANSI-Z21.13-1982 - Gas-Fired Low Pressure Steam and Hot Water Boilers, and Addenda Z21.13a.
ANSI-Z21.15-1979 - Manually Operated Gas Valves, and Addenda Z21.15a-1981, Z21.15b-1984.
ANSI-Z21.17-1984 - Domestic Gas Conversion Burners.
ANSI-Z21.19-1983 - Refrigerators Using Gas Fuel, and Addenda Z21.19a-1984.
ANSI-Z21.20-1985 - Automatic Gas Ignition Systems and Components.
ANSI-Z21.21-1974 - Automatic Valves for Gas Appliances, and Addenda Z21.21a-1977, Z21.21b-1981.
ANSI-Z21.22-1986 - Relief Valves and Automatic Gas Shut-Off Devices for Hot Water Supply Systems.
ANSI-Z21.23-1980 - Gas Appliances Thermostats, and Addenda Z21.23a-1985.
ANSI-Z21.24-1981 - Metal Connectors for Gas Appliances, and Addenda Z21.24a-1983, Z21.24b-1985.
ANSI-Z21.27-1974 - Hotel and Restaurant Gas Deep Fat Fryers, and Addenda Z21.27a-1975, Z21.27b-1978.
ANSI-Z21.28-1974 - Commercial Gas Baking and Roasting Ovens, and Addenda Z21.28a-1975, Z21.28b-1978.
ANSI-Z21.31-1975 - Gas Counter Appliances, and Addenda Z21.31a-1978.
ANSI-Z21.34-1971 - Gas-Fired Duct Furnaces, and Addenda Z21.34a-1974, Z21.34b-1974.
ANSI-Z21.40.1-1981 - Gas-Fired Absorption Summer Air Conditioning Appliances, and Addenda Z21.40.1a-1982.
ANSI-Z21.41-1978 - Quick-Disconnect Devices for Use with Gas Fuel, and Addenda Z21.41a-1981, Z21.41b-1983.
ANSI-Z21.42-1971 - Gas-Fired Illuminating Appliances, and Addenda Z21.42a-1973, Z21.42b-1981.
ANSI-Z21.44-1985 - Gas-Fired Gravity and Fan Type Direct Vent Wall Furnaces, and Addenda Z21.44a-1985.
ANSI-Z21.45-1985 - Flexible Connectors of Other than All Metal Construction for Gas Appliances, and Addenda Z21.45a-1987.
ANSI-Z21.46-1974 - Gas-Fired Kettles, Steam Cookers and Steam Generators, and Addenda Z21.46a-1975, Z21.46b-1978.
ANSI-Z21.47-1983 - Gas-Fired Central Furnaces (Except Direct Vent Central Furnaces), and Addenda Z21.47a-1985, Z21.47b-1986.
ANSI-Z21.48-1986 - Gas-Fired Gravity and Fan Type Floor Furnaces.
ANSI-Z21.49-1986 - Gas-Fired Gravity and Fan Type Vented Wall Furnaces.
ANSI-Z21.50-1986 - Vented Decorative Gas Appliances.
ANSI-Z21.52-1971 - Gas-Fired Single Firebox Boiler, and Addenda Z21.52a-1973.
ANSI-Z21.54-1979 - Gas Hose Connectors for Portable Outdoor Gas-Fired Appliances, and Addenda Z21.54a 1983, Z21.54b-1985.
ANSI-Z21.55-1979 - Gas-Fired Sauna Heaters, and Addenda Z21.55a-1980, Z21.55b-1981.
ANSI-Z21.56-1986 - Gas-Fired Pool Heaters.
ANSI-Z21.57-1982 - Recreational Vehicle Cooking Gas Appliances, and Addenda Z21.57a-1982, Z21.57b-1984.
ANSI-Z21.58-1982 - Outdoor Cooking Gas Appliances, and Addenda Z21.58a-1983, Z21.58b-1985.
ANSI-Z21.59-1974 - Gas-Fired High Pressure Steam and Hot Water Boilers.
ANSI-Z21.60-1982 - Decorative Gas Appliances for Installation in Vented Fireplaces, and Addenda Z21.60a-1982, Z21.60b-1984.
ANSI-Z21.64-1985 - Direct Vent Central Furnaces, and Addenda Z21.64a-1986.
ANSI-Z21.65-1978 - Separated Combustion System Central Furnaces.
ANSI-Z21.69-1979 - Connectors for Movable Gas Appliances, and Addenda Z21.69a-1983, Z21.69b-1985.
ANSI-Z83.2-1977 - Gas Atmosphere Generators.
ANSI-Z83.3-1971 - Gas Utilization Equipment in Large Boilers, and Addenda Z83.3a-1972, Z83.3b-1976.
ANSI-Z83.4-1985 - Direct Gas-Fired Make-Up Air Heaters, and Addenda Z83.4a-1986.
ANSI-Z83.6-1982 - Gas-Fired Infrared Heaters, and Addenda Z83.6a-1984, Z83.6b-1985.

ANSI-Z83.7-1974 - Gas-Fired Construction Heaters.
ANSI-Z83.8-1985 - Gas Unit Heaters, and Addenda Z83.8a-1986.
ANSI-Z83.9-1986 - Gas-Fired Duct Furnaces.
ANSI-Z83.11-1986 - Gas Food Service Equipment - Ranges and Unit Broilers.
ANSI-Z83.12-1986 - Gas Food Service Equipment - Baking and Roasting Ovens.
ANSI-Z83.13-1986 - Gas Food Service Equipment - Deep Fat Fryers.
ANSI-Z83.14-1986 - Gas Food Service Equipment - Counter Appliances.
ANSI-Z83.15-1986 - Gas Food Service Equipment - Kettles, Steam Cookers and Steam Generators.
ANSI/UL 815-1983 - Electric Sauna Heating Equipment, January 1986 Revision.
ANSI C33.87/UL 174-1983 - Household Electric Cooking Appliances, January 1986 Revision.
ANSI/UL 197-1982 - Commercial Electric Cooking Appliances, September 1986 Revision.
UL 252-1984 - Compressed Gas Regulators, May 1986 Revision.
ANSI Z96.2/UL 296-1980 - Oil Burners, August 1985 Revision.
ANSI B130.1/UL 343-1986 - Pumps for Oil-Burning Appliances.
UL 412-1980 - Refrigeration Unit Coolers, December 1984 Revision.
ANSI/UL 471-1985 - Commercial Refrigerators and Freezers, November 1985 Revision.
ANSI-C33.1/UL 499-1978 - Electric Heating Appliances, March 1985 Revision.
ANSI/UL 574-1980 - Electric Oil Heaters, May 1985 Revision.
UL 560-1986 - Electric Home-Laundry Equipment.
UL 586-1985 - Test Performance of High Efficiency, Particulates Air-Filters Units.
ANSI Z96.3/UL 726-1975 - Oil-Fired Boiler Assemblies, June 1986 Revision.
ANSI Z96.1/UL 727-1986 - Oil-Fired Central Furnaces, November 1986 Revision.
ANSI Z96.4/UL 729-1976 - Oil-Fired Floor Furnaces, December 1980 Revision.
ANSI Z96.5/UL 730-1974 - Oil-Fired Wall Furnaces, December 1980 Revision.
ANSI Z95.2/UL 731-1975 - Oil-Fired Unit Heaters, January 1985 Revision.
ANSI Z99.2/UL 732-1974 - Oil-Fired Water Heaters, January 1985 Revision.
UL 733-1975 - Oil-Fired Air Heaters and Direct-Fired Heaters, August 1985 Revision.
UL 795-1973 - Commercial-Industrial Gas-Heating Equipment, February 1986 Revision.
UL 834-1980 - Electric Heating, Water Supply and Power Boilers, October 1983 Revision.
UL 867-1981 - Electrostatic Air Cleaners.
ANSI-C33.75/UL 875-1983 - Electric Sauna Heating Equipment, October 1984 Revision.
UL 1025-1980 - Electric Air Heaters, October 1986 Revision.
UL 1042-1979 - Electric Baseboard Heating Equipment, May 1985 Revision.
ANSI C33.104/UL1096-1986 - Electric Central Air-Heating Equipment, July 1986 Revision.
UL 1206-1979 - Electric Commercial Clothes-Washing Equipment.
UL 1240-1979 - Electric Commercial Clothes-Drying Equipment, July 1984 Revision.
UL 1261-1981 - Electric Water Heaters for Pools and Tubs, April 1986 Revision.
UL 1453-1982 - Electric Booster and Commercial Storage Tank Water Heaters, May 1983 Revision.
UL 1555-1982 - Electric Coin-Operated Clothes Washing Machine.
UL 1556-1982 - Electric Coin-Operated Clothes-Drying Equipment, July 1984 Revision.
††946-87 BCR

*REFERENCE STANDARD RS 14-7

ANSI/ASTM-C64 1972 - Specifications for Refractories for Incinerators and Boilers (Reapproved 1977).
1045-83 BCR

**REFERENCE STANDARD RS 14-8

ANSI/ASTM-C401 1984 - Classification of Castable Refractories.
946-87 BCR; 938-80 BCR

*REFERENCE STANDARD RS 14-9

ANSI/ASTM-C64 1972 - Specifications for Refractories for Incinerators and Boilers (Reapproved 1977).
1045-83 BCR

**REFERENCE STANDARD RS 14-10

ANSI/ASTM-C612 1983 - Standard Specification for Mineral Fiber Block and Board Thermal Insulation.
946-87 BCR; 938-80 BCR

REFERENCE STANDARD RS 14-11

ASTM-E84 1961 - Method of Test for Surface Burning Characteristics of Building Materials.

***REFERENCE STANDARD RS 14-12**

ANSI/ASTM-D396 1984 - Specification for Fuel Oils.

***946-87 BCR; 1045-83 BCR*

*REFERENCE STANDARD RS 14-13**

ANSI/ASTM-D93 1980 - Method of Test for Flash Point, by Pensky-Martens Closed Tester.

**1045-83 BCR*

*REFERENCE STANDARD RS 14-14**

ANSI/ASTM-C105 1947 - Specifications for Ground Fire Clay Mortar for Laying-up Fireclay brick (Reapproved 1981)

ANSI/ASTM-C64 1972 - Specifications for Refractories for Incinerators and Boilers (Reapproved 1977)

**1045-83 BCR*

REFERENCE STANDARD RS 14-15
MINIMUM INSTALLATION FOR HEAT PRODUCTION EQUIPMENT[a]

EQUIPMENT		CLEARANCES (in.)				
Residential Type Equipment for Installation in Large Room[b]		Above Top of Casing or Equipment	From Top and Sides of Warm-Air Bonnet or Plenum	From Front[c]	From Back	From Sides
Boilers & Water Heaters - Steam boilers – 15 psi						
Water boilers – 250°F	Automatic oil or comb. gas-oil	6	—	24	6	6
Water heaters – 200°F	Automatic gas……..	6	—	18	6	6
(all water walled or jacketed)	Solid…….	6	—	48	6	6
Furnaces, Central – Gravity, upflow, downflow, horizontal and duct. Warm-air 250°F max.	Automatic oil or comb, gas-oil……..	6	6	24	6	6
	Automatic gas…….	6	6	18	6	6
	Solid……	18	18	48	18	18
	Electric……	6	6	18	6	6
Furnaces, Floor For mounting in combustible floor	Automatic oil or comb. gas-oil……..	36	—	12	12	12
	Automatic gas……..	36	—	12	12	12
Heat Exchanger — Steam – 15 psi max.	……	1	1	1	1	1
Hot water – 250°F max .	……	1	1	1	1	1
Room Heaters — Circulating type	Oil and solid. ……..…….	36	—	24	12	12
	Gas……..….	36	—	24	12	12
(vented or unvented)	Oil and solid…….	36	—	36	36	36
Radiant type	Gas……..…….	36	—	36	18	18
(vented or unvented)	Gas with double metal or ceramic back……	36	—	36	12	18
Radiators — Steam or hot water	Gas…….	36	—	6	6	6
Ranges —					Firing	Opp.
Cooking Stoves	Oil…….……...	30[f]	—	—	9	24 18
(vented or unvented)	Gas……...	30[f]	—	—	6	6 6
	Solid-clay-lined firepot…	30[f]	—	—	24	24 18
	Solid-unlined firepot…..	30[f]	—	—	36	36 18
	Electric……	30[f]	—	—	6	6
Clothes Dryers that conform to applicable standards	Gas……..	6	—	24	6	6
	Electric……..……...	6	—	24	0	0

EQUIPMENT		CLEARANCES (in.)				
Commercial-Industrial Type Low Temperature Equipment (Any and all physical sizes except as noted)		Above Top of Casing or Equipment[e]	From Top and Sides of Warm-Air Bonnet or Plenum	From Front	From Back[e]	From Sides[e]
Boilers and Water Heaters-100 cu. ft. or less (any psi steam)	All fuels…….	18	—	48	18	18
Any size (50 psi or less)	All fuels…….	18	—	48	18	18

Unit heaters — Floor mounted or suspended (any size)	Steam or Hot Water- Oil or comb. gas-oil……	1 6	— —	— 24	1 18	1 18
Suspended (100 cu. ft. or less)	Gas……	6	—	18	18	18
Suspended (100 cu. ft. or less)	All fuels……	18	—	48	18	
Suspended (over 100 cu. ft.)	All fuels……	18	—	48		
Floor mounted (any size)	…….					
Ranges — Floor mounted	All fuels……	48	—	48	18	18
Other Low Temperature Industrial Equipment — floor mounted or suspended	All fuels…….	18	18	48	18	18

(see footnotes, at end of table.)

EQUIPMENT		CLEARANCES (in.)				
Commercial-Industrial Medium Temperature Equipment		Above Top of Casing or Equipment[e]	From Top and Sides of Warm-Air Bonnet or Plenum	From Front	From Back[e]	From Sides[e]
Boilers and water heaters- Over 50 psi or Over 100 cu. Ft.	All fuels……..	48	—	96	36	36
Other med. Temp. industrial equipment-All sizes	All fuels……..	48	36	96	36	36
Incinerators — All sizes	All fuels……..	48	—	96	36	36
Industrial type High-Temperature Equipment						
High temperature equipment All sizes	All fuels…….	180	—	360	120	120

Notes for Reference Standard RS 14-15:

a See reference standard RS 14-16 for reduction of clearance.

b Large rooms are those that are large in comparison to the size of the equipment and have a volume equal to at least 12 times the total volume of a furnace and at least 16 times the total volume of a boiler. If the actual ceiling height of a room is greater than 8 ft., the volume of a room shall be figured on the basis of a ceiling height of 8 ft.

c The minimum dimension shall be that necessary for servicing the equipment, including access for cleaning and normal care, tube removal, etc.

d If the equipment is encased in brick, the 18 in. clearance above and at sides and back may be reduced to not less than 12 in.

e If the equipment is encased in brick the clearance above may be reduced to not less than 36 in., and at sides and back may be reduced to not less than 18 in.

f To combustible material or metal cabinet. If the underside of such combustible material or metal cabinet is protected with asbestos millboard at least 1/4 in. thick covered with sheet metal of not less than no. 28 U.S. Standard guage*, the distance may be reduced to not less than 24 in.

**** As enacted but "gage" probably intended.***

REFERENCE STANDARD RS 14-16
REDUCED MINIMUM CLEARANCES FOR EQUIPMENT, USING SPECIFIED FORMS OF PROTECTION [a]

Specified Form of Protection	Reduced Clearances (in.)							
	Where the Required Clearance with no Protection is:							
	36 in.		18 in.		12 in.		6 in.	
	Above	Side and Rear	Above	Side and Rear	Above	Side and Rear	Above	Side and Rear
(a)1/4 in. asbestos millboard spaced out 1 in.[b]	30	18	15	9	9	6	3	2
(b) 28 gauge *sheet metal on ¼ in. asbestos millboard	24	18	12	9	9	6	3	2
(c) 28 gauge* sheet metal spaced out 1 in.[b]	18	12	9	6	6	4	2	2
(d) 28 gauge* sheet metal on 1/8 in. asbestos millboard spaced out 1 in.[b]	18	12	9	6	6	4	2	2
(e)1 ½ in. asbestos cement covering on heating equipment	18	12	9	6	6	4	2	1
(f)1/4 in. asbestos millboard on 1 in. mineral fiber bats reinforced with wire mesh or equivalent	18	12	6	6	4	4	2	2
(g) 22 gauge* sheet metal on 1 in. mineral fiber bats reinforced with wire or equivalent	18	12	4	3	2	2	2	2
(h)1/4 in. asbestos cement board or ¼ in. asbestos millboard	36	36	18	18	12	12	4	4
(i)1/4in. cellular asbestos	36	36	18	18	12	12	3	3

Notes:

[a] Except for the protection described in (e), all clearances shall be measured from the outer surface of the equipment to the combustible material disregarding any intervening protection applied to the combustible material.

[b] Spacers shall be of non combustible material. Applicable to the combustible material, unless otherwise specified, and covering all surfaces within the distance specified as the required clearance with no protection.

As enacted but probably "gage" intended.

REFERENCE STANDARD RS 14-17
MINIMUM EQUIPMENT FOUNDATION MOUNTINGS REQUIREMENTS
COMBUSTIBLE CONSTRUCTION

			Extention of Protection Beyond Equipment	
Exceptions Base (in.)	Open Clearance Under Applying To:	Type of Protection Mounted on Combustible Surface	All Sides (in.)	Solid Fuel-Firing Side at Ash Removal Side (in.)
Low temperature equipment	18	1/4 in. asbestos	0	18
	8	3/8 in. asbestos millboard covered with no less than 0.24 Mfg's Standard *Gauge Sheet	6	18
	4	4 in. of hollow clay or concrete tile	0	18
	0	2 courses of 4 in. hollow clay or concrete tile covered with 3/16 in. steel plate	0	18
Medium temperature equipment	24	4 in. of hollow clay or concrete tile	0	18
Boilers, furnaces, and warm air furnaces for heating one-family	4	1/4 in. asbestos millboard covered with not less than 0.24 Mfg's Standard *Gauge Sheet		
dwellings; and to floor mounted unit heaters	0	4 in. of hollow clay or concrete tile	0	18
Commercial or restaurant type	18	A metal baffle between burner and floor	0	18
cooking equipment	8	3/8 in. asbestos millboard	6	18
	4	4 in. of hollow clay or concrete tile	0	18
	0	2 courses of 4 in. hollow clay or concrete tile covered with 3/16 in. steel plate	0 0	18 18
Domestic type floor mounted	18	A metal baffle between burner and floor	0	—
cooking and rm. heating eqpt.,.	4	1/2 in. asbestos millboard covered with not less than No. 24 Mfg's Standard *Gauge Sheet	0	18
such as, stoves, heaters, fuel fired steam or hot water radiators and hot water				

Notes for Combustible Construction:

Hollow tile shall be set with ends unsealed and joints matched so as to provide for the circulation of air through the tile. Where two courses of hollow tile are required, the tiles courses shall be laid at right angles to each other with the ends unsealed and joints matched so as to provide for the circulation of air through each course.

Low temperature equipment with a water cooled base and a grate area of less than 3 sq. ft., or low temperature equipment in which the combustion chamber is located at least 12 in. above the floor, may rest directly on a sheet metal base of not less than no. 14 manufacturer's standard *gauge sheet steel without heat insulation on combustible construction.

Where the floor protection used does not provide a monolithic surface of steel, concrete, or cement, the side or surface where ashes are removed or where traffic or other usage would wear the protection away shall be covered with no. 24 manufacturer's standard *gauge sheet steel or equivalent material.

As enacted but "gage"probably intended.

MINIMUM EQUIPMENT FOUNDATION MOUNTINGS REQUIREMENTS

NONCOMBUSTIBLE CONSTRUCTION

Equipment Classification	Fuels	Fire Resistance Rating	Extension Beyond Equipment
Low Temperature	All fuels	2 hr.	18 in. on all sides
Medium Temperature	Gas and liquid fuels	3 hr.	3 ft. on all sides
	Solid fuels	3 hr	3 ft. on all sides and 8 ft. on firing side and ash removal side
High Temperature	All fuels	4 hr.	10 ft. on all sides and 30 ft. at front or side where hot products are removed

***REFERENCE STANDARD RS 14-18**

ANSI/NFiPA 211-1988 - Standard for chimneys, fireplaces, vents and solid fuel burning appliances.
Local Law 80-1989

***REFERENCE STANDARD RS 14-19**

UL 127-1988 - Standard for factory-built fireplaces, as modified by reference standard RS 15-15.
Local Law 80-1989

***REFERENCE STANDARD RS 14-20**

ANSI/UL 737-1988 - Standard for fireplace stoves.
Local Law 80-1989

***REFERENCE STANDARD RS 14-21**

UL 1482-1988 - Standard for room heaters, solid fuel type (September 1988 Revision).
Local Law 80-1989

***REFERENCE STANDARD RS 14-22**

SMACNA 1992 Fibrous Glass Duct Construction Standard; SMACNA 1995 HVAC Duct Construction Standards — Metal and Flexible; and SMACNA 1985 HVAC Air Duct Leakage Test Manual; as modified.

Modifications:

1) Ducts shall be constructed in accordance with Section 2-3.1 of Reference Standard RS 13-1; Chapter 2 of Reference Standard RS 13-4; or Chapter 2 of Reference Standard RS 14-1; as applicable.

2) The New York State Energy Conservation Construction Code sets forth requirements for leakage testing of ducts which supercede those contained in this Reference Standard. The leakage testing requirements of this Reference Standard apply to buildings exempted from compliance with the New York State Energy Conservation Construction Code.
DOB 5-4-02; Local Law 80-1989

REFERENCE STANDARD RS-15
CHIMNEYS AND GAS VENTS
* LIST OF REFERENCED NATIONAL STANDARDS

AGA/ANSI		
Z223.1 NFiPA	National Fuel Gas Code, and Addenda Z223.1a-1987	1984
ANSI- Z21.1	Household Cooking Gas Appliances, and Addenda Z21.1a-1982, Z21.1b-1984	1982
ANSI- Z21.2	Gas Hose Connectors for Portable Indoor Gas-Fired Equipment, and Addenda Z21.2a-1985, Z21.b-1987	1983
ANSI- Z21.3	Hotel and Restaurant Gas Ranges and Unit Broilers	1982
ANSI- Z21.5.1	Gas Clothes Dryers, Volume I, Type 1 Clothes Dryers	1982
ANSI- Z21.5.2	Gas Clothes Dryers, Volume II, Type 2 Clothes Dryers, and Addenda Z21.5.2a-1981, Z21.5.2b-1982	1979
ANSI- Z21.8	Installation of Domestic Gas Conversion Burners	1984
ANSI- Z21.10.1	Gas Water Heaters, Volume I - Storage Water Heaters with Input Ratings of 75,000 BTU per Hour or Less	1987
ANSI- Z21.10.3	Gas Water Heaters, Volume III - Storage with Input Ratings above 75,000 BTU per Hour, Circulating and Instantaneous Water Heaters	1987
ANSI- Z21.11.1	Gas-Fired Room Heaters, Volume I, Vented Room Heaters, and Addenda Z21.11.1a-1985	1983
ANSI- Z21.11.2	Gas-Fired Room Heaters, Volume II, Unvented Room Heaters, and Addenda Z21.11.2a-1984	1983
ANSI- Z21.12	Draft Hoods, and Addenda Z21.12a-1983	1981
ANSI- Z21.13	Gas-Fired Low Pressure Steam and Hot Water Boilers, and Addenda Z21-13a-1983	1982
ANSI- Z21.15	Manually Operated Gas Valves, and Addenda Z21.15a-1983, Z21.15b-1984	1979
ANSI- Z21.17	Domestic Gas Conversion Burners	1984
ANSI- Z21.19	Refrigerators Using Gas Fuel, and Addenda Z21.19a-1984	1983
ANSI- Z21.20	Automatic Gas Ignition Systems and Components, and Addenda Z21.20a-1987	1985
ANSI- Z21.21	Automatic Valves for Gas Appliances, and Addenda Z21.21a-1977, Z21.21b-1981	1974
ANSI- Z21.22	Relief Valves and Automatic Gas Shut Off Devices for Hot Water Supply Systems	1986
ANSI- Z21.23	Gas Appliance Thermostats, and Addenda Z21.23a-1985	1980
ANSI- Z21.24	Metal Connectors for Gas Appliances	1987
ANSI- Z21.27	Hotel and Restaurant Gas Deep Fat Fryers, and Addenda Z21.27a-1975, Z21.27b-1978	1974
ANSI- Z21.28	Commercial Gas Baking and Roasting Ovens, and Addenda Z21.28a-1975, Z21.28b-1978	1974
ANSI- Z21.40.1	Gas-Fired Absorption Summer Air Conditioning Appliances, and Addenda Z21.40.1a-1982	1981
ANSI- Z21.41	Quick-Disconnect Devices for Use with Gas Fuel, and Addenda Z21.41a-1981, Z21.41b-1983	1978
ANSI- Z21.42	Gas-Fired Illuminating Appliances, and Addenda Z21.42a-1973, Z21.42b-1981	1971
ANSI- Z21.44	Gas-Fired Gravity and Fan Type Direct Vent Wall Furnaces, and Addenda Z21.44a-1985	1985
ANSI- Z21.45	Flexible Connectors of Other than All Metal Construction for Gas Appliances, and Addenda Z21.45a 1987	1985
ANSI- Z21.46	Gas-Fired Kettles, Steam Cookers and Steam Generators and Addenda Z21.46a-1975, Z21.46b-1978	1974
ANSI- Z21.47	Gas-Fired Central Furnaces (Except Direct Vent Central Furnaces)	1987
10 CRF Part 430	Test Procedures for Furnaces	1980
ANSI- Z21.48	Gas-Fired Gravity and Fan Type Floor Furnaces	1986
ANSI- Z21.49	Gas-Fired Gravity and Fan Type Vented Wall Furnaces	1986
ANSI- Z21.50	Vented Decorative Gas Appliances	1986

ANSI- Z21.52	Gas-Fired Single Firebox Boiler, and Addenda Z21.52a-1973..... 1971
ANSI- Z21.54	Gas Hose Connectors for Portable Outdoor Gas-Fired Appliances, and Addenda Z21.53a-1983, Z21.54b-1985.....1979
ANSI- Z21.55	Gas-Fired Sauna Heaters, and Addenda Z21.55a-1980, Z21.55b-1981.....1979
ANSI- Z21.56	Gas-Fired Pool Heaters and Addenda Z21.56a-1987.....1986
ANSI- Z21.57	Recreational Vehicle Cooking Gas Appliances, and Addenda Z21.57a-1982, Z21.57b-1984..1982
ANSI- Z21.58	Outdoor Cooking Gas Appliances.....1987
ANSI- Z21.59	Gas-Fired High Pressure Steam and Hot Water Boilers.....1974
ANSI- Z21.60	Decorative Gas Appliances for Installation in Vented Fireplaces, and Addenda Z21.60a-1982, Z21.60b-1984.....1981
ANSI- Z21.64	Direct Vent Central Furnaces, and Addenda Z21.64a-1986, Z21.64b-1987.....1985
ANSI- Z21.65	Separated Combustion System Central Furnaces.....1978
ANSI- Z83.2	Gas Atmosphere Generators.....1977
ANSI- Z83.3	Gas Utilization Equipment in Large Boilers, and Addenda Z83.3a-1972, Z83.3b-1976.....1971
ANSI- Z83.4	Direct Gas-Fired Make-Up Air Heaters, and Addenda Z83.4a-1986.....1985
ANSI- Z83.6	Gas-Fired Infrared Heaters, and Addenda Z83.6a-1984, Z83.6b-1985.....1982
ANSI- Z83.7	Gas-Fired Construction Heaters.....1974
ANSI- Z83.8	Gas Unit Heaters, and Addenda Z83.8a-1986.....1985
ANSI-Z83.9	Gas-Fired Duct Furnaces.....1986
ANSI-Z83.11	Gas Food Service Equipment -Ranges and Unit Broilers.....1986
ANSI-Z83.12	Gas Food Service Equipment -Baking and Roasting Ovens.....1986
ANSI-Z83.13	Gas Food Service Equipment -Deep Fat Fryers.....1986
ANSI-Z83.14	Gas Food Service Equipment -Counter Appliances.....1986
ANSI-Z83.15	Gas Food Service Equipment -Kettles, Steam Cookers, and Steam Generators..... 1986
ANSI/UL 103	Standard for Chimneys, Factory-Built Residential Type and Building Heating Appliances (February 1989 Revision)..... 1988
ANSI/UL 441	Standard for Gas Vents.....1986
ANSI/UL 710	Grease Extractors for Exhaust Ducts.....1981
ANSI/UL 959	Standard for Medium Heat Appliance Factory-Built Chimneys (August 1988 Revision)....1986
UL 103 TYPE HT	Standard for Low Heat Appliance Chimneys with High Temperature Tests Added.....1983
UL 127	Standard for Factory-Built Fireplaces, as Modified.....1988
UL 795	Commercial Industrial Gas-Heating Equipment, February 1982 Revision.....1973
UL 1777	Chimney Liners.....1988
ULC S-629M	Standard for 650^{o}C Factory-Built Chimneys.....1981
ANSI/NFiPA 211	Chimneys, Fireplaces and Vents.....1984
ANSI/NFiPA 211	Standard for Chimneys, Fireplaces, Vents and Solid Fuel Burning Appliances..... 1988
ANSI/ASTM C105	Specification for Ground Fireclay as a Refractory Mortar for Laying Up Fireclay Brick (Reapproved 1981).....1947
ANSI/ASTM-C270	Standard Specification for Mortar for Unit Masonry.....1988
ANSI/ASTM-C315	Specifications for Clay Flue Linings (Reapproved 1983) 1978c
ANSI/ASTM-C401	Classification of Castable Refractories.....1984
ANSI/ASTM-C64	Specifications for Refractories for Incinerators and Boilers (Reapproved 1977).....1972
ANSI/ASTM-C279	Specifications for Chemical Resistant Masonry.....1979

Note: Wherever in these standards reference is made to the "National Electrical Code"

the work so covered shall meet the requirements of the Electrical Code of the City of New York.

947-87 BCR; Local Law 80-1989

**REFERENCE STANDARD RS 15-1

AGA/ANSI-Z223.1/ NFiPA No. 54-1984 - National Fuel Gas Code, and Addenda Z223.1a-1987.
947-87 BCR

**REFERENCE STANDARD RS 15-2

ANSI-Z21.1-1982—Household Cooking Gas Appliance, and Addenda Z21.1a-1982, Z21.1b-1984.
ANSI-A21.2-1983—Gas Hose Connectors for Portable Indoor Gas-Fired Equipment, and Addenda Z21.2a-1985, Z21.2b-1987.
ANSI-Z21.3-1982—Hotel and Restaurant Gas Ranges and Unit Broilers.
ANSI-Z21.5.1-1982—Gas Clothes Dryers, Volume I, Type 1 Clothes Dryers.
ANSI-Z21.5.2-1979—Gas Clothes Dryers Volume II, Type 2 Clothes Dryers, and Addenda Z21.5.2a-1981, Z21.5.2b-1982.
ANSI-Z21.8-1984—Installation of Domestic Gas Conversion Burners.
ANSI-Z21.10.1-1987—Gas Water Heaters, Volume I, Storage Water Heaters with Input Ratings of 75,000 BTU per Hour or Less.
ANSI-Z21.10.3-1987—Gas Water Heaters, Volume III, Storage with Input Ratings above 75,000 BTU per Hour, Circulating and Instantaneous Water Heaters.
ANSI-Z21.11.1-1983—Gas-Fired Room Heaters, Volume I, Vented Room Heaters, and Addenda Z21.11.1a-1985.
ANSI-Z21.11.2-1983—Gas-Fired Room Heaters, Volume II, Unvented Room Heaters, and Addenda 1.11.2a-1984.
ANSI-Z21.12-1981—Draft Hoods, and Addenda Z21.12a-1983.
ANSI-Z21.13-1982—Gas-Fired Low Pressure Steam and Hot Water Boilers, and Addenda Z21.13a-1983.
ANSI-Z21.15-1979—Manually Operated Gas Valves, and Addenda Z21.15a-1981, Z21.15b-1984.
ANSI-Z21.17-1984—Domestic Gas Conversion Burners.
ANSI-Z21.19-1983—Refrigerators Using Gas Fuel, and Addenda Z21.19a-1984.
ANSI-Z21.20-1985—Automatic Gas Ignition Systems and Components, and Addenda Z21.20a-1987.
ANSI-Z21.21-1974—Automatic Valves for Gas Appliances, and Addenda Z21.21a-1977, Z21.21b-1981.
ANSI-Z21.22-1986—Relief Valves and Automatic Gas Shut off Devices for Hot Water Supply Systems.
ANSI-Z21.23-1980—Gas Appliance Thermostats, and Addenda Z21.23a-1985.
ANSI-Z21.24-1987—Metal Connectors for Gas Appliances.
ANSI-Z21.27-1974—Hotel and Restaurant Gas Deep Fat Fryers, and Addenda Z21.27a-1975, Z21.27b-1978.
ANSI-Z21.28-1974—Commercial Gas Baking and Roasting Ovens, and Addenda Z21.28a-1975, Z21.28b-1978.
ANSI-Z21.40.1-1981—Gas-Fired Absorption Summer Air Conditioning Appliances, and Addenda Z21.40.1a-1982.
ANSI-Z21.41-1978—Quick-Disconnect Devices for Use with Gas Fuel, and Addenda Z21.41a-1981, Z21.41b-1983.
ANSI-Z21.42-1971—Gas-Fired Illuminating Appliances, and Addenda Z21.42a-1973, Z21.42b-1981.
ANSI-Z21.44-1985—Gas-Fired Gravity and Fan Type Direct Vent Wall Furnaces, and Addenda Z21.44a-1985.
ANSI-Z21.45-1985—Flexible Connectors of Other than All Metal Construction for Gas Appliances, and Addenda Z21.45a-1987.
ANSI-Z21.46-1974—Gas-Fired Kettles, Steam Cookers and Steam Generators, and Addenda Z21.46a-1975, Z21.46b-1978.
10 CFR Part 430-1980- Test Procedures for Furnaces.
ANSI-Z21.47-1987—Gas-Fired Central Furnaces (Except Direct Vent Central Furnaces).
ANSI-Z21.48-1986—Gas-Fired Gravity and Fan Type Floor Furnaces.
ANSI-Z21.49-1986—Gas-Fired Gravity and Fan Type Vented Wall Furnaces.
ANSI-Z21.50-1986—Vented Decorative Gas Appliances.
ANSI-Z21.52-1971—Gas-Fired Single Firebox Boiler, and Addenda Z21.52a-1973.
ANSI-Z21.54-1979—Gas Hose Connectors for Portable Outdoor Gas-Fired Appliances, and Addenda Z21.54a-1983, Z21.54b-1985.
ANSI-Z21.55-1979—Gas-Fired Sauna Heaters, and Addenda Z21.55a-1980, Z21.55b-1981.
ANSI-Z21.56-1986—Gas-Fired Pool Heaters.
ANSI-Z21.57-1982—Recreational Vehicle Cooking Gas Appliances, and Addenda Z21.57a-1982, Z21.57b-1984
ANSI-Z21.58-1987—Outdoor Cooking Gas Appliances.
ANSI-Z21.59-1974—Gas-Fired High Pressure Steam and Hot Water Boilers.
ANSI-Z21.60-1981—Decorative Gas Appliances for Installation in Vented Fireplaces, and Addenda Z21.60a-1982, Z21.60b-1984.
ANSI-Z21.64-1985—Direct Vent Central Furnaces, and Addenda Z21.64a-1986, Z21.64b-1987.

ANSI-Z21.65-1978—Separated Combustion System Central Furnaces.
ANSI-Z83.2-1977—Gas Atmosphere Generators.
ANSI-Z83.3-1971—Gas Utilization Equipment in Large Boilers, and Addenda Z83.3a-1972, Z83.3b-1976.
ANSI-Z83.6-1982—Gas-Fired Infrared Heaters, and Addenda Z83.6a-1984, Z83.6b-1985.
ANSI-Z83.7-1974—Gas-Fired Construction Heaters.
ANSI-Z83.8-1985—Gas Unit Heaters, and Addenda Z83.8a-1986.
ANSI-Z83.9-1986—Gas-Fired Duct Furnaces.
ANSI-Z83.11-1986—Gas Food Service Equipment - Ranges and Unit Broilers.
ANSI-Z83.12-1986—Gas Food Service Equipment - Baking and Roasting Ovens.
ANSI-Z83.13-1986—Gas Food Service Equipment - Deep Fat Fryers.
ANSI-Z83.14-1986—Gas Food Service Equipment - Counter Appliances.
ANSI-Z83.15-1986—Gas Food Service Equipment - Kettles, Steam Cookers and Steam Generators.
ANSI/UL 710-1981—Grease Extractors for Exhaust Ducts.
UL 795-1973—Commercial-Industrial Gas-Heating Equipment, February 1982 Revision.
ANSI/NFiPA 211-1984—Chimneys, Fireplaces and Vents
***** 947-87 BCR***

*** REFERENCE STANDARD RS 15-3**
ANSI/ASTM-C270 1988—Standard Specification for Mortar for Unit Masonry.
**** 947-87 BCR; 1050-83 BCR; Local Law 80-1989***

† REFERENCE STANDARD RS 15-4
ANSI/ASTM-C315 1978c—Specifications for Clay Flue Linings (Reapproved 1983).
† 947-87 BCR; 1050-83 BCR

**** REFERENCE STANDARD RS 15-5**
ANSI/ASTM-C401 1984—Classification for Castable Refractories.
***** 947-87 BCR; 939-80 BCR***

***** REFERENCE STANDARD RS 15-6**
ANSI/ASTM-C64 1972—Specifications for Refractories for Incinerators and Boilers (Reapproved 1977).
ANSI/ASTM C105-1947—Specifications for Ground Fireclay as a Refractory Mortar for Laying Up Fireclay Brick (Reapproved 1981).
******1050-83 BCR; Local Law 80-1989***

*** REFERENCE STANDARD RS 15-7**
ANSI/ASTM-C64 1972—Specifications for Refractories for Incinerators and Boilers (Reapproved 1977).
****1050 – 83 BCR***

*** REFERENCE STANDARD RS 15-8**
ANSI/ASTM-C279 1979—Specifications for Chemical-Resistant Masonry Units.
****1050 – 83 BCR***

**** REFERENCE STANDARD RS 15-8[A]†**
ANSI/UL 103-1988—Standard for Chimneys, Factory-Built, Residential Type and Building Heating Appliances (February 1989 Revision).
***** 1050-83 BCR: Local Law 80-1989***
†Copy in brackets not enacted but probably intended.

***** REFERENCE STANDARD RS 15-9**
UL 103 Type HT-1988—Standard for Low Heat Appliance Chimneys With High Temperature Tests Added (February 1989 Revision).
****** Local Law 80-1989***

***** REFERENCE STANDARD RS 15-10**
ANSI/UL 959-1986—Standard for Medium Heat Appliance Factory-Built Chimneys (August 1988 Revision).
*** ***Local Law 80-1989***

***** REFERENCE STANDARD RS 15-11**
Factory-built Chimneys, 1400 Degrees Fahrenheit.
1. Application. Factory-built 1400 degree Fahrenheit chimneys are intended for venting fuel gases, at a temperature not exceeding 1400 degrees Fahrenheit under continuous operating conditions, from building heating appliances and other low heat appliances as specified in the Chimney Selection Chart of the National Fire Protection Association

Standard No. 211.
2. Installation. These chimneys are to be installed in accordance with the installation instructions provided with each chimney assembly. They are not to be enclosed within combustible construction, but an interior chimney is to be enclosed in a noncombustible fire resistant shaft of appropriate size and rating where the chimney extends through any story of a building above that in which the connected appliance is located. An unenclosed chimney may be placed adjacent to walls of combustible construction at the clearances specified for each chimney section in the individual listing and acceptance and in article 15 of this code.
3. Chimney system. Each 1400 degree Fahrenheit factory-built chimney consists of one or more chimney sections, a chimney cap, lateral supports, thimble and flashing assembly as needed and other parts as specified in the installation instructions provided with each chimney system.
4. Standards. The equipment shall comply with the following standards:

ANSI/UL 103-1988—Standard for chimneys, factory-built, residential type and building heating appliances (February 1989 revision).

ANSI/UL 959-1986—Standard for medium heat appliance factory-built chimneys.

5. Identification. Equipment listed and accepted by this standard shall be identified with the following: "1400 Degree Fahrenheit Chimney Part."

****** Local Law 80-1989***

*** **REFERENCE STANDARD RS 15-12**

ULC S629M-1981—Standard for 650^0C Factory-Built Chimneys.

****** Local Law 80-1989***

*** **REFERENCE STANDARD RS 15-13**

ANSI/UL 441-1986 - Standard for Gas Vents.

****** Local Law 80-1989***

*** **REFERENCE STANDARD RS 15-14**

ANSI/NFiPA 211-1988 - Standard for Chimneys, Fireplaces, Vents and Solid Fuel Burning Appliances.

****** Local Law 80-1989***

*** **REFERENCE STANDARD RS 15-15**

UL 127-1988 - Standard for Factory-Built Fireplaces, as Modified.

Modifications. The provisions of UL 127-1988 shall be subject to the following modifications:
1.6 These requirements also cover fixed blowers and other electrical accessories for factory-built fireplaces, rated at 600 volts or less, and intended to be employed in ordinary locations in accordance with the New York City Electrical Code.
1.7 The factory-built chimneys servicing factory-built fireplaces covered by these requirements shall be installed only in buildings in residential occupancy groups J-2 and J-3 not more than forty feet or three stories in height when used with a 1700 degree Fahrenheit chimney.

****** Local Law 80-1989***

*** **REFERENCE STANDARD RS 15-16**

UL 1777-1988 - Standard for Chimney Liners.

******Local Law 80-1989***

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REFERENCE STANDARDS RS-16
PLUMBING AND GAS PIPING
*LIST OF REFERENCED NATIONAL STANDARDS

ANSI-A21.4	Cement Mortar Lining for Cast Iron Pipe and Fittings	1964
ANSI-A21.6	Cast-Iron Pipe Centrifugally Cast in Metal Molds for Water or Other Liquids	1962
ANSI-A21.8	Cast-Iron Pipe Centrifugally Cast in Sand-Lined Molds for Water or Other Liquids	1962
ANSI-A40.4	Air Gaps in Plumbing Systems	1942
ANSI-A40.5	Threaded Cast Iron Pipe for Drainage, Vent, and Waste Services	1943
ANSI-A40.6	Backflow Preventers in Plumbing Systems	1943
ANSI-106.1	Standard and Extra Strength Perforated Clay Pipe, Specifications for	1962
ANSI-A106.3	Standard Strength Clay Sewer Pipe, Specifications for	1965
**ANSI/AHAM FWD-1		1992
ANSI/ASME A112.18.1M	Finished and Rough Brass Plumbing Fixture Fittings	1979
ANSI/ASME A112.19.1M	Enameled Cast Iron Plumbing Fixtures	1987
ANSI A112.19.2M	Vitreous China Plumbing Fixtures	1982
ANSI/ASME A112.19.3M	Stainless Steel Plumbing Fixtures (Designed for Residential Use)	1987
ANSI/ASME A112.19.4M	Porcelain Enameled Formed Steel Plumbing Fixtures	1984
ANSI-B2.1	Pipe Threads (Except Dryseal) (Partial Revision of B2.1-1945)	1968
ANSI-B16.3	Malleable-Iron Screwed Fittings, 150 and 300 lb. (Revision and Consolidation of B16.3-1951 and B16.19-1951)	1977
ANSI-B16.4	Cast-Iron Screwed Fittings, 125 and 250 lbs.	1977
ANSI-B16.12	Cast-Iron Screwed Drainage Fittings	1976
ANSI-B16.15	Cast-Bronze Screwed Fittings, 125 and 250 lb. (Revision and Consolidation of B16.15-1958 and B16.17-1949)	1978
ANSI-B16.18	Cast-Bronze Solder-Joint Pressure Fittings	1978
ANSI-B16.22	Wrought Copper and Bronze Solder-Joint Drainage Fittings	1973
ANSI-B16.23	Cast-Bronze Solder-Joint Drainage Fittings	1976
ANSI-B16.24	Bronze Flanges and Flanges Fittings 150 and 300 lb.	1979
ANSI B31.2	Fuel Gas Piping	1968
ANSI B31.8	Gas Transmission and Distribution Piping Systems	1975
ANSI-B36.1	Welded and Seamless Steel Pipe, Specifications for	1966
ANSI-B36.2	Welded Wrought-Iron Pipe, Specifications for	1966
ANSI-B36.19	Stainless Steel Pipe	1976
ANSI-B36.20	Black and Hot Dipped Zinc-Coated (Galvanized) Welded and Seamless Steel Pipe for Ordinary Uses, Specifications for	1966
ANSI-C72.1	Household Automatic Electric Storage-Type Water Heaters, Standard for	1972
ANSI-G8	Zinc-Coated (Galvanized) Iron or Steel Sheets, Coils, etc.	1964
ANSI-H23.1	Seamless Copper Water Tubes, Specification for	1967
ANSI-H23.3	Seamless Copper Tube, Specification for	1965
ANSI-H26.1	Seamless Copper Pipe, Standard Sizes, Specification for	1963

ANSI-H26.2	Threadless Copper Pipe, Specification for	1963
ANSI-H27.1	Seamless Red Brass Pipe, Standard Sizes, Specification for	1963
ANSI-H36.1	Seamless Brass Tube, Specification for	1967
ANSI/NFiPA 50	Standard for Bulk Oxygen Systems at Consumer Sites	1985
ANSI/NFiPA 99	Standard for Health Care Facilities, as modified	1987
** ANSI/UL 430	Standard for Waste Disposers (5th Edition)	1994
ANSI-Z4.2	Drinking Fountains, Specifications for	1942
ANSI-Z21.10.1	Gas Water Heaters, Volume I, Automatic Storage Type, Water Heaters with inputs of 75,000 BTU per hour or less	1981
ANSI Z21.10.3	Gas Water Heaters, Volume III, Circulating Tank, Instantaneous and Large Automatic Storage Type Water Heaters	1981
ANSI-Z21.22	Relief Valves and Automatic Gas Shut-Off Devices for Hot Water Supply Systems, Listing Requirements for	1979
ANSI Z223.1/NfiPA No. 54	National Fuel Gas Code including Addenda Z223.1a-1978	1974
ASME	Boiler and Pressure Vessel Code	1980
API 1104	Standard for Welding Pipelines and Related Facilities	1977
ASTM-B32	Specification for Solder Metal	1976
ASTM-B36	Specification for Brass Plate, Sheet, Strip, and Rolled Bar	1977
ASTM-B121	Specification for Leaded Brass Plate, Sheet, Strip, and Rolled Bar	1976
ASTM-B135	Seamless Brass Tube, Specification for	1971a
ASTM-B146	Leaded Yellow Brass Sand Casting for General Purposes, Specification for	1952
ASTM-B152	Copper Sheet, Strip, Plate, and Rolled Bar, Specification for	1979
ASTM-B260	Brazing Filler Metal (Tentative), Specification for	1962T
ASTM-C4	Specification for Clay Drain Tile	1962
ASTM-C13	Specification for Standard Strength Clay Sewer Pipe (Tentative)	1964T
ASTM-C14	Specification for Concrete Sewer, Storm Drain, and Culvert Pipe	1979
ASTM-C76	Specification for Reinforced Concrete Culvert, Storm Drain, and Sewer Pipe	1979
ASTM-C200	Specification for Extra Strength Clay Pipe (Tentative)	1965T
ASTM-C425	Specification for Vitrified Clay Pipe Joints Using Materials Having Resilient Properties	1977
ASTM-C428	Specification for Asbestos-Cement Non-pressure Sewer Pipe	1978
ASTM-C443	Specification for Joints for Circular Concrete Sewer and Gaskets	1978
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ASTM-E84	Method of Test for Surface Burning Characteristics of Building Materials	1981
AWWA C204	Protective Coating Coal-Tar Enamel	1951
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CISPI Designation 310	Specification for Cast Iron Soil Pipe Institute's Approved Coupling for Use in Connection with Hubless Cast Iron Soil Pipe and Fittings for Sanitary and Storm Drain, Waste and Vent Piping Applications	1985

CS-111	Earthenware (Vitreous-Glazed) Plumbing Fixtures	1943
CS-177	Bituminous-Coated Septic Tanks	1962
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CS-272	Non-Metallic Pipe and Fittings Polyvinyl Chloride (PVC)	1965
FS-HH-C536a	Compound, Plumbing-Fixture Setting	1954
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FS-QQ-L156(1)	Lead Caulking	1946
FS-QQ-C40	Caulking: Lead Wool and Lead Pig	1965
FS-QQ-L201d	Lead Sheet	1961
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FS-SS-P361b	Pipe, Clay, Sewer	1962
FS-SS-S169	Sealer, Joint, Sewer, Mineral-Filled, Hot-Pour	1954
FS-WW-F406a(1)	Flange-Dimensions, Standard: (Classes 125 and 250 Cast-Iron Flanges; Classes 150, 250, and 300 Bronze Flanges) (For Land Use)	1943
FS-WW-H171C	Hangers and Supports, Pipe	1964
FS-WW-H191a	Heater, Water, Steam-Hot Water Heated (Instantaneous, Steam, Water Converter Type)	1964
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FS-WW-P356	Pipe, Cast-Iron; Drainage, Vent, and Waste (Threaded)	1936
FS-WW-P360a	Pipe, Cast-Iron; Pressure Gas and Water	1959
FS-WW-P401C	Pipe and Pipe Fittings, Cast-Iron, Soil	1963
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FS-WW-V54b	Valves, Gate, Bronze, 125- and 150-Pound, Screwed and Flanged (for Land Use)	1962
FS-WW-V58(1)	Valves, Cast Iron, Gate; 125- and 250-Pound Screwed and Flanged (for Land Use)	1946
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***Local Law 100-1989; Local Law 29-1989; Local Law 29-1987; Local Law 82-1986; Local Law 30-1982; 1025-88 BCR**
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Section P100.0 Definitions

The following definitions shall be used in the application of this reference standard.

AIR-BREAK (DRAINAGE SYSTEM).—A piping arrangement in which a drain from a fixture, appliance, or device discharges through an air break into a fixture, receptacle, or interceptor at a point above the flood level rim of the receptacle.

AIR GAP (WATER DISTRIBUTION SYSTEM).—The unobstructed vertical distance through the free atmosphere between the lowest opening from any pipe or faucet supplying water to a tank, plumbing fixture, or other device and the flood level rim of the receptacle.

BACKFLOW.—The flow of water or other liquids, mixtures, or substances into the distributing pipes of a potable supply of water from any source or sources other than its intended source. (See back-siphonage.)

BACK-SIPHONAGE.—The flowing back of used, contaminated, or polluted water from a plumbing fixture or vessel into a water-supply system due to a negative pressure in such pipe. (See backflow.)

BATTERY OF FIXTURES.—Any group of two or more similar adjacent fixtures that discharge into a common horizontal waste or soil branch.

BRANCH.—That part of a piping system other than a main, riser, or stack that extends to fixtures on two or less consecutive floors.

BRANCH INTERVAL.—A distance along a soil or waste stack corresponding in general to a story height, but in no case less than 8 ft. within which the horizontal branches from one floor or story of a building are connected to the stack.

BRANCH VENT.—A vent connecting one or more individual vents with a vent stack or stack vent.

BUILDING HOUSE DRAIN.—That part of the lowest piping of a drainage system that receives the discharge from the soil, waste, and other drainage pipes of the building and conveys it to the building house sewer by gravity; the building house drain shall be considered to extend 5 ft. outside the building wall.

BUILDING HOUSE DRAIN (COMBINED).—A building house drain that conveys both storm water and sewage or other drainage.

BUILDING HOUSE DRAIN (SANITARY).—A building house drain carrying sewage only.

BUILDING GRAVITY DRAINAGE SYSTEM.—A drainage system that drains by gravity into the

building house sewer.

BUILDING HOUSE SEWER.—That part of the horizontal piping of a drainage system that extends from the end of the building house drain and that receives the discharge of the building house drain and conveys it to a public sewer, private sewer, individual sewage-disposal system or other point of disposal.

BUILDING HOUSE SEWER (COMBINED).— A building house sewer that conveys both sewage and storm water and other clear water wastes.

BUILDING HOUSE SEWER (SANITARY).— A building house sewer carrying sewage only.

BUILDING HOUSE STORM DRAIN.—That part of the lowest piping of a storm drainage system that receives clear water drainage from leaders, surface run-off, ground water, subsurface water, condensate, cooling water or other similar storm or clear water drainage pipes inside of the walls of the building and conveys to it to the building house storm sewer by gravity; the building house storm drain shall be considered to extend 5 ft. outside of the building wall.

BUILDING HOUSE STORM SEWER.— That part of the horizontal piping of the storm drainage system that extends from the building house storm drain to the public storm sewer, combined sewer, or other point of disposal.

BUILDING SUB-HOUSE DRAIN.—The portion of a house drainage system that conveys the drainage from the lower portion of the building to an ejector pit or sump pit from which it is pumped into the building house sewer.

BUILDING HOUSE TRAP.—A trap, or assembly of fittings, installed in the building house drain to prevent circulation of air between the house drainage system and the building house sewer.

CESSPOOL.—A covered excavation in the ground that receives the discharge of domestic sewage or other organic wastes from a drainage system, so designed as to retain the organic matter and solids, but permitting the liquid to seep through the bottom and sides.

COMBINATION FIXTURE.—A fixture combining one sink and tray or two- or three-compartment sink or tray in one unit.

COMBINATION WASTE AND VENT SYSTEM.—A specially designed system of waste piping embodying the horizontal wet venting of one or more sinks or floor drains by means of a common waste and vent pipe.

COMMON VENT.—A vent connecting at the junction of two fixture drains and serving as a vent for both fixtures and drains.

CONTINUOUS VENT.—A vertical vent that is a continuation of the drain to which it connects.

CONTINUOUS WASTE.—A drain from two or three fixtures connected to a single trap.

CROSS-CONNECTION.—A physical connection or arrangement between two otherwise separate piping systems, one of which contains potable water and the other with either water of unknown or questionable safety or steam, gases, or chemicals whereby there can be a flow from one system to another.

DEAD END.—A branch leading from a soil, waste, or vent pipe, building house drain, or building house sewer, which is terminated to a developed distance of 2 ft. or more by means of a plug or other closed fitting.

DEVELOPED LENGTH.—The length along the center line of pipe and fittings, both horizontal and vertical.

DIAMETER.—Unless otherwise specifically stated, the term "diameter" is the nominal diameter as designated commercially.

DOMESTIC SEWAGE.—The water-borne wastes derived from ordinary living processes.

DRAIN.—Any pipe that carries waste water or water-borne wastes in a building drainage system.

DRAINAGE SYSTEM.—Includes all the piping within public or private premises, which conveys sewage, rain water, or other liquid wastes to a legal point of disposal, but does not include the mains of a public sewer system or private or public sewage-treatment or disposal plant.

DRY WELL.—See leaching well or pit.

DUAL VENT.—See common vent.

EFFECTIVE OPENING.—The minimum cross-sectional area at the point of water-discharge, measured or expressed in terms: (1) diameter of a circle; (2) if the opening is not circular, the diameter or a circle of equivalent cross-sectional area.

EXISTING WORK.—A plumbing system or any part thereof installed prior to the effective date of this code.

FIRE LINE.—A system of pipes and equipment used exclusively to supply water for extinguishing fires.

FIXTURE.—See plumbing fixture.

FIXTURE BRANCH.—A water supply pipe connecting one or more fixtures to a main water supply header or riser.

FIXTURE DRAIN.—The drain from the trap of a fixture to the junction of that drain with any other drain pipe.

FIXTURE SUPPLY.—A water-supply pipe connecting the fixture with the fixture branch.

FLOOD LEVEL RIM.—The top edge or rim of a receptacle from which water can overflow regardless of the location of any overflow piping from the receptacle.

FLOODED.—A fixture is flooded when the liquid therein rises to the flood level rim.

FLUSH VALVE.—A device located at the bottom of the tank for the purpose of flushing water closets and similar fixtures.

FLUSHOMETER VALVE.—A device that discharges a predetermined quantity of water to fixtures

for flushing purposes and is actuated by direct water pressure.

FROSTPROOF WATER CLOSET.—A hopper that has no water in the bowl and has the trap and the control valve for its water supply installed below the frost line.

GAS DISTRIBUTION PIPING.—All piping from the house wide of the gas meter piping that distributes the gas supplied by a public utility to all fixtures and apparatus used for illumination or fuel in any building

GAS METER PIPING.—The piping from the shut-off valve inside the building to the outlet of the meter.

GAS SERVICE PIPING.—The supply pipe from the street main through the building wall and including the stopcock or shut-off valve inside the building.

INDIRECT WASTE PIPE.—A drain pipe used to convey liquid wastes that does not connect directly with the drainage system, but which discharges into the house drainage system through an air break into a trap, fixture, receptacle, or interceptor.

INDUSTRIAL WASTE.—A liquid, gaseous or solid substance, or a combination thereof resulting from any process of industry, manufacturing, trade or business or from the development or recovery of any natural resource.

INTERCEPTOR.—A device designed and installed so as to separate and retain deleterious, hazardous, or undesirable matter from normal wastes and permit normal sewage or liquid wastes to discharge into the disposal terminal by gravity.

LEACHING WELL OR PIT.—A covered pit constructed so as to permit the liquid contents to seep into the ground.

LEADER.—A vertical drainage pipe for conveying storm water from roof or gutter drains to the building storm drain, building house drain (combined). or other means of disposal. The leader shall include the horizontal pipe to a single roof drain or gutter drain.

LIQUID WASTE.—The discharge from any fixture, appliance, or appurtenance, in connection with a plumbing system that does not receive fecal matter.

LOAD FACTOR.—The percentage of the total connected fixture unit flow rate that is likely to occur at any point in the drainage system.

LOCAL VENTILATING PIPE.—A pipe on the fixture side of the trap through which vapor or foul air is removed from a room or fixture.

NORMAL SEWAGE.—Normal sewage means "normal sewage" as defined in the rules and regulations of the Department of Public Works.

PITCH.—See grade.

pH VALUE.—An arbitrary symbol adopted to express the degree of acidity or alkalinity of a solution. It is the logarithm of the reciprocal of the hydrogenion concentration, in gram mols per liter at 71.6°F. A pH of 7.0 represents a neutral solution, lower values represent acidity, higher values alkalinity.

PIPING.—As used in this reference standard, piping shall include fittings, valves, and other accessories or appurtenances required to make a complete installation.

PLUMBING.—The practice, materials, and fixtures used in the installation, maintenance, extension, repair, replacement, relocation and alteration of all piping, fixtures, appliances, and appurtenances in connection with any of the following, sanitary drainage or storm drainage facilities, the venting system, and public or private water supply systems, within or adjacent to any building; also, the practice and materials used in the installation, maintenance, extension, repair, replacement, relocation or alteration of storm water, liquid-waste, or sewerage, and water-supply systems of any premises in their connection with any point of public disposal or other acceptable terminal.

PLUMBING FIXTURES.—Installed receptacles, devices, or appliances that are supplied with water or that receive or discharge liquids or liquid-borne wastes.

PLUMBING SYSTEM.—Includes the water-supply and distribution pipes; plumbing fixtures and traps; soil, waste, and vent pipe; building house drains and building house sewers including their respective connections, devices, and appurtenances within the property lines of the premises, and water-treating or water-using equipment.

POOL.—A water receptacle used for swimming or as a plunge or other bath, designed to accommodate more than one bather at a time. Also a receptacle used for decorative purposes.

POTABLE WATER.—Water free from impurities present in amounts sufficient to cause disease or harmful physiological effects. Its bacteriological and chemical quality shall conform to the requirements of the department of health of the City of New York.

PRIVATE OR PRIVATE USE.—In the classification of plumbing fixtures, "private" applies to fixtures in residences and apartments and to fixtures in bathrooms of hotels and similar installations where the fixtures are intended for the use of a family or an individual.

PRIVATE SEWER.—A sewer privately owned and controlled by public authority only to the extent provided by law.

PUBLIC OR PUBLIC USE.—In the classification of plumbing fixtures, "public" applies to fixtures in general toilet rooms of schools, gymnasiums, hotels, railroad stations, public buildings, bars, comfort stations, and other installations (whether pay or free) where fixtures are installed so that their use is similarly unrestricted.

PUBLIC SEWER.—A common sewer directly controlled by public authority.

RELIEF VENT.—A vent installed so as to permit additional circulation of air between the drainage and vent systems where the drainage system might otherwise be air bound.

RIM.—An unobstructed open edge of a fixture.

RISER.—A water-supply pipe that extends vertically one full story or more to convey water to branches or fixtures.

ROOF DRAIN.—A drain installed to receive water collecting on the surface of a roof and to discharge it into the leader (downspout).

ROUGHING-IN.—The installation of all parts of the plumbing system that can be completed prior to the installation of fixtures. This includes drainage, water-supply, and vent piping, and the necessary fixture supports.

SANITARY SEWAGE.—See domestic sewage.

SANITARY SEWER.—A pipe that carries sewage and excludes storm, surface and ground water.

SEEPAGE PITS OR WELLS.—A covered pit with open jointed or perforated lining into which the septic tank effluent is discharged. The liquid portion of the sewage seeps into the surrounding porous soil. The remaining solids or sludge is retained in the pit.

SEPARATOR.—See interceptor.

SEPTIC TANK.—A watertight receptacle that receives the discharge of a drainage system or part thereof, and is designed and constructed so as to separate solids from the liquid, digest organic matter during a period of detention, and allow the liquids to discharge into the soil outside of the tank through a system of open-joint or perforated piping, or seepage pit.

SEWAGE.—Any liquid waste containing animal or vegetable matter in suspension or solution, and may include liquids containing chemicals in solution.

SEWAGE DISPOSAL SYSTEM.—A system for the disposal of domestic sewage by means of a septic tank, cesspool, or mechanical treatment, all designed for use apart from a public sewer to serve a single establishment, building, or development.

SEWAGE EJECTOR.—A mechanical device used to pump or eject sewage.

SEWAGE EJECTOR PIT.—A tank or pit that receives sewage located below the normal grade of the gravity system and that must be emptied by mechanical means.

SIDE VENT.—A vent connecting to the drain pipe through a fitting at an angle not greater than 45 degrees to the vertical.

SLOPE.—See grade.

SOIL PIPE.—A pipe that conveys sewage containing fecal matter.

SPECIAL WASTE.—Waste which requires special treatment before entry into the normal plumbing system.

STACK.—A general term for any vertical line of soil, waste, vent, or inside leader piping. This does not include vertical fixture and vent branches that do not extend through the roof or that pass through not more than two stories before being reconnected to the vent stack or stack vent.

STACK VENT (SOMETIMES CALLED A WASTE VENT OR SOIL VENT).—The extension of a soil or waste stack above the highest horizontal drain connected to the stack.

STACK VENTING.—A method of venting a fixture or fixtures through the soil waste stack.

STORM DRAIN.—See building storm drain.

STORM SEWER.—A sewer used for conveying rain water, surface water, condensate, cooling water, or similar clear liquid wastes.

SUB-HOUSE DRAIN.—See building sub-house drain.

SUB-SURFACE DISPOSAL FIELD.—A system of open jointed tile or perforated pipes or drains through which storm water or the sewage effluent from a septic tank is distributed beneath the surface of the ground for absorption into the soil, as well as evaporation into the air during favorable weather conditions.

SUB-SOIL DRAIN.—A drain that receives only sub-surface or seepage water and conveys it to a place of disposal.

SUMP PIT.—A tank or pit that receives clear liquid wastes, that do not contain organic materials or compounds subject to decomposition, located below the normal grade of the gravity system and which must be emptied by mechanical means.

SUMP PUMP.—A mechanical device used to eject or pump the liquid waste from a sump pit into the gravity drainage system.

SUPPORTS.—Devices for supporting and securing pipe, fixtures, and equipment.

SWIMMING POOL.—Any structure, basin, chamber or tank containing water for swimming, diving, or recreational bathing and having a depth of 2 ft. or more at any one point.

TRAP.-A fitting or device with a smooth interior passage, the inside diameter of which is equal to the inlet pipe diameter, and which provides a liquid seal of at least 2 in.

TRAP SEAL.-The maximum vertical depth of liquid that a trap will retain, measured between the crown weir and the top of the dip of the trap. Seal 2 in. in normal traps and 3 in. or more for deep seal traps.

VACUUM BREAKER.—A device used to prevent backflow by siphonic action.

VENT PIPE.—See vent system.

VENT STACK.—A vertical vent pipe installed primarily for the purpose of providing circulation of air to and from any part of the drainage system.

VENT SYSTEM.—A pipe or pipes installed to provide a flow or air to or from a drainage system or to provide a circulation of air within such system to protect trap seals from siphonage and back pressure.

VERTICAL PIPE.—Any pipe or fitting that is installed in a vertical position or that makes an angle of not more than 45 degrees with the vertical.

WASTE PIPE.—A pipe that conveys only

liquid waste, free of fecal matter.

WATER-DISTRIBUTION PIPING.—In a building or premises, piping that conveys water from the water service pipe to the plumbing fixtures and other water outlets.

WATER (STREET) MAIN.—A water-supply pipe for public or community use controlled by public authority.

WATER OUTLET.—As used in connection with the water-distributing system, is the discharge opening for the water to a fixture; to atmospheric pressure (except into an open tank which is part of the water-supply system); to a boiler or heating system; to any water-operated device or equipment requiring water to operate, but not a part of the plumbing system.

WATER SERVICE PIPING.—That portion of the water supply system extending from the public street water main to the house control valve inside the building to a point where the supply is fully metered.

WATER SUPPLY SYSTEM.—Consists of the water-service pipe, the water-distribution pipes, and the necessary connecting pipes, fittings, control valves, and all appurtenances used for conveying water.

YOKE VENT.—A pipe connecting upward from a soil or waste stack to a vent stack for the purpose of preventing pressure changes in the stack.

Section P101.0 General Provisions

P101.1 Protection of Pipes.-

(a) Breakage.—Pipe passing under or through walls shall be protected from breakage. Any plumbing pipe passing under a footing or through a foundation wall shall be protected from carrying any weight of the structure by an arch or lintel constructed above the pipe by an iron-pipe sleeve built into the masonry wall and greater in size than the pipe passing through the wall, or by an equivalent method of protection.

(b) Corrosion.—Pipe subject to external corrosion by passing through or under corrosive material shall be protected against external corrosion by protective coating, wrapping, or other equivalent means that will resist such corrosion.

P101.2 Trenching, Excavation, and Backfill.-

(a) Material for backfill.—Trenches shall be backfilled by hand and tamped, in 6 in. layers, for 1 ft. above the crown of the pipe. Loose earth, free from frozen earth chunks or other material that may break the pipe, shall be used to provide firm bedding around the pipe.

(b) Trenching methods.-

(1) Trenches shall be excavated to a width sufficient to permit workmen to properly install the pipe. The bottom of the pipe trench shall be constructed so that the pipe between joints will have solid bearing along its entire length. Bell holes shall be provided at points where the pipe is joined together to insure uniform bearing along the length of the pipe. In rock excavation the material shall be removed 3 in. to 6 in. below the grade line of the trench and then backfilled and tamped to grade with sand to provide a uniform firm foundation for the pipe. If soil materials of class 11-65 or poorer are encountered the pipe shall be supported in accordance with the applicable provisions of the building code for structural work.

(2) Where open trenches are impractical, pipe may be installed by driving or tunneling methods acceptable to the commissioner. Where driving or tunneling methods are employed, special care shall be exercised to protect the pipe from breakage and against earth settling or caving. Pipe may be installed in a previously driven conduit slightly larger than the pipe. Earth tunnels with a length not exceeding the depth of the trench may be employed, providing adequate supporting structures are provided to prevent future settling or caving.

(3) Permits for sidewalk and street openings shall be obtained from the department of highways.

P101.3 Sleeves.-

(a) The annular space between sleeves and pipe through foundation or exterior building walls shall be filled or partly caulked with polysulphide compound, lead, or other equivalent waterproofing material.

(b) Where pipes and sleeves pass through construction required to have a fire-resistance rating, they shall comply with the applicable requirements of the building code.

P101.4 Ratproofing.—In an apartment or in dwelling units, and in buildings or building areas used for the storage or preparation of food, the openings in walls, floors, or ceilings for the passage of pipes shall be closed and protected by metal collars securely fastened to the structure.

P101.5 Toilet Facilities for Workmen.—The site upon which any building, except a one- or two-family dwelling, is being constructed shall be provided with toilet facilities for use of workmen as specified in Table RS 16-5.

Section P102.0 Materials

P102.1 General Requirements.-

(a) Materials required.—All materials used in the construction of any plumbing system, fixtures, or equipment shall be as required by this reference standard.

(b) Installation.—All materials installed in plumbing systems shall be handled and installed so as to avoid damage to the material.

P102.2 Standards for Plumbing Materials.-

(a) Materials.—Materials shall conform to one of the standards cited in Table RS 16-1. Equivalent materials not listed in Table RS 16-1 may be used provided they are approved.

***TABLE RS 16-1 STANDARDS FOR PLUMBING MATERIALS**[a]

Materials	ANSI	Other
Ferrous Pipe and Fittings-		
Cast iron soil pipe and fittings coupling...	None	CISPI 310-1985
Hubless cast iron soil pipe	None	CISPI 301-1985
Cast iron soil pipe and fittings, extra heavy and service weights ...…	None	CS188-66
Cast iron water pipe .....…	A21.6-1962 A21.8-1962	
Cast iron pipe, drainage, vent and waste…	None	FS-WW-P356-1936
Cast iron pipe, pressure (50 lb.) gas and water ……	None	FS-WW-P360a-1959
Cast iron (threaded) pipe	A40.5-1943	
Cast iron (threaded) fittings	B16.4-1963	
Cast iron drainage fittings	B16.12-1965	
Galvanized pipe and fitting	None	FS-WW-P406(1) 1945
Malleable iron fittings (threaded)		
150 lbs.	B16.3-1963	
300 lbs.	B16.3-1963	
Steel pipe, seamless and welded, black and zinc coated (not intended for close coiling) ….....	B36.20-1966	
Steel pipe, seamless and welded, black and zinc coated (suitable for close coiling) ……....	B36.1-1966	
Stainless steel pipe	B36.19-1965	
Union, malleable iron or steel	None	FS-WW-O531a-1957 FS-WW-U536(1)-1953
Wrought-iron pipe	B36.2-1966	
Valves, cast iron, gate 125 and 250 lb. threaded and flanged	None	FS-WW-V58(1)-1946
Pipe fittings, bronze and ferrous (bushings, plugs and locknuts), threaded ..…….....	None	FS-WW-P471(1)-1946
Nipples, pipe threaded	None	FS-WW-N351a-1956
Non-Ferrous Pipe and Fittings-		
Finished and rough brass plumbing fixture fittings	None	ASME A112.18.1M-79
Brass tube	H36.1-1967	
Brass pipe	H27.1-1963	
Brass or bronze flanges and flanged fittings, 150 and 300 lb.	B16.24-1962	
Brass or bronze screwed fittings, 125 lb and 250 lb. …….....	B16.15-1964	
Cast-bronze solder joint pressure fittings …….....	B16.18-1963	
Cast-brass solder joint drainage fittings …….....	B16.23-1960	
Copper pipe	H26.1-1963	
Copper pipe, threadless	H26.2-1963	
Seamless copper tube	H23.3-1965	
Copper water tube, type K, L	H23.1-1967	
Wrought copper and wrought bronze solder joint fittings .....….....	H16.22-1963	

Wrought copper and wrought copper alloy solder joint drainage fittings…..	H16.29-1966	
Lead pipe and traps	None	WW-P325-1944
Unions, brass or bronze, 250 lb.	None	FS-WW-U516-1933
Valves, bronze; angle, check and globe, 125 and 150 lb., threaded and flanged ……....	None	FS-WW-V51a(2)-1954
Valves; bronze, gate, 125 and 150 lb., threaded and flanged	None	FS-WW-V54b-1962
Pipe fittings, bronze and ferrous (bushings, plugs and locknuts), threaded ……....	None	FS-WW-P471(1)-1946
Non-Metallic Pipe and Fittings-		
Asbestos cement (sewer) pipe[b]	None	ASTM-C428-65T
Asbestos cement underdrain	None	ASTM-C508-67T
Clay drain tile	None	ASTM-C4-62
Concrete sewer pipe, reinforced	None	ASTM-C76-65T
Concrete sewer pipe, nonreinforced….	None	ASTM-C14-67
Clay sewer pipe, standard strength	A106.3-1965	ASTM-C13-64T
Vitrified clay sewer pipe, salt-glazed and unglazed extra strength……...	None	ASTM-C200-65T
Vitrified clay sewer pipe, ceramic glazed, extra strength ……....	None	FS-SSP361b-1962
Vitrified clay sewer pipe, perforated, standard strength ……....	A106.1-1962	
Plumbing Fixtures-		
Drinking fountains	Z4.2-1942	
Enameled cast iron plumbing fixtures..	None	ASME 112.19.1M-87
Earthenware (vitreous glazed) plumbing fixtures ..…….....	None	CS111-43
Formed steel enameled sanitary ware..	None	FS-WW-P541b(2)-1962
Formed metal porcelain enameled sanitary ware ...…….....	None	FS-WW-P541b(2)-1962
Heaters, water, instantaneous (steam-water converter type)	None	FS-WW-H191-1954
Plumbing fixtures (for) land use	None	FS-WW-P541b(2)-1962
Stainless steel plumbing fixtures	None	ASME A112.19.3M-87
Vitreous china plumbing fixtures	A112.19.2M-82	
Stills, water; portable (without heating device) for U.S.P." distilled water"….	None	FS-RR-S726(1)-1950
Porcelain enameled formed steel plumbing fixtures.	None	ASME A112.19.4M-84
Miscellaneous Materials and Standards-		
Automatic relief valves	Z21.22-1964	
Air gap standards	A40.4-1942	
Backflow preventers	A40.6-1943	
Brass cleanout plugs	None	FS-WW-P401(3)-1951
Brazing filler metal	None	ASTM-B260-62T
Caulking lead, Type I	None	FS-QQ-L156(1)-1946
Caulking: lead wool and lead pig	None	FS-QQ-C40-1963
Cement lining	A21.4-1964	
Coal-tar, enamel, protective coating....	None	AWWA-C203-62

Fixture setting compound	None	FS-HH-C536a-1954
Flange dimensions, standard classes 125 and 250 cast iron flanges, classes 150, 250 and 300 bronze flanges (land use)	None	FS-WW-F406a(1)-1943
Galvanized iron and steel sheets	G8.2-1964	
Gaskets, plumbing-fixture-setting	None	FS-HH-G116-1936
Hangers and supports, pipe	None	FS-WW-H171b-1959
Resilient joints	None	ASTM-C425-64
Rubber gaskets (concrete sewer pipes).	None	ASTM-C443-65
Seal joints, sewer	None	FS-SS-S169-1954
Sheet brass, leaded and non-leaded	None	ASTM-B36-66 ASTM-B121-66
Sheet copper	None	ASTM-B152-60
Sheet lead, grade A	None	FS-QQ-L201d-1961
Solder metal	None	ASTM-B32-66T
Steel septic tanks	None	CS177-62
Domestic hot water heaters	Z21.10.1-1966	C72.1-1949

Notes-

** a Abbreviations used in the table refer to the following organizations:
*** USASI-United States of America Standards Institute
ASTM—American Society for Testing and Materials
AWWA—American Water Works Association
CS—Commercial Standards
FS—Federal Specifications
Local Law 100-1989; Local Law 29-1989; Local Law 63-1976
****List as enacted, but probably intended to add "ASME-American Society of Mechanical Engineers."***
*****As enacted, but probably intended to read "ANSI-American National Standards Institute, Inc."***

b Asbestos cement building sewer pipe shall meet the requirements of ASTM Standard C428-63T expanded as follows:
(1) Additional sizes 4 in. and 5 in.
(2) No hydrostatic test for building sewer service
(3) Flexural strength:

Size (in.)	Length (in.)	Class 1500	Class 2400	Class 3300
4	10	550	775	1100
4	13	750	1000	1350
5	10	950	1375	1900
5	13	1250	1775	2350
6	10	1500	1700	2100
6	13	2000	2200	2600

(4) Crushing strength: Include 4 in. and 5 in. for Classes 1500, 2400, 3300
Crushing test: One specimen from each 300 lengths of 4 in., 5 in., and 6 in. size pipes.

†**(b) Plastic piping and fittings**.-Plastic piping and fittings may be used only in residential buildings of three stories or less in height, except that corrugated polyethylene piping with a diameter of twelve inches or more and plastic fittings may be used in connection with any type of building for underground yard drainage and storm water piping when used outside of the foundation walls of the building and not connecting to any piping system from the interior of the building and shall be approved. Plastic drain, waste and vent pipe and fittings used inside of residential buildings of three stories or less in height shall be required to conform with ASTM Standard D2661-97 Specification for Acrylonitrile-Butadiene-Styrene (ABS) Schedule 40 Plastic Drain, Waste, and Vent Pipe and Fittings or ASTM Standard D2665-98 Specification for Poly Vinyl Chloride (PVC) Plastic Drain, Waste, and Vent Pipe and Fittings, as well as the International Association of Plumbing and Mechanical Officials Installation Standards for ABS Building Drain, Waste and Vent Pipe and Fittings (IAPMO IS 5-92) and PVC Building Drain, Waste and Vent Pipe and Fittings (IAPMO IS 9-95) and Non-Metallic Building Sewers (IAPMO IS 1-91).

†Local Law 2-2001; Local Law 58-1973; Local Law 75-1971

P102.3 Identification of Materials.-Materials shall be identified as provided herein.

P102.4 Piping System Materials.-

(a) Water supply systems.-

*(1) WATER SERVICE PIPE.-Water service piping within the property line shall be of red brass or copper pipe; type K copper tube; type "TP" threadless copper; cast iron or ductile iron water pipe; or plastic pipe in accordance with section P102.2(b). Water service piping outside of the property line shall comply with requirements of the department of environmental protection. When used underground in corrosive soil or fill, all ferrous pipe and fittings shall be coal tar, enamel coated. Threaded joints shall be coated and wrapped after installation regardless of the nature of the soil.

(2) WATER DISTRIBUTION SYSTEM PIPE.-Water distribution system piping shall be of red brass pipe, type "TP" threadless copper pipe, hard temper type "K" copper tube, hard temper type "L" copper tube, galvanized wrought iron pipe, galvanized steel pipe, or ductile cast iron properly anchored. Cast iron and ductile-iron pipe may be cement lined in accordance with ANSI A21.4-1971. Type "L" copper tube shall not be installed in soil or concrete floor fill.

***(b) Drainage systems.-**

****Local Law 29-1987; Local Law 63-1976; Local Law 58-1973***

******Local Law 63-1976***

(1) ABOVE GROUND PIPING WITHIN BUILDINGS.-Soil, waste, and storm water or leader piping above ground in buildings shall be brass pipe, copper pipe, hard temper type "K" copper tube, hard temper type "L" copper tube, extra heavy cast iron soil pipe, service weight cast iron soil pipe, no-hub cast iron soil pipe, AWWA class 22 or stronger iron, stainless steel pipe, threaded cast iron pipe, galvanized wrought iron pipe, galvanized steel pipe, or lead pipe, singly or in combination. Cast iron piping and fittings may be coated or uncoated. The maximum developed length to which lead may be used in connection with any one fixture shall be 5 feet. Plastic pipe will be permitted if it conforms to the requirements set forth in section P102.2(b).

(2) UNDERGROUND PIPING WITHIN BUILDINGS.-All underground building drains shall be extra heavy cast iron soil pipe, service weight cast iron soil pipe, no-hub cast iron soil pipe, AWWA Class 22 or stronger cast iron water piping, ductile cast iron, brass pipe, type "K" hard temper copper tube, or plastic pipe conforming to the requirements set forth in section P102.2(b). Cast iron pipe and fittings may be coated or uncoated.

(3) BUILDING HOUSE SEWERS.-

**a. Building house sewers shall be extra heavy iron soil pipe and fittings, service weight cast iron soil pipe and fittings, no-hub cast iron soil pipe and fittings, AWWA class 22 or stronger cast iron water piping, ductile cast iron and fittings, or plastic pipe conforming to the requirements set forth in section P102.2(b), a minimum of 8 in. size in the borough of Manhattan and 6 in. in the other boroughs, except that a house sewer from one- and two-family dwellings may be the size specified in Table RS 16-13 and may run up to the street line. Cast iron pipe and fittings may be coated or uncoated.

*****Local Law 58-1973; Local Law 39-1972***

b. Building house sewers for one- and two-family dwellings when installed in a separate trench from the water service may be of vitreous pipe or asbestos cement pipe.

c. Existing building sewers may be used in connection with a new building sewer and drainage system only when found by examination and test to conform to the new system in quality of material.

†(4) UNDERGROUND YARD DRAINAGE AND STORM WATER PIPING.-Underground yard drainage and storm water piping within the property line but outside of the foundation walls of the building shall be extra heavy cast iron soil pipe, AWWA Class 22 or stronger cast iron water pipe, ductile cast iron, service weight cast iron, no-hub cast iron soil pipe, asbestos cement pipe, vitreous tile pipe, concrete pipe, or plastic pipe conforming to the requirements set forth in section P102.2(b). Cast iron pipe and fittings may be coated or uncoated.

†Local Law 63-1976; Local Law 58-1973

(5) CHEMICAL WASTES (ACID WASTES)-Separate drainage systems for chemical waste shall be of acid resistant material when the waste water at any point in the system will have a pH value of less than 4.5

or more than 9.5. Chemical waste drainage piping shall be low expansion, borosilicate glass pipe; high silicon cast iron pipe; chemical stoneware pipe; chemical lead pipe; or approved plastic pipe regardless of building height, or other equivalent materials. Materials may be used singly or in combination.

***(c) Venting Systems.-**

(1) ABOVE GROUND VENTING.-Vent piping installed above ground shall be brass pipe, type "TP" threadless copper pipe, hard temper type "K" copper tube, hard temper type "L" copper tube; extra heavy cast iron soil pipe, service weight cast iron soil pipe, no-hub cast iron soil pipe, AWWA Class 22 or stronger cast iron water pipe, ductile cast iron, threaded cast iron pipe, galvanized wrought iron pipe, galvanized steel pipe, singly or in combination. Cast iron pipe and fittings may be coated or uncoated. Plastic pipe will be permitted if it conforms to the requirements set forth in section P102.2(b).

****Local Law 63-1976***

(2) UNDERGROUND VENTING. Underground vent piping shall be extra heavy cast iron soil pipe, service weight cast iron soil pipe, no-hub cast iron soil pipe, AWWA Class 22 or stronger cast iron water pipe, ductile cast iron, brass pipe, copper pipe, or type "K" hard temper copper tube. Cast iron pipe and fittings may be coated or uncoated.

(3) CHEMICAL WASTE SYSTEMS.-Vent piping for chemical waste systems shall conform to the requirements for the chemical waste pipe.

(d) Fittings.-The materials of which water supply, drainage, and venting system pipe fittings are made shall conform to the type of piping material used in the water supply, drainage, or venting system (i.e., brass or bronze fittings with copper pipe or tubing), except that black cast iron may be used with brass or galvanized pipe. Threaded drainage pipe fittings shall be of the recessed drainage type. Fittings used to prevent or reduce galvanic corrosion may be installed within a system only at the point of isolation.

(e) Other piping systems and miscellaneous materials.-

(1) ROOF DRAINS.-Roof drains shall be cast iron, bronze, copper, brass, stainless steel, lead, or other equivalent corrosion resistant material.

(2) EXTERIOR LEADERS (DOWNSPOUTS).-

Exterior leaders and gutters installed above ground level shall be sheet metal or copper, aluminum, galvanized steel, stainless steel, or other equivalent corrosion resistant material. Pipe (galvanized steel, galvanized wrought iron, cast iron or brass) may be used for the first 15 ft. of leader extending up from grade, providing that the pipe is securely anchored with offset clamps to the face of building at two points in the vertical section of pipe. Pipe will not be acceptable above 15 ft.

*(3) SUBSOIL DRAINS.-Subsoil drains shall be clay tile that is open jointed, horizontally split, or perforated; open jointed cast iron soil pipe; porous concrete pipe; asbestos cement pipe that is open jointed, horizontally split, or perforated or plastic pipe in accordance with section P102.2(b) that is open jointed, horizontally split, or perforated.

Local Law 39-1972; Local Law 58-1973

(4) LEAD BENDS AND TRAPS.-The walls of lead bends and traps shall be at least 1/8 in. thick.

(5) SHEET COPPER.-Sheet copper shall weigh at least 12 ounces per sq. ft.

(6) SHEET LEAD.-Sheet lead shall weight at least 4 psf.

(7) CAULKING FERRULES.-Caulking ferrules shall be brass or copper, and shall be made in accordance with Table RS 16-3.

Ferrules may be tapped "T" or tapped "Y" types with bossings provided on the tapped connection.

(8) SOLDERING BUSHINGS.-Soldering bushings shall be brass or copper in accordance with Table RS 16-4.

TABLE RS 16-3 CAULKING FERRULES

Pipe Sizes (In.)	Inside Diameter of Ferrule (In.)	Minimum Length of Ferrule (In.)	Minimum Weight of Each Ferrule
2	2 1/4	4 1/2	1 lb. - 0 oz.
3	3 1/4	4 1/2	1 lb. - 12 oz.
4	4 1/4	4 1/2	2 lbs. - 8 oz.

TABLE RS 16-4 SOLDERING BUSHINGS

Pipe Sizes (In.)	Minimum Weight of Each Ferrule
1 1/4	6 oz.
1 1/2	8 oz.
2	14 oz.
2 1/2	1 lb. - 6oz.
	2 lbs-. 0 oz.
4	3 lbs-. 8 oz.

(9) FLOOR FLANGES.-Floor flanges for water closets or similar fixtures shall be of cast brass at least 1/8 in. thick, of cast iron at least 1/4 in. thick and having a caulking depth not less than 2 in., or of hard lead weighing at least 1 lb.-9 oz. and composed of lead alloy having at least 7.75 per cent antimony by weight. The use of floor flanges of other equivalent materials may be used.

(10) CLEANOUT PLUGS.-Cleanout plugs shall be of brass at least 1/8 in. thick and shall have raised square or hexagonal heads except that where raised heads will cause a tripping hazard, countersunk heads shall be used. Cleanout plugs of nylon may be used in exposed or accessible locations.

(11) FLUSH PIPES AND FITTINGS.-Flush pipes and fittings shall be of nonferrous material. When brass or copper tubing is used, the material shall be at least 0.0313 in. thick (no. 22 U.S. gage).

(12) TUBULAR BRASS TRAPS.-The "J" bend and wall tube shall be formed of brass tubing having a wall thickness of at least 0.045 in. (no.17 P & S gage) conforming to ASTM-B135-63, alloy No. 3. Bends shall be properly annealed after forming to prevent season-cracking. Nuts shall be cast brass conforming to ASTM-B146-52, alloy 6A, and the collars shall be cut from brass tubing conforming to ASTM B135-63, alloy No. 4. Collars shall be fully soldered on "J" bends.

***(13) INSULATION.-Coverings and insulations, including vapor barriers, shall have a maximum flame spread rating of 25 without evidence of continued progressive combustion, and shall have a maximum smoke developed rating of 50. If the coverings and insulations, including vapor barriers are to be applied with adhesives, they shall be tested as applied with such adhesives, or the adhesives used shall have a maximum flame spread rating of 25 and a maximum smoke developed rating of 50. Tests shall be performed in accordance with ASTM-E84-61.

******Local Law 63-1976***

(14) MISCELLANEOUS.-Internal and external parts of faucets, valves, ballcocks, etc. may be made with plastics meeting the criteria of this reference standard.

Section P103.0 Joints and Connections

***P103.1 Types of Joints for Piping Materials**.-

**Local Law 13-1993*

(a) Asbestos cement pipe joints.–Joints in asbestos cement pipe shall be made with sleeve couplings of the same composition as the pipe, and sealed with approved rings.

(b) Brazed joints.–Brazed joints for type "TP" threadless copper, copper, brass pipe, or copper water tube type "K" or "L" shall be made by first cleaning down to the base metal the surfaces to be welded or brazed, then applying a flux for such joints, and finally, making the joint with a brazing alloy having a melting point higher than 1000^{o}F.

***(c) Cast iron pipe**.–Joints in cast iron pipe shall be compressed elastomeric, mechanical, caulked, or threaded, or of another type as approved.

******Local Law 63-1976***

***(d) Cast iron soil pipe.-**

(1) Caulked joints for cast iron bell and spigot soil pipe shall be firmly packed with oakum or hemp, filled with molten lead at least 1 inch deep and the surface shall not be depressed more than 1/8 inch below the rim of the hub. No paint, varnish, or other coatings will be permitted on the jointing material until after the joint has been tested and accepted. Lead shall be run in one pouring and shall be caulked tight.

(2) Mechanical joints for cast iron soil pipe shall be made with an approved preformed molded ring secured by pulling the pipe together in such a way as to compress the molded ring or shall be made with a corrosion resistant joint and clamp assembly surrounding a sealing sleeve of an approved elastomeric material so that the sealing sleeve is firmly compressed by the tightening device in the clamp assembly to provide a gas and water tight joint. Obstructions to the flow of water through a mechanical joint shall not be greater than those of a caulked joint.

******Local Law 63-1976***

(e) Cast iron water pipe (caulked joint).-Caulked joints for cast iron bell and spigot water pipe shall be firmly packed with clean and sound asbestos rope, treated paper rope, or with molded or tubular approved rings. The remaining space in the hub shall be filled with molten lead according to the following schedule:

Pipe Size	Depth of Lead
Up to 20 in.	2 ¼ in.
24, 30, or 36 in.	2 ½ in.
Larger than 36 in.	3 in.

Lead shall be run in one pouring and shall be caulked tight.

***(f) Cast iron water pipe.-**Compression and mechanical joint.-

Mechanical joints in cast iron water pipe shall conform to ANSI A21.11-1972 and shall be made with a flanged collar, a ring gasket and appropriate number of securing bolts, or with a preformed molded ring secured by pulling the pipe together in such a way as to compress the molded ring. Mechanical joints may be used wherever AWWA cast iron or ductile iron is permitted in section P102.0.

******Local Law 63-1976***

(g) Clay sewer pipe.-Joints in clay sewer pipe shall either be of hot poured compounds, or of preformed materials consisting of approved resilient materials that are installed on both the spigot and bell ends.

(h) Concrete sewer pipe.-Joints in concrete sewer pipe shall be of hot poured compound, of preformed material, or of approved gasketing rings.

(i) Concrete pipe (slip joint).-Flexible joints between lengths of concrete pipe may be made by using approved

rubber materials on the spigot end and in the bell end of the pipe.

****(j) Copper tube (type "K" or "L").–**Joints in type "K" or "L" hard temper copper tube for water supply piping or drainage and vent piping shall be made by soldering or brazing. Solder shall be lead-free. Permissible lead-free solders are 95-5 tin-antimony, 96-4 tin-silver, 94-6 tin-silver, 95-5 tin-silver, or any other solder approved by the commissioner. Joints in copper tube for vent or drainage piping shall be made using cast brass or wrought copper solder joint drainage fittings. Tubing for water piping may be bent by mechanical means with no crushing or crimping of the tubing. For purposes of this section, lead-free solder shall mean solder containing less than 0.2 percent lead.

*****Local Law 13-1993; Local Law 29-1987; Local Law 63-1976***

(k) Couplings.–All built-in threaded piping carrying gas or water shall be installed with couplings.

(l) Expansion joints.–Expansion joints must be accessible and shall be used only where necessary to provide for expansion and contraction of the pipes. All expansion joints shall be of type and material suitable for use with the type of piping in which they are installed.

(m) Hot poured joints.–All surfaces of the joint shall be cleaned and dried before pouring. Hot poured compound for clay or concrete sewer pipe shall not be water absorbent, and when poured against a dry surface, shall have a bond to withstand a pressure of at least 100 psi. If wet surfaces are unavoidable, a suitable primer shall be applied. The compound shall not soften sufficiently to destroy the effectiveness of the joint when subjected to a temperature of 160^{o} F., nor shall it be soluble in any of the waste carried by the drainage system. Approximately 25 percent of the joint space at the base of the socket shall be filled with jute or hemp. A pouring collar, rope, or other device shall be used to hold the hot compound during pouring. Each joint shall be poured in one operation until the joint is filled. Joints shall not be tested until at least 1 hr. after pouring.

(n) Glass pipe joints.–Joints in chemical waste glass piping shall be made with approved compression coupling, adapter coupling or adjustable joints.

(o) Preformed joints.–Preformed collars shall be formed in both the spigot and bell of the pipe in advance of closing the joint. Collar surfaces shall be conical with side slopes of 3 degrees with respect to the axis of the pipe, and the length shall be equal to the depth of the bell socket. Prior to making joint contact, surfaces of collars shall be cleaned and coated with solvents and adhesives. When the spigot end is inserted in the collar of the bell end, it shall bind before reaching the base of the socket. Collar material shall be inert and resistant to both acids and alkalies.

*****(p) Slip joints.–**Slip joints in expansion joints will be permitted. Slip joints shall be made with packing or gasket material or with ground joint brass compression rings. Ground joint brass connections that allow adjustment of tubing but provide a rigid joint when made up shall not be considered as slip joints. Slip joints will be permitted between the stop valve and faucet connection but the stop and pipe size shall not be less than required pipe size indicated for the fixture by Table RS 16-7, but not less than 3/8 inch size nor longer than 18 inches from stop to faucet. Slip joints will be permitted between a tubular fixture trap and the sanitary waste.

******Local Law 63-1976***

****(q) Soldered joints.–**Soldered joints for type "K" or type "L" tube shall be made with fittings. Soldered joints shall be lead-free, as defined in subdivision (j).

*****Local Law 13-1993; Local Law 29-1987; Local Law 63-1976***

(r) Threaded joints.–Threaded joints shall conform to American national taper thread, USASI-B2.1-1960 or FS-GGG-P351a. All burrs shall be removed. Pipe joint cement and paint shall be used only on male threads.

(s) Threadless copper pipe.–Joints in threadless copper pipe for water supply piping shall be made by brazing.

(t) Unions.–Unions shall have metal-to-metal ground seats, and their material shall conform to the type of piping in which they are installed.

(u) Wiped joints.–Joints in lead pipe or fittings, or between lead pipe or fittings and brass or copper pipe, ferrules, solder nipples, or traps, shall be full wiped joints. A wiped joint shall have an exposed surface of at least 3/4 in. on each side of the joint and a minimum thickness of 3/8 in. at its thickest part.

P103.2 Joints Between Different Piping Material.-

(a) Cast iron and copper tube.-Joints between cast iron and copper tube shall be made either by directly caulking the copper tube in to the bell of the cast iron pipe or by using a brass caulking ferrule and properly sweating the copper tube to the ferrule.

(b) Cast iron and vitrified clay.-Joints between cast iron pipe and vitrified clay pipe shall be made either of hot poured bitumastic compound or by a preformed bituminous ring. This ring shall after ramming, completely fill the annular space between the cast iron spigot and the vitrified clay hub.

*****(c) Copper tube and threaded pipe.-**Joints between copper tube and threaded pipe shall be made with brass adapter fittings. The connection between the copper tube and the fitting shall be properly brazed or soldered, and the connection between the threaded pipe and the fitting shall be made with a standard pipe size screw joint.

******Local Law 63-1976***

(d) Threaded pipe and cast iron pipe.-Joints between threaded pipe and cast iron pipe shall be either caulked or threaded, or shall be made with adapted fittings. Threaded piping shall include wrought iron, steel, brass, or copper pipe.

(e) Lead and cast iron, wrought iron, steel, copper or brass pipe.-Joints between lead and cast iron, wrought iron, steel, and copper or brass pipe shall be made by means of wiped joints to a caulking ferrule, soldering nipple, or bushing, or by means of a soil pipe adapter soldered to the copper tube.

(f) Asbestos-cement pipe to metal.-Joints between

asbestos-cement pipe and metal shall be made by means of an adapter coupling which shall be installed as required for cast iron soil pipe.

P103.3 Connections Between Drainage Piping and Certain Fixtures.-Connections between drainage pipe and water closets, floor outlet service sinks, pedestal urinals, earthenware trap standards, or any other fixture with floor outlets, shall be made by means of brass, cast iron or other flanges that are caulked, soldered, or screwed to the drainage pipe. The connection shall be bolted, with a gasket or washer set between the earthenware and the connection. The gasket or washer shall not absorb moisture, break down, or lose its shape when immersed in 160°F water for 5 minutes. The floor flange shall be set on a waterproof, firm base with no rough edges at the hole for drain connection.

P103.4 Tightness.-Joints and connections in the plumbing system shall be made gastight and watertight for the pressure prescribed in the applicable test requirements, with the exceptions of those portions of perforated or open joint piping that are installed underground for the purpose of collecting and conveying ground or seepage water to the storm drains.

P103.5 Waterproofing.-Joints between piping and roof shall be made watertight by the use of lead, copper, aluminum, or other equivalent flashings or flashings material. Exterior wall openings shall be made watertight.

P103.6 Other joints.-Equivalent methods and materials for making pipe joints may be used if approved.

Section P104.0 Plumbing Fixtures

P104.1 Requirements.-

(a) Minimum number of fixtures.-The number of plumbing fixtures required for an occupancy shall be as listed in Table RS 16-5. The requirements for an occupancy not listed in the table shall be subject to approval by the Commissioner.

(b) Facilities for each sex.-Where public toilet or bathing facilities are designed for use by more than one person at a time, separate facilities shall be installed for each sex.

****(c)** In every building where public toilet facilities are provided, there shall be at least one water closet stall for each sex which is accessible to the physically handicapped, at least 3 ft. wide by 5 ft.-6 in. in depth, having a door (if used) that is 32 in. wide and swings out to accommodate a wheelchair. The water closet set*** shall be set 17 to 19 in. above the floor. The stall shall be provided with grab bars on each side, the grab bars shall have an outside diameter of 1 1/2 in., and shall be 33 to 36 in. above and parallel to the floor, with 1 1/2 in. clearance from the wall. One drinking fountain facility, not of the recessed type, shall be provided. The provisions of reference standard RS 4-6 shall supplement the foregoing requirements.

(d) Accessibility.-The fixtures specified in Table RS 16-5 for public buildings shall be located not more than one floor above nor more than one floor below the floor occupied by the people for whose use the fixtures are intended, unless elevator service is available except that in buildings classified in occupancy group E which are accessible to the physically handicapped, there shall be at least one such toilet stall for male and one for female for every 300 occupants of each sex in the building.

*****Local Law 58-1987***

******As enacted, but "seat" probably intended.***

†P104.2 Installation of Fixtures.-

(a) No person shall install any plumbing fixture unless:

(1) such fixture meets the water saving performance standards and product labeling requirements provided in paragraphs b and c of this subdivision; and

(2) such fixture meets the standards as provided for in table 16-1; and

(3) i. the manufacturer has furnished to the commissioner, in such form as the commissioner shall determine, the identification and performance specifications of such fixture, and a certification that such fixture meets the standards as provided for in this section, and the commissioner has included such fixture on the list published pursuant to paragraph d of this subdivision or

ii. such fixture is included on the "list of certified water saving plumbing fixtures" published pursuant to section 15-0314 of the environmental conservation law; however this option shall not apply to water closets and associated flush valves on and after January first, nineteen hundred ninety-two which shall be certified to the commissioner pursuant to item i. of this subparagraph three.

(b) The water-saving performance standards for sink and lavatory faucets, shower heads, drinking water fountains, urinals and water closets shall be as follows:

(1) for sink and lavatory faucets, a constant water pressure of sixty pounds per square inch, and a maximum flow not to exceed three gallons of water per minute; faucet models installed in public buildings or facilities must be of a self-closing variety and shall comply with reference standard RS 4-6;

(2) for shower heads, a constant water pressure of sixty pounds per square inch, and a maximum flow not to exceed three gallons of water per minute;

(3) for urinals and associated flush-valves, if any, each flush shall not exceed one gallon of water per flush;

(4) for water closets and associated flush-valves, if any, each flush shall not exceed three and one half gallons of water per flush except that on and after January first, nineteen hundred ninety-two, each flush shall not exceed one and three-fifths gallons of water per flush; and

(5) drinking water fountains shall be of a self-closing variety and shall comply with reference standard RS 4-6.

(c) Permanent product markings shall be required on all water closets and urinals, or each fixture component if the fixture is comprised of more than one component, located in an easily recognizable location. Such markings

shall be legible, applied so as to be permanent and provide the following information:
i. the manufacturer's name or registered trademark and the model number of the fixture or fixtures; and
ii. the gallon/liter water consumption rate per flush of the water closet or urinal; and
iii. with respect to tank type water closets, a clear marking of and designation for the "water line" shall be located within the tank which shall be set at the level of gallons/liters per flush required for the water closet.
(d) The commissioner shall annually publish a list of fixtures which meets the standards specified in paragraph b of this subdivision which are certified by manufacturers pursuant to i. of subparagraph three of paragraph a and which are not included on the "list of certified water saving fixtures" published pursuant to section 15-0314 of the environmental conservation law. A notice of the availability of such list shall be published in the city record. The commissioner shall delete from such list fixtures which are determined to be inaccurately certified.
(e) The provisions of this subdivision shall not apply to fixtures such as safety showers and aspirator faucets, which in order to perform a specialized function, cannot meet the standards specified in paragraph b of this subdivision.
(f) Access for cleaning.-Plumbing fixtures shall be so installed as to afford easy access for cleaning both the fixture and the area about it. All pipes from fixtures shall be run to the nearest wall, except where it is impractical to do so.
(g) Sealing.-Where fixtures come in contact with wall or floors, the space between the fixture and the wall shall be sealed against water seepage.
(h) Securing floor outlet fixtures.-Floor outlet fixtures shall be rigidly secured to the floor or floor flanges by stainless steel, acetyl plastic, or non-ferrous screws or bolts.
(i) Securing wall-hung bowls.-Wall-hung water closet bowls shall be rigidly supported by a concealed metal supporting member so that no strain is placed on the closet connection.
(j) Water supply protection.-The supply lines or fittings for every plumbing fixture shall be so installed as to prevent backflow. See Section P107.0.
†Local Law 29-1989

P104.3 Overflows.-
(a) Design of overflows.-In any fixture that is provided with an overflow, the waste outlet shall be designed and installed so that the standing water in the fixture cannot rise in the overflow when the stopper is closed, nor shall any water remain in the overflow when the fixture is empty.
(b) Connection of overflows.-The overflow from any fixture shall discharge into the drainage system on the inlet or fixture side of the trap. The overflow from a flush tank serving a water closet or urinal shall discharge into the fixture served.

†P104.4 Water Closets.-
(a) Prohibited water closets.-
(1) Washout, pan, valve, plunger, offset, latrine, and side spud water closets shall be prohibited. Water closets that have an invisible seal, an unventilated space, or walls that are not thoroughly washed at each discharge, shall be prohibited. Any water closet that might permit a siphonage of the contents of the bowl back into the water supply system shall be prohibited.
(2) Frostproof water closets will be permitted by the commissioner for temporary installations only.
(b) Water closets for public use.-Water closet bowls for public use shall be of the elongated type.
(c) Water closets for children's use.-In nurseries, schools, and similar places where plumbing fixtures are provided for the use of children under six years of age, water closets shall be of a size and height suitable for the children's use.
(d) Water closet seats.-Water closets shall be equipped with seats of smooth nonabsorbent material. All seats of water closets provided for public use shall be the open-front type. Integral water closet seats shall be of the same material as the fixture.
(e) Water closet soil pipe connections.-
(1) LEAD CONNECTIONS.-Lead bends and stubs may be used on water closets or similar connections, provided the lead is soldered to the floor flange.
(2) IRON CONNECTIONS.-3 in. iron bends may be used on water closets or similar connections, provided a 4 in. x 3 in. flange is used to receive the fixture horn.
(3) COPPER CONNECTIONS.-3 in. copper bends may be used on water closets or similar connections, provided a 4 in. x 3 in. flange is used to receive the fixture horn.
(4) OTHER TYPE CONNECTIONS.-Connections of other equivalent materials will be permitted.
(5) REDUCING BENDS.-4 in. x 3 in. reducing bends may be used.
†Local Law 29-1989

P104.5 Urinals.-
(a) Prohibited urinals.-
(1) Floor-type trough urinals are prohibited.
(2) Washdown or washout type urinals that have integral strainers are prohibited.
(b) Wall-hung trough urinals.-Wall-hung trough urinals shall be permitted only in temporary locations. They shall be at least 6 in. deep and shall be furnished with one-piece backs and have strainers with outlets at least 1 1/2 in. in diameter. The washdown pipe shall be perforated so as to flush with an even curtain of water against the back of the urinal. This pipe shall be securely clamped as high as practicable to the back of the urinal. Trough urinals shall have tanks with a flushing capacity of at least 1 1/2 gal. of water for each 2 ft. of urinal length. Troughs shall be figured on the basis of one urinal for each 18 in. of length; e.g.,

24 in. trough equals 1 urinal
36 in. trough equals 2 urinals
48 in. trough equals 2 urinals
60 in. trough equals 3 urinals
72 in. trough equals 4 urinals

(c) Surrounding material.-Wall and floor space to a point 1 ft. in front of a urinal lip and 4 ft. above the floor, and at least 1 ft. to each side of the urinal shall be finished with smooth, readily cleanable, nonabsorbent material.

P104.6 Flushing Devices for Water Closets and Urinals.-

(a) Where required.-Each water closet, urinal, clinical sink, or other plumbing fixture that depends on trap siphonage to discharge its waste contents to the drainage system to which it is connected, shall be provided with a flushometer valve, flush tank, or similar device designed and installed so as to supply water in sufficient quantity and rate of flow to flush to the sewer the contents of the fixture to which it is connected, to cleanse the fixture, and to refill the fixture trap in a single flushing operation.

(b) Number of fixtures served.-A flushing device shall serve only one fixture except that a single flushing device may be used to flush more than one urinal when it is designed so that the flushing cycle is controlled automatically and so that each urinal or section thereof is thoroughly flushed.

(c) Flushometer valves.-Flushometers shall be installed so that they will be readily accessible for repair. Flushometer valves shall not be used where the water pressure is insufficient to properly operate them. When the valve is operated, it shall complete the cycle of operation automatically, opening fully and closing positively under the water line pressure. Each flushometer shall be provided with a means for regulating the flow through it. Each flushometer valve supplying a submerged inlet without a required air gap shall be provided with an approved vacuum breaker set at least 4 in. above the overflow rim of the fixture to the critical level marked on the vacuum breaker as determined by test.

(d) Flush tanks.-

(1) WATER SUPPLY.-An adequate supply of water shall be provided to flush and clean the fixture served. The water supply to flush tanks equipped for automatic flushing shall be controlled by a suitable timing device. The water supply to flush tanks equipped for manual flushing shall be controlled by a float valve or other automatic device designed to refill the tank after each discharge and to completely shut off the water flow to the tank when the tank is filled to operational capacity. Provision shall be made to provide an adequate supply of water to the fixture so as to refill the trap seal after each flushing.

(2) BALL COCKS.-Ball cocks in flush tanks for water closets shall be located at least 1 in. above the flood level rim of the bowl connected thereto, and shall be provided with a vacuum breaker.

(3) OVERFLOWS.-Flush tanks shall be provided with overflows discharging to the water closet or urinal connected thereto, and shall be of sufficient size to prevent flooding the tank at the maximum rate at which the tanks are supplied with water.

P104.7 Lavatories.-

(a) Waste outlets.-Lavatories shall have waste outlets at least 1 1/4 in. in diameter.

(b) Multiple-type fixture.-Each 18 in. unit of usable length of a straight-line type multiple-use lavatory and each 18 in. of usable length of a circular type multiple use lavatory shall be considered equivalent to one lavatory for the purpose of determining the drainage and water supply piping sizes and fixture usage requirements provided hot and cold or tempered water suitable for handwashing is available for each 18 in. interval.

P104.8 Bathtubs.-

(a) Waste outlets and overflows.-Bathtubs shall have waste outlets and overflows at least 1 1/2 in. in diameter, and the waste outlet shall be equipped with a suitable stopper.

P104.9 Showers.-

(a) Waste outlet.-Waste outlets serving single showers, other than those in bathtubs, shall be at least 2 in. in diameter, and when serving a gang shower shall be at least 3 in. in diameter. Drains shall have removable strainers with a free area no smaller than the cross-sectional area of the drain pipe connected thereto and openings no smaller than 1/4 in. in minimum dimension. Unless each shower head is provided with an individual waste outlet, the waste outlet must be so located and the floor so pitched that waste water from one shower head does not flow over the floor area serving another shower head.

(b) Shower compartments.-Shower compartments shall have at least 900 sq. in. of floor area and shall be at least 30 in. in minimum dimension measured as the side of a rectangle, altitude of a triangle or other angular shape, or as diameter of a circle, except when a bathtub is used as the shower compartment. The wall area above built-in tubs having installed shower heads and in shower compartments shall be constructed of smooth, noncorrodible, nonabsorbent, waterproof materials to a height of a least 6 ft. above the floor level. Such walls shall form a watertight joint with each other and with either the tub, receptor, or shower floor.

(c) Shower floors or receptors.-Floors or receptors under shower compartments shall be laid on a smooth and structurally sound base. Floors under shower compartments, other than those laid directly on the ground surface or where prefabricated receptors have been provided, shall be lined and made watertight by the provisions of suitable shower pans of durable material. Such pans shall turn up on all sides at least 2 in. above the finished shower floor level. Pans shall be securely fastened to the waste outlet at the seepage entrance, making a watertight joint between the pan and the outlet. Floor surfaces shall be constructed of smooth, noncorrodible, nonabsorbent, and waterproof materials.

P104.10 Sinks.-

(a) Waste outlets.-Sinks shall be provided with waste outlets at least 1 1/2 in. in diameter.

*(b) **Food waste disposals.—**Sinks equipped with food waste disposals shall have waste outlets at least equal to the opening in the disposals.

Local Law 74-1995

P104.11 Dishwashing Machines.-

(a) General.-A separate trap shall be provided for a dishwashing machine that drains by gravity.

(b) Domestic machines.-Machines having drainage pumps may discharge into the waste outlet piping of an adjacent kitchen sink by means of a wye branch fitting on the inlet side of the sink trap, provided the pump discharge line rises to an elevation above the flood level rim of the sink and is at least 3/4 in. in diameter.

(c) Water connections.-Water connections to a dishwasher shall be provided with an air gap or an approved vacuum breaker and check valve.

(d) Commercial dishwashers.-Commercial dishwashing machines shall be provided with an adequate supply of 140°F to 160°F wash water, and with rinse water or steam at temperature of at least 180°F for sterilization. Chemical disinfection may be used in lieu of the 180°F water or steam when the method of disinfection meets the requirements of the department of health.

P104.12 Automatic Clothes Washers.-

(a) The water supplies to an automatic clothes washer shall be protected against the hazards of contamination by means of an adequate air gap or a vacuum breaker.

(b) The discharge waste pipe of domestic clothes washers shall be provided with an air break by spilling the discharge into an open standpipe that is provided with a 2 in. trap. The trap shall be properly vented or connected to an indirect waste pipe that may be common to other automatic clothes washers located in a common laundry room.

(c) The discharge waste pipe of commercial clothes washers shall discharge into a trench provided with trapped and vented drains.

P104.13 Laundry Trays.-Each compartment of a laundry tray shall be provided with a waste outlet at least 1 1/2 in. in diameter.

P104.14 Garbage Can Washers.-

(a) The drain outlet receiving the wash from garbage cans shall be at least 3 in. and shall be provided with a removable basket or strainer to prevent discharge of large particles into the building drainage system.

(b) Water supply connections shall be provided with an air gap or an approved backflow prevention device and check valve.

P104.15 Fixture strainers.-Plumbing fixtures except water closets, urinals, or similar fixtures shall be provided with durable crossbars, strainers, or other similar devices installed in the fixture waste outlet. Such strainers shall have waterway areas adequate for rapid fixture drainage.

P104.16 Drinking Fountains.-

(a) Construction.-Drinking fountains shall conform to ASA-Z4.2-1942.

(b) Equivalent fixtures.-A lavatory located in a room with not more than one water closet or urinal will be an acceptable equivalent for a drinking fountain for the purpose of fixture requirements.

(c) Prohibited drinking fountains.-No electric coolers that have precooling coils inside of the waste outlets will be permitted except as hereinafter provided. The precoolers must be of double wall construction and mounted in a vertical position directly below a removable strainer in the cooler top and the precooler shall be fully accessible for cleaning with an ordinary bottle brush. Except for a water spreader at the entrance of the precooler drain tube, no internal dimension of the drain passage shall be less than 3/4 in.

P104.17 Floor Drains.-

(a) Location.-The floor drain shall be located so as to be readily accessible at all times.

(b) Strainers.-Floor drains shall be provided with removable strainers, the open area of which shall be at least equal to the cross-sectional area of the drain pipe to which the drain connects. Combination funnel and floor drain strainers will be permitted.

(c) Size.-Floor drains shall be of a size to efficiently serve the purpose for which they are intended, but the outlet pipe shall not be less than 3 in. in nominal diameter.

(d) Provision for evaporation.-Traps for floor drains shall be of the deep seal type, and shall have a water supply available from a plumbing fixture located in the same room or from a faucet or valved outlet located not more than 3 ft. above the floor drained. Automatic priming devices will be permitted only when an air gap is provided between the potable water supply and the water supply for the drain**.**

(e) Traps.-Machinery or equipment room floor drains that receive clear water only may be connected to a single trap where such trap is located not more than 15 ft. from the farthest drain.

P104.18 Drains for Drip Pipes. -See section P108.11.

P104.19 Funnel Drains.-When the trap is located above the floor, the funnel drain shall be individually vented. Funnel drains shall only be used for clear water wastes.

P104.20 Special Plumbing Fixtures.-

(a) Water connections.-Baptisteries, ornamental and lily pools, aquaria, ornamental fountain basins, swimming pools, and similar constructions, when provided with water supplies, shall be protected from back-siphonage in conformity with the code requirements.
(b) Approval.-Specialties requiring water and waste connections shall be subject to approval by the Commissioner.

Section P105.0 Traps and Cleanouts

P105.1 Fixture Traps.-
(a) Separate traps for each fixture.-Each plumbing fixture shall be separately trapped by a water seal trap placed as close as possible to the fixture outlet, but not more than 2 ft. horizontal developed length from the outlet of the fixture. The vertical distance from the fixture outlet to the trap weir shall not exceed 48 in. No fixture shall be double trapped. Exceptions to the separate trapping requirements are as follows:
(1) Fixtures having integral traps.
(2) A combination plumbing fixture may be installed on one trap provided one compartment is not more than 6 in. deeper than the other and the waste outlets are not more than 30 in. apart, and provided the trap is centrally located between the waste outlets.
(3) One trap may be installed for a three compartment sink, three single laundry trays, or a combination of one sink and two trays immediately adjacent to each other in the same room, provided the trap is centrally located between the three sections.
(4) A domestic dishwasher located with a developed length of drain not more than 3 ft.-6 in. from the trap serving a kitchen sink or combination sink and tray may be connected to the fixture side of the sink trap. A dishwasher may also be connected as stated in section P104.11(b).
(5) No trap need be provided at fixtures and equipment that discharge their wastes indirectly into a trapped receptacle through a drainage pipe not exceeding 8 ft. in developed length, measured from the drainage outlet. No traps shall be provided for safety relief apparatus, condenser blow-offs, and similar drain lines.
(b) Fixture trap sizes.-Fixture trap sizes (nominal diameter) shall be sufficient to drain the fixture rapidly and in no case less than the sizes given in Table RS 16-6. No trap shall be larger than the drainage pipe into which it discharges.
(c) Prohibited traps.-The following types of traps are prohibited:
(1) Traps that depend upon moving parts to maintain their seal.
(2) Bell, pot, bottle traps, and traps with interior partitions.
(3) Crown vented traps.
(4) Traps constructed of masonry.
(5) Catch basins located within the building.
(d) Design.-All fixture traps, except grease and sediment interceptors, shall be self-scouring. Traps integral with the fixtures shall have a uniform interior and smooth waterway. Traps shall have no interior partitions except where such traps are integral with the fixture or are designed as interceptors. Slip joints or couplings may be used on the inlet side of the trap and a ground joint union connection may be installed in the trap seal.
(e) Seals.-Each fixture trap shall have a liquid seal of at least 2 in. but not more than 4 in.
(f) Setting and protection.-Traps shall be set level with respect to their water seals and, where necessary, shall be protected from freezing and evaporation.

***P105.2 Building (House) Traps.-**Shall be installed on all building drains near the foundation wall of the structure, inside of the street line, and on the sewer side of all connections, except the connection used to receive the discharge from a sewage ejector, oil separator or leader on combined systems. If such trap is placed outside of the foundation wall or below a cellar floor, it shall be made accessible in a manhole with a cover, or by extension of the two handholes that shall be provided with cleanouts at the cellar floor or grade. Handhole extensions shall be not more than 18 in. above the centerline of the drain. Building (house) traps shall be the same size as the building house drain connected thereto. Where manufactured cast iron traps are not available AWWA cast iron water pipe or ductile iron may be used for house traps if the trap is made with long turn fittings and TY's.
****Local Law 63-1976***

*TABLE 16-5 MINIMUM NUMBER OF PLUMBING FIXTURES REQUIRED[a]

Type of Building Occupancy	TYPE OF FIXTURE					
	Water Closets	Urinals	Lavatories	Bathtubs or Showers	Drinking Fountains	Other Fixtures
Assembly – places of worship[b]	1 for each sex for each 150 persons	Urinals may be provided in toilet rooms in lieu of water closets but for not more than 1/2 of the required number of water closets	1			
Assembly – other than places of worship (including but not limited to auditoriums, theaters, convention halls) and all spaces classified as F-4	No. of Persons / No. of Fixtures for each Sex 1-100 / 1 101-200 / 2 201-300 / 3 301-400 / 4 Over 400, add 1 fixture for each sex for each additional 200 persons	Urinals may be provided in toilet rooms in lieu of water closets but for not more than 1/2 of the required number of water closets	No. of Persons / No. of Fixtures 1-200 / 1 201-400 / 2 401-750 / 3 Over 750, add 1 fixture for each 500 persons		1 for each 1,000 persons except that there shall be at least 1 fixture at each assembly floor, level or tier	Where motion picture projection booths contain more than 2 projectors, at least 1 water closet and 1 lavatory shall be provided on the same level and within 20 ft. of the booth
Dormitories – schools or labor, also institutional	1 for each sex for each 8 persons	Urinals may be provided in toilet rooms in lieu of water closets but for not more than 1/2 of the required number of water closets	1 for each 12 persons	1 for each 8 persons: for women's dormitories, 1 bathtub shall be substituted for 1 shower at the ratio of 1 for each 30 women		Laundry trays – 1 for each 50 persons
Single room occupancies for sleeping accommodations only	1 for each 6 persons		1 for each 6 persons	1 for each 6 persons		
Dwellings- one- and two-family	1 for each dwelling unit		1 for each dwelling unit	1 for each dwelling unit		Kitchen sink— 1 for each dwelling unit
Public buildings, offices, business mercantile, storage; warehouses, factories and institutional employees[c]	No. of Persons for each sex / No. of Fixtures 1-15 / 1 16-35 / 2 36-55 / 3 56-80 / 4 81-110 / 5 111-150 / 6 1 fixture for each additional 40 persons	Urinals may be provided in toilet rooms in lieu of water closets but for not more than 1/2 of the required number of water closets when more than 35 persons	No. of Persons / No. of Fixtures 1-20 / 1 21-40 / 2 41-60 / 3 61-90 / 4 91-125 / 5 1 fixture for each additional 45 persons		1 for each 75 persons	
Public bathing	1 fixture for each sex for each 30 persons	Urinals may be provided in toilet rooms in lieu of water closets but for not more than 1/2 of the required number of water closets	1/60	1/40		

***TABLE 16-5 MINIMUM NUMBER OF PLUMBING FIXTURES REQUIRED[a]** (Continued)

Type of Building Occupancy	TYPE OF FIXTURE					
	Water Closets	Urinals	Lavatories	Bathtubs or Showers	Drinking Fountains	Other Fixtures
Schools: Elementary Secondary	1 fixture for each sex for each 35 students	Urinals may be provided in toilet rooms in lieu of water closets but for not more than 1/2 of the required number of water closets	1/50 pupils 1/50 pupils Over 300 pupils 1/100 pupils	In gym or pool shower rooms, ¼ pupils of the largest class using pool at any one time	1/50 persons but at least 1 per floor	
Workers portable facilities	1/30 workers	1/30 workers			At least 1 per floor equivalent for each 100 workmen	
Industrial - foundries only	No. of Persons / No. of Fixtures 1-10 / 1 11-25 / 2 26-50 / 3 51-80 / 4 81-125 / 5 1 additional fixture for each additional 45 persons	Where more than 10 men are employed: No. of Men[c] / No. of Urinals 11-29 / 1 30-79 / 2 1 additional fixture for each additional 80 males. Urinals may be provided in toilet rooms in lieu of water closets but for not more than ½ of the required number of water closets	No. of Persons / No. of Fixtures 1-8 / 1 9-16 / 2 17-30 / 3 31-45 / 4 46-65 / 5 1 additional fixture for each additional 25 persons	1 shower for each 15 persons exposed to excessive heat or occupational hazard from poisonous, infectious, or irritating material	1 for each 75 persons	
Hospital and Institutions, See Section P114.0						
Swimming pools, See Section P116.0						Other Fixtures
Kitchens for public or employees dining			1 lavatory for the personal use of kitchen employees			One machine or a 3-compartment sink for the effective washing and sanitizing of all cutlery, dishes and glasses before re-use.
Dwellings—multiple or apartment	1 for each dwelling unit or apartment		1 for each dwelling unit or apartment	1 for each dwelling unit or apartment		Kitchen sink- 1 for each dwelling unit or apartment. Within each dwelling unit, not designed for use by transients, one laundry tray or automatic laundry washing machine; or in a readily accessible location within a general laundry room, 1 two-compartment tray for each 10 dwelling units or 1 automatic laundry washing machine for each 20 dwelling units.

Notes for Table 16-5:

[a]The population used in determining the number of fixtures required shall be based on the number of people to occupy the space but in no case shall the population be less than that determined by allowing 125 sq. ft. of net floor area per person.

[b] Such facilities may be in adjacent buildings under the same ownership or control, and shall be accessible during periods when the assembly space is occupied.

[c] Facilities for employees in a storage building or warehouse may be located in an adjacent building, under the same ownership, where the maximum distance of travel from the working space to the toilet facilities does not exceed 500 ft. horizontally.

Local Law 45-1984; Local Law 61-1969

TABLE 16-6 MINIMUM SIZE OF FIXTURE TRAPS FOR VARIOUS TYPES OF PLUMBING FIXTURES

Fixture	Trap Size[a,b] (In.)
Bathtub (with or without overhead shower)	1 1/2
Bidets (see section P107.13)	1 1/2
Combination sink and wash (laundry) tray	2
Dental unit or cuspidor	1 1/2
Drinking fountain	1 1/2
Dishwasher, commercial	2
Dishwasher, domestic	1 1/2
Floor drain	3
Funnel drain	1 1/2
Kitchen sink, domestic	2
Laboratory, cup sink	1 1/2
Laboratory, sink	2
Lavatory, common	1 1/2
Lavatory, barber shop, beauty parlor or surgeon's	1 1/2
Lavatory, multiple type (wash fountain or wash sink)	1 1/2
Laundry tray (1 or 2 compartments)	1 1/2
Shower, stall	2
Shower, gang	3
Sink (surgeon's)	1 1/2
Sink (flushing rim type, flush valve supplies)	3
Sink (service type with trap standard)	3
Sink, commercial (pot, scullery, or similar type)	2
Sterilizers	1 1/2
Urinal (pedestal)	3
Urinal (stall type)	2
Urinal (wall lip type)	2
Urinal (women's)	3
Water closet (waste outlet)	3

Notes-

[a] Size of outlet, the inlet size of trap same as outlet from fixture.

[b] Size of three lavatory equivalents-2 in. for more than three.

P105.3 Drainage Pipe Cleanouts.-

(a) Location.-Cleanouts shall be not more than 50 ft. apart in horizontal drainage lines.

(b) Underground drainage.-Cleanouts, when installed on an underground drain, shall be extended vertically and made accessible at the floor, grade, or wall.

(c) Change of direction.-Accessible cleanouts shall be installed at each change of direction greater than 45^{o} on all horizontal pipes of the drainage system**.**

(d) Base of stacks.-A cleanout shall be provided at, or near, the foot of each vertical inside leader and waste or soil stack.

(e) Direction of flow.-Every cleanout shall be installed so that the cleanout opens in the direction of flow of the drainage line or at right angles thereto.

(f) Size.-Cleanouts shall be of the same nominal size as the pipes for pipes up to 4 in., and not less than 4 in. for larger piping.

(g) Clearances.-

(1) Cleanouts on 3 in. pipes or larger shall be installed so as to provide clearance of at least 18 in. for the purpose of rodding.

(2) Cleanouts smaller than 3 in. shall be installed so as to provide a 12 in. clearance for rodding.

(h) Kept uncovered.-Cleanout plugs shall not be covered with cement, plaster, or any other permanent finishing material. Where it is necessary to conceal a cleanout plug, a covering plate or access door shall be provided that will permit ready access to the plug.

(i) Equivalent cleanouts.-Fixtures with integral traps, such as water closet and pedestal urinals, or a fixture trap that is readily removable without disturbing concealed roughing work, may be used as a cleanout providing there is no more than one 90 degree bend or sanitary tee on the line to be rodded.

P105.4 Interceptors, Separators, and Neutralizing Pits.-

(a) Interceptors required.-Interceptors or neutralizing facilities of required size and type shall be provided, as

specified herein, for extracting oil, grease, sand, and other substances, harmful or hazardous to the building drainage system, the public sewers, or sewer system as defined in the regulation and the industrial waste permit issued by the department of public works.

(b) Interceptors not required.-A grease interceptor is not required for individual dwelling units or any private living quarters.

(c) Separators required.-At repair garages, gasoline stations with grease racks, grease pits, work racks, and at factories where oily and/or flammable liquid waste are produced, separators of required size and type shall be installed into which all oil-bearing, grease-bearing, and/or flammable wastes shall be discharged before emptying into the building drainage system or other point of disposal. A sand interceptor shall be provided for auto laundries, and no oil separator shall be required.

(d) Grease interceptors.-

(1) COMMERCIAL BUILDING.-A grease interceptor, meeting the provisions of this reference standard, shall be installed in the waste line leading from pot sinks, scullery sinks, food scrap sinks, floor drains receiving waste or spillage from soup or stock kettles, and the scraper section of commercial dishwashers in all restaurants, kitchens, cafeterias, clubs, or other establishments where grease can be introduced into the drainage system. No rinse water at a temperature of 180^0 F or higher shall discharge through the interceptor.

(2) NUMBER OF GREASE INTERCEPTORS.-One interceptor shall be permitted for all fixtures requiring the interceptor, provided it is individually trapped and vented, and an additional vent is installed at the interceptor, and provided the size of the interceptor is sufficient to accommodate all of the fixtures connected thereto.

(3) USE AS A TRAP.-The interceptor may be used in lieu of an individual fixture trap if the developed length from the fixture outlet to the inlet of the interceptor is not more than 48 in.

(4) CAPACITY.-Grease interceptors shall have a grease retention capacity, in lbs. equal to at least twice the numerical flow-through rating in gpm (i.e., 2 gpm=4 lbs.). The minimum flow-through rating of grease interceptors shall be equal to the maximum value of all sinks and receptacles that may flow simultaneously through the interceptor divided by the average time for the sinks and receptacles to empty. Interceptors shall remove an average at least of 90 percent of the grease of other extractable matter in the waste water and shall conform with the requirements of the department of public works.

(5) MATERIAL.-All prefabricated grease interceptors shall be approved.

(e) Oil and flammable liquids separator.-

(1) SEPARATION OF LIQUIDS.-A mixture of light and heavy liquids having various specific gravities, such as petroleum hydrocarbons in water, may be treated and then separated in a receptacle complying with the provisions of this reference standard.

(2) DESIGN OF SEPARATOR.-

a. Overall requirements.-Oil separators shall have a depth of at least 2 ft. below the invert of the discharge drain connected thereto. The outlet opening of the separator shall have at least an 18 in. water seal.

b. Motor vehicle occupancies.-In automotive service stations, automotive repair shops, and public garages (group I) where not more than four motor vehicles are both serviced and stored, separators shall have a minimum capacity of 6 cu. ft. and 1 cu. ft. capacity shall be added for each vehicle up to ten vehicles. Above ten vehicles, the size of the separator shall be determined by an architect or engineer, subject to the approval of the Commissioner. Where vehicles are serviced only and not stored, separator capacity shall be based on net capacity of 1 cu. ft. for each 100 sq. ft. of surface to be drained into the separator, with a minimum of 6 cu. ft.

c. Other occupancies.-In other buildings where oil or other flammable liquids are stored or used, no physical connection or internal arrangement that could permit the accidental or deliberate introduction of such materials directly or indirectly into the sewer system will be permitted. Where such substances might overflow by spillage or other circumstance not attributable to a direct connection of the plumbing system, every precaution shall be taken through the presence of protective dikes and similar devices to prevent such substances from reaching the public sewers.

(3) VENTING.-Oil separators shall be vented in accordance with Section P105.6.

(4) CONNECTION TO SEWER.-The discharge of an oil separator shall be independently connected to the street sewer or to the sewer side of the house trap. Where the oil separator is located below the street sewer, the sump receiving the effluent from the separator shall be gastight and vented in the same manner as the separator.

(5) OIL STORAGE TANK.-Each separator shall have an oil storage tank available for storing the residue from the separator. Tanks shall be installed in accordance with Article 14.

P105.5 Interceptors, Separators, and Neutralizing Pits for Specific Services.-

(a) Sand interceptors-commercial establishments.-Sand and similar interceptors for heavy solids shall be so designed and located as to be readily accessible for cleaning, and shall have a water seal of at least 6 in.

(b) Laundries.-Commercial laundries shall be equipped with an interceptor having a wire basket or similar device that is removable for cleaning, and that will prevent passage into the drainage system of any solids 1/2 in. or larger in size, or strings, rags, buttons, or other materials detrimental to the public sewerage system. Interception within a trough will be permitted.

(c) Bottling establishments.-Bottling plants shall discharge their process wastes into an interceptor that will intercept broken glass and other solids before discharging liquid wastes into the drainage system.

(d) Slaughter houses.-Slaughtering room and dressing room drains shall be equipped with separators or interceptors that shall prevent the discharge into the drainage system of feathers, entrails, and other materials likely to close the drainage system.

(e) Laboratories, dyeworks, and chemical plants.-In establishments discharging sewage, industrial wastes, or other wastes that will reduce the pH value of the waste water discharged to the public sewer system below 4.5 or raise it to above 11.5 at the point or points of such discharge, provisions shall be made for neutralizing such waste water to conform with the regulations of the department of public works. Where applicable, a suitable neutralizing pit shall be installed that is of sufficient capacity to hold an adequate quantity of marble chips or similar neutralization substance to satisfactorily bring the pH value of the waste water to acceptable values. Baffles and other flow guiding devices may be introduced to insure that the acid or alkaline wastes are thoroughly contacted by the neutralizing substance. The venting arrangement for this pit shall be in conformance with the applicable provisions of this code.

P105.6 Venting of Interceptors, Separators, and Neutralizing Pits.-

(a) Oil interceptors and separators.-

(1) Interceptors and separators shall be so designed that they will not become air bound if closed covers are used. Each interceptor or separator shall have an individual 3 in. vent extending from the top of the separator to the outside air at a point at least 12 ft. above street level.

(2) A fresh air inlet shall be provided from the drain line at the inlet side of the separator to the outside air at a point at least 6 in. above grade.

(3) A separator shall be accepted in lieu of a house trap.

(4) The horizontal drain line and at least one stack shall be at least 3 in. in diameter. Stack shall be carried full size through the roof.

(b) Neutralizing pits and interceptors (other than oil).-Interceptors, separators, and neutralizing pits shall be so designed that they will not become air bound if closed covers are used. Each interceptor that is provided with a cover shall be vented, and the vent may connect into the sanitary vent system.

P105.7 Accessibility of Interceptors, Separators and Neutralizing Pits.-Each interceptor, separator, and neutralizing pit shall be so installed that it is readily accessible for removing the cover, for servicing, and for maintenance.

P105.8 Maintenance of Interceptors, Separators, and Neutralizing Pits.-Interceptors, separators, and neutralizing pits shall be maintained in efficient operating condition by periodic removal of accumulated grease, scum, oil, or other floating substances, and solids deposited in the interceptor, separator, or neutralizing pit. Improper maintenance of interceptor, separator, or neutralizing pit may constitute sufficient cause for revocation of the industrial waste permit for the premises issued by the department of public works or may constitute a violation of the fire prevention code.

P105.9 Backwater Valves.-

(a) Fixtures and area drains subject to backflow.- Where fixtures, floor drains, or area drains are subject to overflow as the result of backwater from the public sewer system, accessible backwater valves shall be installed in the fixture drain pipe from such fixture, in the branch drain to such area drain or group of fixtures, or in the building drain at its point of exit from the building and downstream from the building trap. Masonry access manholes shall be provided when the centerline of any drain line is 18 in. or more below a slab on grade.

(b) Design.-Backwater valves shall provide a positive mechanical seal against backwater, and when fully opened shall have the same discharge flow capacity as the pipe in which it is installed. All bearing parts shall be made of corrosion resistant metal or other equivalent material. The flap shall be so designed as to hang partially open when not subject to backwater pressure.

P105.10 Industrial Wastes Sampling Manholes.-All premises intended for the discharge of sewage, industrial wastes, or other wastes with characteristics that do not conform to those prescribed for normal sewage as defined in regulations promulgated by the department of public works, shall contain a suitable common control manhole into which all flow of sewage, industrial wastes, or other wastes are combined. When the installation of such a common manhole is impossible, impractical, or will interfere with treatment facilities required for the issuance of an industrial waste permit by the department of public works, the owner of such premises shall construct, in lieu of the common manhole, two or more manholes as required by the department of public works, for accurate measurement of all flows of sewage, industrial wastes, or other wastes before discharging from such premises into the sewer system.

Section P106.0 Hangers and Supports

P106.1 Material.-Hangers, anchors, and supports shall be of metal or equivalent material of sufficient strength to support the piping and its contents. Piers may be of concrete, brick, or equivalent material.

P106.2 Attachment to Building.-Hangers and anchors shall be securely attached to the building construction at sufficiently close intervals to uniformly support the piping and its contents.

P106.3 Intervals of Supports.-

(a) Vertical piping.-Vertical piping of the following materials shall be supported, using either guide or friction hangers or a combination of both, at the following intervals:

(1) Cast iron soil pipe at base and at each story height, but in no case at intervals greater than 20 ft.
(2) Threaded pipe (SPS).-At every other story height, but in no case at intervals greater than 25 ft.
(3) Copper tubing (hard temper).-At each story height.
(4) Other materials.-As required for structural stability and service.

(b) Horizontal piping.-Horizontal piping of the following materials shall be supported at intervals no greater than the following:
(1) Cast iron soil pipe.-At 5 ft. intervals and behind every hub.
(2) Threaded pipe (1 in. or less).-At 8 ft. intervals.
(3) Threaded pipe (1 1/4 in. or over).-At 12 ft. intervals.
(4) Copper tubing (1 1/4 in. or less).-At 6 ft. intervals.
(5) Copper tubing (1 1/2 in. or over).-At 10 ft. intervals.
(6) Other materials.-As required for structural stability and service.

(c) Base of stacks.-Bases of cast iron stacks shall be supported on concrete, on brick laid in cement mortar, by metal brackets attached to the building construction, or by equivalent methods. Stacks of other material shall be anchored so as to relieve the load from the base of the stack.

***P106.4 Installation of no-hub type cast iron soil pipe, fittings, and couplings.-**
All installations of no-hub type cast iron soil pipe, fittings and couplings shall comply with the following:
CISPI Designation 310-1985 Specification for Cast Iron Soil Pipe Institute's Approved Coupling for Use in Connection with Hubless Cast Iron Soil Pipe and Fittings for Sanitary and Storm Drain, Waste, and Vent Piping Applications.
Local Law 100-1989

Section P107.0 Water Supply and Distribution

P107.1 Permits.-
(a) Permits for all water supplies for all buildings or for demolitions shall be obtained from the department of water supply, gas, and electricity. The installation of the water service system from the street main up to and including the meter setting when meters are required, or up to the house control valve when no meters are required, shall be subject to inspection and approval by the department of water supply, gas and electricity.
(b) Permits for sidewalk and street openings shall be obtained from the department of highways.

P107.2 Water Service.-

(a) Taps to city water mains.-
(1) SEPARATE SUPPLY.-A separate tap and service shall be installed for each building fronting on a street in which there is a city (street) water main, and no consumer will be allowed to supply water to other persons or premises, except in a project where more than one building under a single ownership is supplied from a common house tank or booster system located in or on one of the buildings.
(2) CONNECTIONS TO CITY (STREET) MAINS.-Corporation stops, wet connections, or other connections to a street main shall be made only by the department of water supply, gas and electricity employees. The cost of the installation shall be borne by the owner of the property for which the connection is made.
(3) DESTRUCTION OF ABANDONED CORPORATIONS STOPS AND WET CONNECTIONS.- All driven corporation stops, when abandoned, shall be removed and replaced by plugs. All wet connections or screw corporation stops, when abandoned, shall be destroyed in place, and all exposed portions of the service pipe shall be cut and removed. Where a corporation stop or wet connection is destroyed and the connecting service pipe is one that is equipped with a curb valve and box, the curb box shall be removed. The expense in connection with the abandonment or destruction of a corporation stop or wet connection shall be chargeable to the owner of the property into which the service pipe entered.

(b) Service.-
(1) SERVICE PIPES, DEFINITION.-See Section P100.0.
(2) SIZE OF TAPS AND WATER SERVICE.-The size of service pipe to supply a premise shall be based upon the water demand load of the premises as determined by "fixture units". "Fixture units" shall conform to the requirements of the department of water supply, gas, and electricity. In premises used for commercial and industrial purposes where it is not feasible to determine the size of the service pipe on the basis of "fixture units," the size of the service pipe shall be based upon the water demand load of the premises. The minimum size service shall be 1 in. in diameter, and the gooseneck shall be the same size as the service pipe.
(3) SIZE OF FIRE LINE SERVICE.-Sizes of connections for fire service shall be subject to the requirements of the department of water supply, gas, and electricity.
(4) SEPARATION OF WATER SERVICE AND BUILDING SEWER.-Except as permitted below, the underground water service and the building sewer shall be at least 10 ft. apart horizontally, and shall be separated by compacted earth. The water service may be placed in the same trench with the building sewer and building drain under the following conditions:
a. The sewer is of cast iron with leaded or mechanical joints.
b. The bottom of the water service, at any point, shall be at least 12 in. above the top of the sanitary or combined sewer line.
c. The water service shall be placed on a continuous shelf of compacted earth, excavated at one side of the common trench.
d. The water service pipe shall have a minimum number of joints.
(5) WATER SERVICE NEAR SOURCES OF POLLUTION.-Potable water service pipes shall not be located in, under, or above any cesspools, septic tanks, septic tank drainage fields, or seepage pits. A separation of 10 ft. horizontally shall be maintained.
(6) PROTECTIVE COVER FOR SERVICE PIPE.-All

water services shall be installed and maintained at a depth of at least 4 ft. below the finished outside ground surface. Where a service pipe has less than 4 ft. of cover due to subsurface conditions, it shall be insulated and protected as required by the department of water supply, gas, and electricity.

(7) INSTALLATION OF SERVICE PIPE.-Each new service pipe shall be laid in a straight line at right angles to the street main and extending from the tap to the main house-control valve. Where the surface or subsurface conditions make it impracticable to install a service pipe in accordance with the above conditions, it may be laid differently provided a sketch or plan showing the proposed alternate location of the service pipe is submitted to and approved by the department of water supply, gas and electricity. The driving of a service pipe through the ground is prohibited.

**(8) GOOSENECKS ON SERVICE PIPE.-

Connections to the city main by cast iron or ductile iron pipe may be made directly; no offset swing joint will be required. Each copper tubing service pipe shall have an excess of at least 3 ft. of pipe formed in a gooseneck at the connection to the tap and laid to the right side, facing the tap. Each brass or copper service pipe shall have, at the tap or wet connection, a copper tubing gooseneck of at least 3 ft. of pipe, or an offset swing joint consisting of four elbows and three pieces of pipe each at least 2 ft. in length, laid to the right side, facing the connection.

Where buildings are constructed on pile foundations or other unyielding supports, the service pipes of material other than cast iron or ductile iron shall have two goosenecks, one at the tap and one immediately outside the building. A sleeve shall be installed to carry the service through the foundation wall.

*****Local Law 29-1987***

(9) CURB VALVES.-Curb valves shall be installed on all fire service pipes. They shall be installed on all domestic service pipes over 2 in. in diameter and at the option of the owner, on service pipes 2 in. or less in diameter. The curb valves and boxes shall be set in the service pipe in the sidewalk area at the curb or within 2 ft. of the curb. Curb valves shall be of the gate type nonrising stem valve, designed for a minimum of 150 psi wwp.

Access to all curb valves installed shall be provided by a tar coated iron extension box with cover, and the cover shall be flush with the sidewalk level. Curb valves 2 in. and less in diameter may be equipped with a wheel for operation, provided a permanent 1/2 in. diameter iron rod is attached thereto and extended to the top of the curb box. No curb valve shall be installed in a driveway.

Curb valves larger than 2 in. in diameter shall be equipped with an operating nut at least 1 1/4 in. square and no extension rod need be attached thereto. Such operating nut may be installed on curb valves 2 in. and less in diameter at the option of the owner.

In sprinkler and fire line installations, the location of the sidewalk control valve shall be governed by the provisions of the building code.

(10) CLEARANCE.-Clearance shall be provided around a water service pipe passing through a wall to protect it against the following:

a. Chemical action from direct contact with concrete.

b. Distortion or rupture of water service pipe from shearing action due to settlement.

c. Distortion or rupture of the water service pipe caused by expansion or contraction.

Clearance shall not be less than 1/2 in. between the outside of the pipe and the wall. Sleeves or arches may be used to provide the wall opening. The space between the pipe and the wall structure or the sleeve shall be carefully packed or caulked with lead or waterproof material resistant to vermin and rodents.

(11) TEST OF SERVICE OF SERVICE PIPE.-In the presence of the tapper or inspector of the department of water supply, gas, and electricity, each new service pipe or repaired service pipe shall be subjected to a water test made under the street main pressure. All pipes and appurtenances shall remain uncovered for the duration of the test and shall show no sign of leakage. When any question arises as to the installation conforming with these regulations, an internal hydrostatic test as specified for materials may be applied, subject to the approval of the department of water supply, gas, and electricity.

***(12) HOUSE CONTROL VALVES.-The house control valve shall be of the gate or full port ball type, and shall be placed in the service pipe inside the building within 2 ft. of the building foundation wall and located so as to be accessible at all times. All valves shall be designed for a minimum of 150 psi and gate valves may be of the outside screw and yoke type.

******Local Law 10-1999.***

P107.3 Meters.-

(a) Where required.-

(1) BUILDINGS UNDER CONSTRUCTION.-All water used in the construction of buildings 75 ft. or six stories or more in height shall be metered. Prior to the commencement of actual building construction, a meter of proper size shall be installed on each tap or service supplying the premises. It shall be placed in an accessible location close to the point of entry of the service pipe, as designed by the department of water supply, gas and electricity. Each meter shall be enclosed in a vault or box capable of providing adequate protection against damage or injury from frost or any other cause. Each meter shall remain in service throughout the entire period of building construction, and thereafter until such time as the annual water charges for the structure becomes effective or the permanent meter has been installed. No permit will be issued for the installation of a meter to register the supply of water used for the construction of a building six stories in height or less. Such water will be charged for as required by the department of water supply, gas, and electricity.

*(2) FIRE LINES. Combined fire/domestic service for

new sprinkler systems in residential buildings up to six stories or seventy-five feet in height may use one fire-rated compound meter on the combined service or a standard displacement meter on the domestic branch and a detector check valve assembly on the fire branch. If a fire-rated compound meter is used, it shall be certified or listed by the Underwriters Laboratories or The Factory Mutual System or an equivalent national listing organization.

Reference to Local Law 5-1973 removed by Local Law 10-1999.

(3) REFRIGERATION AND AIR CONDITIONING.-Where the rate of water required for operation of refrigeration and air conditioning apparatus exceeds 1/2 gpm, the building supply shall be metered, as required by the department of water supply, gas, and electricity.

(4) MISCELLANEOUS FIXTURES.-The following fixtures or devices shall not be installed or used except where the supply of water to the fixture or devices is metered or connected to a metered distribution system: display fountains containing over 1,000 gal. of water; aquariums containing over 300 gal. of water; irrigation systems; swimming tanks, wading pools, or plunge baths containing more than 5,000 gal. of recirculated water; or hydrotherapy devices requiring the use of city water for their operation.

(b) Location of meters.-In all premises where the supply of water is to be fully metered, the meter shall be set within 3 ft. of the building foundation or vault wall at the point of entry service pipe. The service pipe between the house control valve and the meter shall be kept exposed. When a building is situated in back of the street line or when conditions exist in a building that prevent the setting of the meter at a point of entry, the meter may be set outside of the building within the property line, provided the meter is installed in an accessible, watertight, and frost-proof pit or meter box. All meter locations shall be subject to approval by the department of water supply, gas, and electricity.

(c) Setting of meters.-In setting or resetting a meter, the requirements are as follows:

(1) The meter shall be set so that the dial faces upward and is horizontal. The dial shall not be more than 3 ft. above the floor.

(2) Connections shall be made by a coupling, union, or flange union on both the inlet and outlet end of the meter and bored for sealing with holes at least 3/32 in. in diameter. Union or couplings that would permit removing the meter setting without breaking the seal wiring are prohibited.

(3) A house valve shall be installed in the service pipe on the inlet side of the meter within 1 ft. of meter except that when a current meter is set, a straight section of pipe with a length of eight times of diameter of the meter inlet size, shall be installed immediately before the inlet between the control valve and the meter with no fittings of any kind installed in the straight section of pipe.

(4) A valve shall be installed on the outlet of all meters of 1 in. size or larger.

(5) A full sized test tee shall be placed on all 1 1/4 in., 1 1/2 in., and 2 in. meters, on the outlet between the meter and the outlet valve, with a short, capped nipple in the tee.

(6) A test tee with a 2 in. opening shall be placed on all meters 3 in. and larger on the outlet between the meter and outlet valve with a short nipple in the tee, and a 2 in. valve shall be placed on the nipple.

(7) All meters not equipped with a test tee and outlet valve shall have a tee with a faucet in it inserted in the line on the outlet side within 2 ft. of the meter, except that this requirement may be waived where other readily accessible means are provided for testing the meter to determine whether the meter is registering correctly.

(8) No connection shall be made to a test tee.

(9) Before setting meters 3 in. and larger, a plan or sketch showing the proposed installation, and indicating the location of service control valve inside of the building, the distance of the meter from the point of entry of service, the height from floor, the size and the type of meter, and the approximate date of setting shall be filed in duplicate with the department of water supply, gas and electricity for approval.

(d) Size and type of meter.-

(1) APPROVED METERS.-Meters shall conform to standards approved by the department of water supply, gas, and electricity.

(2) SIZE.-A meter shall be restricted to a size that will give accurate registration on the basis of consumption and occupancy of the premises or portion of the premises metered. The meter in no case may be more than one standard size larger than the tap or connection to the city main. The piping of the meter setting from the inlet valve to the outlet valve shall be of the same size as the meter. Where inaccuracy of registration is found to be due to the improper size of the meter, such meter shall be replaced with another meter of a size designated by the department of water supply, gas, and electricity.

P107.4 Check Valves.-

(a) A check valve shall be placed in all services where one of the following conditions exist:

(1) Where a building is supplied by services connected to different mains.

(2) Where there is any possibility of backflow from tanks, siamese connections, or other apparatus or fixtures within the building.

(b) Such check valves shall be placed within 2 ft. of the outlet side of the main house-control valve or on the metered connections between the meter test tee and the outlet valve.

P107.5 Water Supply Distribution System.-

(a) Design, adjustment, and maintenance.-The water supply distribution system shall be designed and adjusted to supply fixtures and equipment with the amount of potable water required for proper use, cleansing and

performance. Pipe sizing shall be predicated on hydraulic design by an architect or engineer, subject to the approval of the Commissioner.

(b) Minimum pressure.-

(1) The minimum pressure available near the faucet or water outlet with the water outlet wide open shall be 8 psi.

(2) At all other equipment and flush valves requiring more than 8 psi, the minimum flow pressure shall be the pressure required for satisfactory performance.

(3) Where street main pressure fluctuates, the building water distribution system shall be designed for the minimum pressure available.

(c) Inadequate water pressure in street mains.- Whenever water pressure from the street main or other source of supply is insufficient to provide pressures at fixture outlets, an auxiliary supply shall be provided in accordance with Section P107.7.

(d) Maximum pressures.-Where the static or street main pressure exceeds 85 psi on fixtures, a pressure reducing valve shall be installed to reduce the pressure to 85 psi or less at the fixture with no flow and the fixture closed. Sillcocks and outside hydrants may be left at full pressure.

(e) Minimum size of water supply branches and risers.-

(1) The minimum size of an individual branch supply to a fixture shall be predicated on supplying the flow of water listed in Table RS 16-7 at velocities not in excess of 8 fps.

(2) The branches, risers, and headers shall be sized to produce velocities not in excess of 8 fps for the flow predicated on the probable demand of flow in the branch, riser, or header pipe.

TABLE RS 16-7 MINIMUM RATE OF FLOW AND MINIMUM REQUIRED PRESSURE DURING FLOW FOR SIZING INDIVIDUAL BRANCH SUPPLIES FOR PLUMBING FIXTURES

Location	Flow Pressure[a] (psi)	Flow Rate[b] (gpm)
Ordinary basin faucet	8	2.0
Self-closing basin faucet	8	2.5
Sink faucet, 3/8 in.	8	4.5
Sink faucet, 1/2 in.	8	4.5
Bathtub	8	5.0
Laundry tub cock, 1/2 in.	8	5.0
Shower	8	5.0
Ball-cock for closet	8	3.0
Flushometer valve for closet	10-20	15-40[c]
Flushometer valve for urinal	10	15.0
Drinking fountains	—	0.75

Notes-

[a] The flow pressure is the pressure in the supply pipe, near the faucet or water outlet while the faucet or water outlet is wide open and flowing.

[b] At fixtures supplied with both hot and cold water, the flow rate indicated is for each of the two connections.

[c] The wide range is due to the variation in designs and types of water closet flush valves and water closets.

(f) Water hammer.-All building water supply systems shall be provided with devices to absorb shocks resulting from high pressure caused by the quick closing of valves. These pressure absorbing devices shall be either air chambers or mechanical devices. Water pressure shock absorbers may be installed at the end of long pipe runs or near batteries of fixtures.

(1) Air chambers installed on the main service shall be in an accessible place, and each air chamber shall be provided with a means for restoring the air should the chamber become waterlogged.

(2) Air chambers installed at individual fixtures need not be accessible. Air chambers for fixtures shall be at least 12 in. long and of the same diameter as the branch pipe connection; for quick closing valves the chamber shall be at least 18 in. long. One air chamber may service a battery of fixtures provided the single air chamber is at least 24 in. long and is at least the size of the supply branch.

(3) Mechanical devices shall be used in accordance with the manufacturers' specifications as to location and method of installation.

P107.6 Water Supply Control Valves.-

(a) Stop-and-waste valves prohibited.-Combination stop-and-waste valves or cocks shall not be installed in underground or buried water supply piping.

(b) Riser valves.-Except in a one-family dwelling, a valve shall be installed at the foot of each water supply riser. In multistory buildings, a valve shall be installed at the top of each water supply down-feed pipe.

(c) Valves in dwelling units.-In two-family dwellings and in dwelling units of buildings classified in occupancy group J-2, control valves on the supply branch or stop valves on each individual fixture shall be provided so that the water to any dwelling unit may be shut off without stopping the flow of water to other units.

(d) Individual fixture valves.-In buildings of occupancy other than those in (c) above, the supply branch to the group of fixtures or the supply branch to each fixture or piece of equipment shall be provided with a valve or a fixture stop valve to shut off the water to the fixture or to the room in which it is located**.**

(e) Tank controls.-Supply lines to and from pressure

or gravity tanks shall be supplied with valves at the tanks within the tank room.

(f) Water heating equipment valve.-The cold water branch to each hot water storage tank or water heater shall be provided with a valve located near the equipment. Each tank or heater shall be equipped with an approved automatic relief valve as prescribed in Section P107.26.

(g) Accessibility.-All water supply control valves shall be placed so as to be readily accessible for service and maintenance.

(h) Control valve design.-Except the valves serving single fixtures, control valves on all water lines shall, when fully opened, have a cross-sectional area of at least 85 percent of the cross-sectional area of the line in which they are installed.

*(i) **Bath and shower valves.-**Valves for individual showers or bathtubs, or multiple gang showers shall be balanced pressure-mixing valves, or thermostatic mixing valves, or combination pressure balancing/thermostatic valves, conforming to the requirements of ASSE 1016 (December 1988). Water temperature control valves shall be equipped with high-limit stops adjusted to a maximum hot water setting of 120 degrees Fahrenheit (49 degrees Celsius).

Local Law 86-1996

P107.7 Auxiliary Water Systems.-

(a) When required.-When the pressure in the street water main or individual water supply system is insufficient to supply the probable peak demand flow to all plumbing fixtures and other water needs freely and continuously, and with the minimum pressures and quantities as prescribed in Section P107.5, or elsewhere herein, the rate of supply shall be supplemented by one of the following:

(1) An elevated gravity water supply tank.
(2) A hydropneumatic pressure booster system.
(3) A water pressure booster pump system.
(4) A combination of these systems.
(5) Other systems designed by an architect or engineer, subject to the approval of the commissioner.

P107.8 Water Supply Tanks.-

(a) Overflows.-Each gravity or suction water supply tank shall be provided with an overflow not smaller than shown in Table RS 16-8 and/or RS 16-9. The gallons per minute listed in the tables shall be the total automatic pump capacity connected to the tank, or the calculated carrying capacity of the fill pipe. The overflow outlet shall discharge within 6 in. of a roof or roof drain, or over an open water supplied fixture. The overflow discharge shall be provided with durable screening with openings of not more than 1/8 in.

TABLE RS 16-8 SIZE OF OVERFLOWS FOR GRAVITY AND SUCTION TANKS (See Figures RS 16-1 A and B)

Overflow Pipe Size (in.)	Maximum Allowable gpm for each Orifice Opening into Tank	Maximum Allowable gpm for Vertical Overflow (Piping Connecting Orifices)
2	19	25
3	43	75
4	90	163
5	159	296
6	257	472
8	505	1,020
10	890	1,870
12	1,400	2,967

TABLE RS 16-9 SIZE OF WEIRS FOR GRAVITY AND SUCTION TANKS (See Figure RS 16-1C)

Slotted Weir Opening into Tank between Overflow Chamber and Water Compartment[a]	Maximum gpm Allowable for Weir
3 in. x 24 in.	381
3 1/2 in. x 24 in.	475
4 1/2 in. x 24 in.	685
4 1/2 in. x 36 in.	1,037
6 in. x 36 in.	1,569
6 in. x 48 in.	2,100

Note-
[a] Bottom of the overflow chamber must be at least 6 in. below weir.
Bottom outlet shall be provided in the chamber of sizes based on capacities as indicated in table RS 16-8.

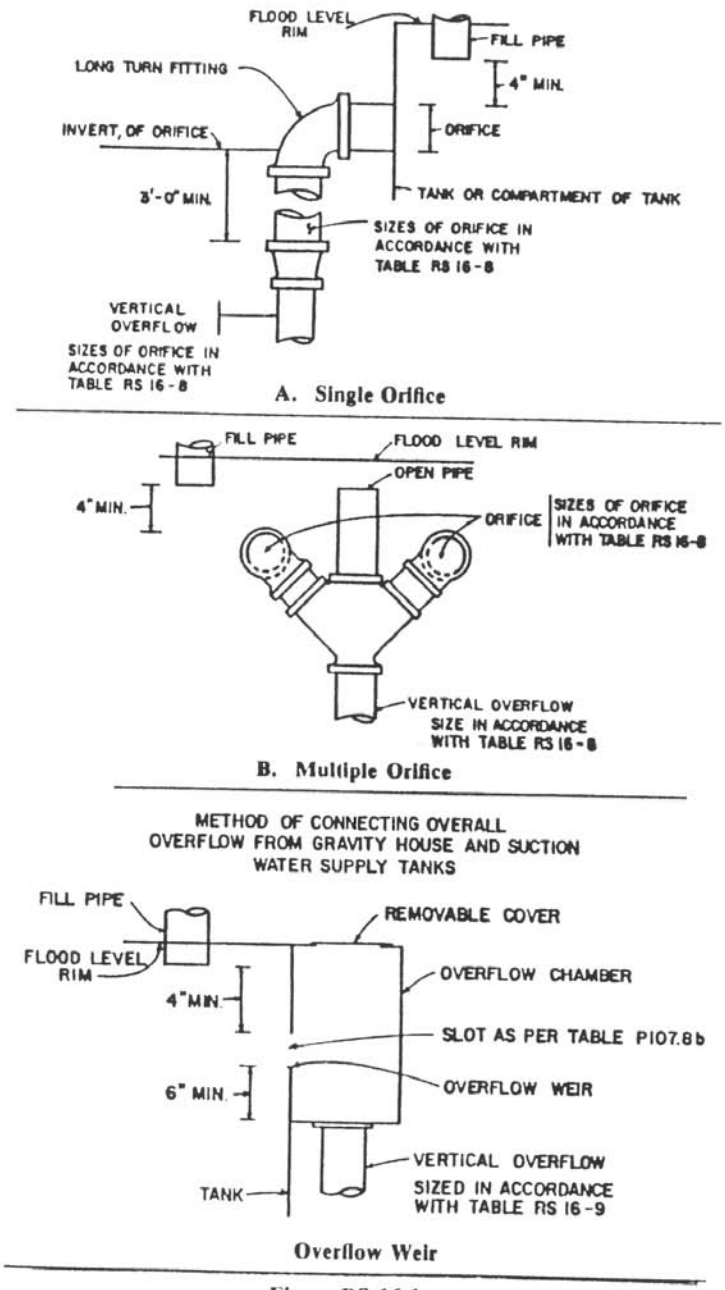

Figure RS 16-1

(b) Water piping control and location.-Water inlets to gravity house tanks shall be controlled by a ball cock or other automatic supply valve or emergency electrical cut-off so installed as to prevent the overflow of the tank in the event that the pumps filling the tanks do not shut off at the predetermined level or the street pressure rises to a point where it can fill the tank. The water inlet to a suction tank shall be controlled by a ball cock or other automatic supply valve. The inlet shall be terminated so as to provide an accepted air gap but in no case shall it be less than 4 in. above the top of the overflow. The outlet from a gravity tank to the distribution system shall be equipped with a strainer located at least 2 in. above the tank bottom to prevent solids from entering the piping system. All down-feed supplies from a tank cross-connected in any manner with distribution supply piping in a building supplied by direct street or pump pressure, shall be equipped with a check valve on the main cold water down supply to prevent backflow of water into the roof tank.

(c) Drain pipes for emptying tanks.-Each tank or tank compartment shall be provided, at its lowest point, with a valved pipe to permit emptying the tank. The drain pipe shall discharge as required for the overflow pipe, and shall be at least 4 in. in diameter.

(d) Prohibited location.-Potable water gravity tanks or manholes of potable water pressure tanks shall not be located directly under any soil or waste piping.

(e) Design.-The gravity house supply tank shall be built of wood, steel, or equivalent materials. Subject to the approval of the Commissioner, additional linings may be installed in the tank, provided the lining material does not have a toxic or otherwise objectionable effect on the potable water. Steel tanks shall be painted both inside and outside. If a tank with a dividing partition is installed, the total capacity of the combined compartments shall be considered as the capacity of a single tank for the purpose of determining storage capacities of the tank.

(f) Hydropneumatic pressure booster tanks.-Pressure tanks shall by cylindrical and shall be built in accordance with the ASME Boiler Code, 1967, Section VIII. The tank shall be galvanized or painted both inside and outside unless it is constructed of a nonferrous material. The tank shall be provided with a pressure relief valve. Also, it shall be provided with a vacuum relief if the tank is located and installed so that it can be drained by a fixture located below the tank. The air supplied to the tank shall be filtered and taken from an area that does not impart any toxicity to potable water stored in the tank.

(g) Cleaning or painting.-

(1) No water tank of any kind that is part of a building water supply system used for potable purposes shall be cleaned with any material or painted on the inside with any material that will have a toxic or otherwise objectionable effect on the potability of the water supply when the tank is put into service. No lead paint shall be used. The water supply connections to and from a tank shall be disconnected or plugged while the tank is being cleaned or painted to prevent any foreign fluid or substance from entering the distribution piping. Where the air in a tank may be insufficient to sustain human life, or may contain an injurious gas, adequate measures shall be taken for the protection of the workmen.

(2) After the tank has been cleaned or painted, it shall be disinfected according to the following procedure before it is put back in service:

a. The underside of the top, the bottom, and the walls shall be washed with a hypochlorite solution containing 100 or more parts per million of available chlorine.

b. The tank shall be filled with water to which hypochlorite solution is added during the filling in sufficient quantity

so that the treated water in the tank will contain at least 10 parts per million of available chlorine.
c. The chlorinated water shall be allowed to remain in the tank for two hours.
d. Finally, the tank shall be drained completely before refilling.
(3) House and suction tanks shall be drained and cleaned at least once a year.
(h) Supports.-All water supply tanks shall be supported in accordance with the requirements for structural work of the building code.
(i) Covers.-All water supply tanks shall be covered to keep out dirt, vermin, and unauthorized persons.

P107.9 House and Booster Pumps.-
(a) Directly off street main.-Power pumps may draw their water supply directly from the street main if the total connected automatic pump capacity is not more than 400 gpm. If the total connected automatic capacity exceeds 400 gpm, the pumps may be connected directly to the street main only if permitted by the department of water supply, gas, and electricity.
(b) Suction tank.-
(1) When the pumps cannot be connected directly to the water service main a suction (surge) tank shall be installed. Suction tanks shall be constructed in accordance with the requirements of Section P107.8.
(2) No suction tank will be required for a fire pump except where the size of the fire service is equal to or greater than the size of the street main.
(c) Suction tank size.-Suction tanks when required, shall have a capacity not less than prescribed in Table RS 16-10.

TABLE RS 16-10 SUCTION TANK SIZES

Total Connected Pump Capacity (gpm)	Tank Capacity (gal.)
400-500	(7,500)
501 and over	(10,000)

(d) Fill line to tank.-A fill connection to a suction tank shall be provided with a flow control that will limit the water make-up rate to the suction tank under the pressure conditions and at the maximum quantities permitted by the department of water supply, gas, and electricity.
(e) Low pressure cut-off required on booster pumps.- When a pump is directly connected to the street main, a low pressure cut-off shall be installed on the house side of each building control valve and on the street side of each meter assembly to prevent the pressure from dropping more than 7 psi below the normal static pressure at the point of entry of the water service, or as required by the department of water supply, gas, and electricity.
(f) Check valves required.-Each pump discharge shall be provided with a check valve and gate valve.

P107.10 Protection of Potable Supply.-
(a) General.-A potable water supply system shall be designed, installed, and maintained in such manner as to prevent contamination from non-potable liquids, solids, or gases from being introduced into the potable water supply through cross-connections or any other piping connections to the system.
(b) Identification of potable and non-potable water.-In all buildings having dual water distribution systems, one potable water and the other non-potable water, each system shall be identified either by color marking or metal tags.
(c) Color marking.-When color marking is used, potable water lines shall be painted green and non-potable water lines shall be painted yellow. This requirement may be met by painting 3 in. wide bands, green or yellow, at intervals of not more than 25 ft. and at points where piping passes through walls, floors, or roofs, in which case the bands shall be applied to the piping on both sides of the walls and both above and below the floor or roof. Points of outlets for nonpotable water shall be marked with a tag or color code.
(d) Metal tags.-When tags are used, potable water lines shall be identified by 3 in. diameter metal tags bearing the legend "SAFE WATER" in letters at least 1/2 in. high. Non-potable water lines shall be identified by firmly attached metal tags having the shape of a 4 in. equilateral triangle bearing the legend "WATER UNSAFE" in letters at least 1/2 in. high. As in the use of color bands, tags shall be attached to pipes at intervals of not more than 25 ft. and at both sides at points where pipes pass through walls, and both above and below points where pipes pass through floors or roofs.

P107.11 Toxic Materials and Substances.-No materials or substances that could produce either toxic conditions or add taste or odor to a potable water system shall be introduced into or used in such systems.

P107.12 Used Piping.-Piping that has been used for any purpose other than conveying water shall not be used for conveying potable water.

***P107.13 Prohibited Connections To Fixtures And Equipment.-**The following equipment shall receive water supply only through air gaps and direct water connections to the potable water supply system shall be prohibited unless a reduced pressure principle back pressure backflow preventer is installed between the water supply and the equipment.
(1) Bidets with submerged water connection that cannot drain out after shut off.
(2) Aspirators, injectors, ejectors or water siphons and similar apparatus.
(3) Mortuary, dissection, operating and embalming tables or similar equipment.
(4) Sterilizers.
(5) Flushing rim floor drains.
Local Law 69-1977

P107.14 Connections to Mechanical Equipment and Systems.-Potable water connections to boiler feed water systems and heating or cooling systems shall be

made through a fixed air gap. Where the equipment or system is fed through an injector the potable water shall be supplied through a fixed air gap to the suction tank of a booster pump.

P107.15 Refrigeration Unit Condensers and Cooling Jackets.-Where potable water is provided for a refrigerator condenser or cooling jacket the connection must be entirely outside of the piping or tank containing the toxic refrigerant shall be used. The inlet connection shall be provided with check valve and, if the refrigeration units contain more than 20 lbs. of refrigerant, with an approved pressure relief valve set to relieve at 5 psi above the maximum water pressure at the point of installation, adjacent to and at the outlet side of the check valve.

P107.16 Air Conditioning and Refrigeration.-
(1) Each direct water connection to a refrigeration or air conditioning unit using city water for cooling purposes shall be equipped with a check valve located not more than 2 ft. from the unit.
(2) Where the refrigeration or air conditioning system in a building is in excess of 1/3 ton, the city water supply to such building shall be metered.
(3) Where the refrigeration or air conditioning unit using city water is 1/3 ton or less, and the unit is located in a metered premise, the unit shall be connected to the metered supply.
(4) All systems of refrigeration in excess of 6 tons and/or air conditioning in excess of 3 tons shall be equipped with a water conserving device. Ice cubers and ice flakers shall be exempted from this requirement. The tonnage shall be the combined or total tonnages for all water cooled refrigeration systems for air conditioning or any other purpose installed in any one building.
(5) In buildings where the tonnage is less than the tonnage specified in (4) above, an approved automatic regulating device shall be installed at each refrigeration unit.
(6) Where city water is supplied to a water conserving device, other than a combination air and water cooled condenser, the piping supplying such water shall discharge at least 2 in. above the overflow rim of the pan.
(7) The waste water from all systems having direct connection to the city water supply shall be discharged (outlet of the discharge piping) shall be located at least 1 in. above the overflow rim of said receptacle.
(8) "Automatic water regulating valve or device" shall mean a self-regulating valve or other device that shall limit the use of city water to 1.5 gpm or less per ton of refrigeration or air conditioning.
(9) "Water conserving device" shall mean an evaporative condenser, water cooling tower, spray pond, economizer, or similar apparatus that shall not consume city water for make-up purpose in excess of 2 percent of the amount that would normally be used without such device. In addition, 3 percent of the amount of water that would normally be used without such device shall be allowed for purpose of bleeding and wash down.

P107.17 Used Water Return Prohibited.-Water used for cooling of equipment or other processes shall not be returned to the potable water system. Such water shall be discharged into the drainage system through an air break to a receptacle or fixture.

***P107.18 Protection Against Backflow and Back-Siphonage.-**Unless otherwise provided in this code, protection of the potable water system against backflow and back-siphonage shall be by providing, installing, and maintaining at each outlet one of the following:
(1) Air Gap: In accordance with ANSI A112.1.2-1942 (R1973).
(2) Vacuum Breaker: In accordance with ANSI A112.1.1-1971 (ASSE No. 1001-1970).
(3) Reduced Pressure Principle Back Pressure Backflow Preventer: In accordance with ASSE No. 1013-1974.
(4) Double Check Valve-Type Back Pressure Backflow Preventer: In accordance with ASSE No. 1015-1972.
(5) Backflow Preventer With Intermediate Atmospheric Vent: In accordance with ASSE No. 1012-1972.
Vacuum breaking and backflow preventing devices shall be accessibly located, preferably in the same room with the fixture they serve. Installation of vacuum breaking devices in utility or service spaces is also permitted, provided the devices are readily accessible.
Local Law 67-1977

P107.19 Approval of Devices.-Before any device for the prevention of backflow or back-siphonage is installed, it shall have first been tested and a test report showing compliance with the applicable standard shall have been filed by an architect or engineer, in accordance with the administrative provisions of the building code.

P107.20 Protection of Potable Water Supply Outlets.-
(a) Backflow preventers or vacuum breakers shall be installed with any plumbing fixture or equipment in each potable water supply outlet that may be submerged and that cannot be protected by a minimum air gap, or as otherwise provided in this code. All submerged inlets, except for connections to water closet and urinal flushometer valves and ball floats for tank water closets and urinals, shall have a check valve installed between the vacuum breaker and the submerged inlet.
(b) Type required.-
(1) CONNECTIONS NOT SUBJECT TO BACK PRESSURE.-Where a water connection is not subject to back pressure, a non-pressure type vacuum breaker shall be installed on the discharge side of the last valve on the line serving the fixture or equipment. A partial list of conditions requiring protective devices of this kind is given in Table RS 16-11. The critical level shall be indicated on the vacuum breaker, or in the event the critical level is not indicated, the lower end of the vacuum breaker body shall constitute the critical level.
(2) CONNECTIONS SUBJECT TO BACK PRESSURE.-Where a potable water connection is made to a line, fixture, tank, vat, pump, or other equipment with a hazard of backflow or back-siphonage where the water connection is subject to back pressure, a pressure type vacuum breaker and check valve shall be installed.

TABLE RS 16-11 CROSS-CONNECTIONS WHERE PROTECTIVE DEVICES ARE REQUIRED AND CRITICAL LEVEL (C-L) SETTING FOR VACUUM BREAKERS

Fixture or Equipment	Methods of Installation
Dental Units	On models without built-in vacuum breakers - C-L at least 4 in. above flood rim of bowl.
Dishwashing machines	An air gap or with the C-L at least 4 in. above flood level of machine. Install on both hot and cold water supply line and on water supply to detergent or water softening appliances.
Flushometers (closet and urinal)	C-L at least 4 in. above top of fixture supplied.
Garbage can cleaning machine	C-L at least 4 in. above flood level of machine. Install on both hot and cold water supply lines.
Hose outlets, (except outside sillcocks, draincocks at base of water risers or at equipment, and fire hose outlets)	C-L at least 4 in. above highest point on hose line or as permitted by the commissioner.
Laundry machines	C-L at least 4 in. above flood level of machine. Install on both hot and cold water supply lines.
Lawn sprinklers	C-L at least 12 in. above highest sprinkler or discharge outlet. Installed on header at building wall.
Steam tables	C-L at least 4 in. above floor level.
Tanks and vats	C-L at least 6 in. above flood level rim or line.
Trough urinals	C-L at least 30 in. above perforated flush pipe.
Flush tanks	All flush tanks operated by ballcocks shall have a vacuum breaker located not less than 1 in. above the overflow outlet of the flush tank.

P107.21 Preheating Apparatus.-Water supply lines to water preheating apparatus utilizing waste water from the plumbing system shall be equipped with a vacuum breaker located at least 4 in. above the highest elevation of the preheating apparatus or coil, with a check valve between the vacuum breaker and the preheating apparatus. Any hot water boiler supplied through such preheating device and having an independent cold water supply line shall have the cold water supply line equipped with a vacuum breaker and check valve located at least 4 in. above the highest elevation of the boiler.

P107.23 Chemical Solution Tanks or Apparatus.- Direct water supply connections to any tank or apparatus containing any chemical shall be prohibited unless specifically approved by the department of health.

P107.24 Bedpan Washers.-Bedpan washers or similar apparatus not provided with an approved flushometer shall be equipped with a vacuum breaker and check valve. The check valve shall be located between the fixture and the vacuum breaker. Water supply to bedpan washers equipped with an approved flushometer valve shall be provided with a vacuum breaker. Bedpan washers may be equipped with steam connections only when such equipment has been approved.

P107.25 Laboratory Outlets.-Each laboratory outlet provided with a serrated tip or hose end shall be provided with a vacuum breaker.

***P107.26 Hot Water Supply System.-**
(a) Return circulation-where required.

(1) Hot water supply systems, in buildings four stories or more in height, or buildings in which the developed length of hot water piping from the source of hot water supply to the farthest fixture supplied exceeds 50 ft. shall be of the return circulation type, except as otherwise provided in subparagraph (2) of this paragraph. No branch from a noncirculated riser or header shall exceed 50 ft.

(2) A temperature maintenance system with electric heaters and components applied to the domestic hot water piping may be used in lieu of a return circulation system provided:

a. The system conforms to the requirements of national standard ANSI/IEEE 515-1983.

b. The minimum predetermined temperature in the domestic hot water piping is not less than 100^{o}F.

c. The minimum outlet temperature of the hot water supply source is not less than 110^{o}F.

d. All heating cable cores are permanently marked with the manufacturer's batch or serial number for traceability and cable jackets are continuously and permanently marked with manufacturer's name, catalog number, nominal supply voltage and nominal power output in watts per ft. The use of temporary printing or tags shall not be permitted.

e. Test certificates accompany each reel of heating cable and are signed by the manufacturer's quality control officer. The certificates shall indicate the cable type, cable rating in watts per ft., voltage rating, test date, batch number, reel number, length of cable, test voltage and test amperage reading.

f. The system is listed for domestic hot water piping by an accepted nationally recognized independent laboratory that maintains periodic inspections of production of listed equipment and whose listing states that the

equipment meets nationally recognized standards for domestic hot water piping.
g. The system is accepted and approved by the department of buildings.
(b) Pressure relief valves, temperature relief valves and energy cutoff devices required.-Equipment used for heating water or storing hot water shall be provided with one of the following safety devices:
A separate pressure relief valve and separate temperature relief valve.
A combination pressure and temperature relief valve.
(1) No check valve or shut-off valve shall be installed between the safety device and the hot water equipment used.
(2) Relief outlets or relief valves shall not be directly connected to drainage or vent piping.
(3) Relief valve discharge pipes shall be the same size as valve discharge connections and shall pitch downward from the valve to the point of disposal. Pipe shall terminate with an unthreaded end.
(4) Where a relief outlet discharges into a plumbing fixture, a minimum air break shall be provided.
(5) All relief valves and safety devices shall comply with the requirements of the applicable standards of the U.S.A. Standards Institute, American Society of Mechanical Engineers, or the Underwriters' Laboratories. Valves or devices shall be accepted for use in accordance with the administrative provisions of the building code.
(6) All new installations of equipment used for heating water or storing water shall comply with the provisions of subdivision P107.26 of Section P107.0 of Reference Standard RS-16.
(7) All replacements of equipment used for heating water or storing water shall comply with the provisions of subdivision P107.26 of Section P107.0 of Reference Standard RS-16.
(8) All existing equipment used for heating water or storing water shall comply with the provisions of paragraph (b) of subdivision P107.26 of Section P107.0 of Reference Standard RS-16.
(c) Pressure relief valves.-Pressure relief valves and the pressure relief element of combined pressure and temperature relief valves shall be in accordance with the requirements of the ASME boiler and pressure vessel code, 1962, Section IV and the construction requirements of USASI Z21.22-1964.
(1) Valve capacity, as rated from actual test data, shall be at least equal to the rated capacity of the connected heater or heaters.
(2) The opening pressure of the pressure relief valve shall be at least 25 lbs. above the normal working pressure in the system or the pressure delivered by the water pressure reducing valve. In no case shall the relief valve be set to open at a pressure above the rated working pressure of the vessel that the valve is installed to protect.
(d) Temperature relief valves.-Temperature relief valves shall have a relief rating, expressed in Btu per hour, equal to that of the equipment served. They shall be installed so that the temperature sensing element is immersed in the hottest water, such as:
(1) Within the top 6 in. of the tank of an unfired hot water storage heater;
(2) Above the hot water inlet to a tank equipped with a sidearm type water heater or supplied with hot water from another source;
(3) Above the topmost heating element of an electric water heater;
(4) Where, due to the construction of the water heater, there is no tapping to receive the temperature relief valve, the valve shall be installed in a tee following a nipple installed in the heater. The tee shall be located as close as possible to the heater jacket.
(e) Emergency energy cut-off devices.-The performance rating of emergency energy cut-off devices shall be equal to or greater than the performance rating for the equipment served. Immersion type energy cut-off devices shall be installed so that the temperature sensing element is immersed in the hottest water zone of the equipment served. Contact types shall be installed only when permitted by the Commissioner, and shall be rigidly mounted in contact with the shell of the water heater, shall be calibrated accurately for use on the heater to which it is applied, and shall be insulated or protected from flue gas, heat, or other ambient conditions that are not indicative of stored water temperature. Safety pilots or other approved devices shall be installed to cut off the main fuel supply to the main burner or heat producing equipment.
(f) Vacuum relief valves.-All copper lined tanks located and installed so that they can be drained by a fixture located below the tank shall be equipped with a vacuum relief valve that shall comply with USASI Z21.22-1964.
(g) Pressure marking of hot water storage tank.-Hot water storage tanks shall be permanently marked in a readily accessible place to indicate the maximum allowable working pressure, which shall be not more than 2/3 of the bursting pressure of the tank.
(h) Temperature limit controls.-All hot water heaters and storage tanks shall be equipped with an operating temperature limit control.
*****(i)Prohibited locations and usage of hot water generators.-** No solid or liquid fuel or gas fuel-fired water heater shall be installed in bathrooms, bedrooms, or in any enclosed space with a volume of less than 300 cu. ft.; nor shall vents designed only for use with gas equipment be used with solid or liquid fuel-fired equipment. Notwithstanding the foregoing, a gas fuel-fired water heater may be installed in any dwelling unit in accordance with the following conditions:
(1) The enclosed space shall have a minimum volume of at least 100 cu. ft.;
(2) The maximum BTU rating shall be 75,000 BTU/hr.;
(3) There shall be a fresh air intake which shall equal at least one sq. inch free area per 2000 BTU/hr. input rating which in no event shall be less in cross-section than the flue projecting from the hot water heater and which shall be fire damper protected if used for air supply duct work of two or more stories;
(4) The exhaust from the water heater shall be connected to an approved type flue;
(5) The installation shall be made within a solid

enclosure with a flush door without louvres, and with clearances about the water heater conforming to A.G.A. requirements, and
(6) The heater shall be (i) currently listed by an independent laboratory acceptable to the commissioner pursuant to section C26-106.2, (ii) approved by the department and (iii) approved by the department of health.
Local Law 82-1986; Local Law 67-1977
****Local Law 45-1984***

P107.27 Disinfection of Potable Water Systems.-
(a) New or repaired potable water systems shall be disinfected prior to use whenever samples from the system show any contamination after making a bacteriological examination. Samples shall be taken as required by the department of health. The method to be followed shall be that as prescribed by the department of health, or where no method is prescribed by the department of health, by the following:
(1) The pipe system shall be flushed with clean, potable water until no dirty water appears at the outlets.
(2) The system or part thereof shall be filled with a water-chlorine solution containing at least 50 parts per million of chlorine and the system or part thereof shall be valved off and allowed to stand for 24 hr. or, the system or part thereof shall be filled with a water-chlorine solution containing at least 200 parts per million of chlorine and allowed to stand for 3 hr.
(3) Following the prescribed standing time, the system shall be flushed with clean potable water until no excess chlorine remains in the water coming from the system.
(4) The procedure shall be repeated if it is shown that contamination still persists in the system.

Section P108.0 Sanitary Drainage Piping

P108.1 Permits.-
(a) Permits for the installation of a building house storm sewer from the street line to and including the spur connection at the street sewer shall be obtained in accordance with the requirements of the building code.

P108.2 Street Sewer Connections.-
(a) Any connection to a sewer, other than a pipe sewer, shall in no case have its inner top lower than 6 in. below the inner top of the sewer.
(b) All building sewer connections to a street arch or circular sewer shall be at a point 45 degrees to the horizontal plane in the upper quadrant of the street arch or circular sewer except as otherwise directed by the department of public works.
**(c) All building house sewer connections shall be made in the presence of an employee of the department.
(d) All building sewer connections shall be flush with the inside face of the wall of the street sewer.
(e) No building sewer connections shall be made to catch basins or drain inlets.
Local Law 65-1996

P108.3 Abandonment of Existing Building Sewer Connections.-
(a) All abandoned building sewers shall be securely sealed at a point inside the curb line and as close thereto as practicable.

P108.4 Building (House) Traps.-
(a) Building (house) traps shall be installed as prescribed in Section P105.0.
(b) A building (house) trap shall not be required on a sub-house drainage system that discharges into a sewer ejector pit or sump pit.

P108.5 Fresh Air Inlets.-Every sanitary or combined building (house) drain equipped with a building (house) trap, sewage pump, ejector, receiving tank, oil separator, or similar equipment, shall be provided with a fresh air inlet pipe connected to the building house drain immediately upstream from, and within 4 ft. of, such trap or equipment. Such connection shall be made in the same manner as prescribed herein for vent connections to horizontal drains, and the fresh air inlet pipe shall be extended to the outer air and shall be terminated in an open end at least 6 in. above grade. The open end shall be protected by a perforated metal plate permanently fixed in the mouth of the inlet and having an open ventilating area at least equal to the area of the pipe, or by a return bend with its unprotected open end at least 6 in. above grade located inside the street line. The size of the fresh air inlet pipe shall be at least 1/2 the diameter of the building drain at the point of connection, but not less than 3 in.

P108.6 Drainage Below Sewer Level.-
(a) Drainage from parts of the drainage system that cannot drain into the gravity system or, where the plumbing design does not indicate drainage into the gravity system, shall be disposed of through sub-building (sub-house) drainage systems. The discharge from the ejector or sump pit shall be through a connection located on the street side of the building house trap. The discharge from non-vented, clear water sumps may be connected to any point in the gravity drainage system.
(b) Drainage and vent piping of sanitary building sub-house drainage systems shall be installed in the same manner as for gravity systems. The vents of the building sub-house drainage system may be connected to the vents of the gravity drainage system provided such connection is made above the overflow rim of the lowest fixture on the gravity system.
(c) Sump pits or receiving tanks receiving the discharge from the sanitary drainage or from the building sub-house sanitary drainage system shall be airtight and provided with a vent. Sump pits or receiving tanks that do not receive the discharge of domestic sewage, but receive only clear water from floor drains or machinery drips, need not be air-tight and vented.
(d) Each sewage receiving tank or pit shall be provided

with a vent that is sized on the basis of one fixture unit for each gpm flow of the discharge pumps and the developed length of the vent from the receiver to the vent stack or the outside air, in accordance with Table RS 16-14. The vent from a receiving tank may be connected to the gravity drainage vent system provided such system is 3 in. or larger.

(e) The relief devices of a pneumatic sewage ejector system shall be connected to an independent relief line vent at least 3 in. in diameter. Such vent shall be carried independently through a roof and shall terminate as required for sanitary vent stacks or stack vents. The mechanism for the relief of the air pressure in the closed sewage receptacle shall have valves, piping, and connection that form a part of the sewage ejector device. The devices shall be sufficient in size to relieve the ejector pit to atmospheric pressure in not more than 10 sec., and the minimum size of such valves and piping shall be 1 1/4 in.

(f) Sump pits or receiving tanks may be constructed of concrete provided the compartment is fully waterproofed and the walls of the pit troweled to a smooth finish.

(g) Each sewage ejector or sump discharge shall be provided with a check valve and a gate valve.

P108.7 Sub-Soil Drainage.-Where sub-soil drainage is to be discharged to a public sewer, the sub-soil drains shall discharge into a readily accessible silt and sand interceptor designed by an architect or engineer, the drainage from which shall be disposed of into the gravity drainage system or a sump system. Where the piping from the interceptor is directly connected to the gravity drainage system, such piping shall be provided with an approved and readily accessible backwater valve and shall be connected upstream of a leader or area drain trap. Area drains may be connected to the sub-soil drainage system subject to the provisions of Section P110.2.

P108.8 Drainage Piping Installation.-

(a) Pitch of horizontal drainage piping.-Horizontal drainage piping shall be installed in uniform alignment at uniform slopes as follows:

Size of Piping	Minimum Slope
2 in. or less	1/4 in. per ft.
Over 2 in.	1/8 in. per ft.

(b) Change of direction.-

(1) Changes in direction in drainage piping shall be made by the appropriate use of 45 degrees wyes; long sweeps; short sweeps, quarter, sixth, eighth, or sixteenth bends; or by a combination of these or equivalent fittings.

(2) Sanitary tees and quarter bends may be used in drainage lines only where the direction of flow is from the horizontal to the vertical.

(3) Short sweeps will be permitted in drainage piping 3 in. in diameter or larger for any offsets either horizontal or vertical.

(c) Prohibited fittings and connections.-

(1) No running threads, bands, or saddles shall be used in drainage or vent piping. No drainage or vent pipes shall be drilled or tapped.

(2) No fitting, connection, device, or method of installation that retards the flow of water, wastes, sewage, or air in the drainage or vent systems to an extent greater than the normal frictional resistance to flow shall be installed. Double hubs are prohibited for use in drainage piping. No fitting having a hub faced downstream shall be used as a drainage fitting. No tee branch of a drainage fitting shall be used as an inlet branch for wastes. Double sanitary tees may not be used for a fixture connection when a blowout type fixture is connected to one of the inlets.

(3) A heel-or side-inlet quarter bend shall not be used as a vent connection fitting in drainage piping when the heel- or side-inlet is placed in a horizontal position.

(4) The expanding or swedging of 3 in. lead bends or stubs to 4 in. size, thereby causing a reduction in pipe wall thickness, is prohibited. Approved 3 in. x 4 in. lead bends and stubs with uniformly proper wall thickness may be used for connections to 4 in. floor flanges, and 4 in. x 3 in. floor flanges may be used for connection to 3 in. lead bends and stubs.

(d) Dead ends.-In the installation of removal or any part of a drainage or vent system, dead ends shall be avoided except where necessary to extend a cleanout so as to be accessible.

(e) Provision for future fixtures.-Drainage and vent piping provisions for future fixture installations shall consist of plugged fittings at the stack, or of piping installed without dead ends.

P108.9 Sanitary Drainage Fixture Units.-

(a) Value for fixtures.-Fixture unit values given in Table RS 16-12 shall be employed in computing the total load carried by a soil or waste pipe and shall be used with the tables for sizing soil, waste, drainage, and vent pipes.

(b) Values for continuous or semicontinuous flow.- Fixture unit values for continuous or semicontinuous flow into a drainage system, such as from a pump, ejector, air-conditioning equipment, or similar devices shall be computed on the basis of one fixture unit for each gpm of flow.

TABLE RS 16-12 SANITARY DRAINAGE FIXTURE UNIT VALUES [a]

Fixture or Group	Fixture Unit Value
Automatic clothes washer (2 in. standpipe)	3
Bathroom group consisting of a lavatory, bathtub or shower stall, and a water closet (direct flushometer valve)	8
Bathroom group consisting of a lavatory, bathtub or shower stall, and a water closet (flush tank)	6
Bathtub with or without overhead shower	2
Combination sink and wash tray	3
Dental unit or cuspidor	1
Dental lavatory	1
Drinking fountain	1/2
Dishwasher, domestic type	2
Floor drain	2[b]*
Kitchen sink, domestic type	2
Lavatory	1
Lavatory (barber shop, beauty parlor or surgeon's)	2
Lavatory, multiple type (wash fountain or wash sink), per each equivalent lavatory unit or set of faucets	2
Laboratory cup sink	1
Laboratory sink	2
Laundry tray (1 or 2 compartment)	2
Shower stall	2
Shower (group) per head	2
Sink (surgeon's)	3
Sink (flushing rim type, direct flush valve)	6
Sink (service type with trap standard)	3
Sink (service type with P trap)	2
Sink (pot, scullery, or similar type)	4
Urinal (1 in. flush valve) pedestal	6
Urinal (3/4 in. flush valve) stall or wall hung	4
Urinal (flush tank)	4
Water closet (direct flush valve)	6
Water closet (flush tank)	4
Unlisted fixture, 1 1/4 in. fixture drain and 1 1/2 in. trap size	1
Unlisted fixture, 1 1/2 in. fixture drain or trap size	2
Unlisted fixture, 2 in. fixture drain or trap size	3
Unlisted fixture, 2 1/2 in. fixture drain or trap size	4
Unlisted fixture, 3 in. fixture drain or trap size	5
Unlisted fixture, 4 in. fixture drain or trap size	6

Note-

[a] See section P108.9(b) for method of computing unit values for devices with continuous or semicontinuous flows.

[b] Any floor drains provided in an elevator vestibule or in an elevator shaft shall be excluded from being counted as fixture units.

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P108.10 Sizing the Sanitary Drainage Piping.-

(a) Drainage piping.-Sizes shall not be less than those permitted in Table RS 16-13, using the fixture unit values of Table RS 16-12.

(b) Sewer piping.-When more than one building house drain discharges into a private sewer within the property line, the sewer may be sized on a design basis and the slope of the sewer shall be predicated on the size selected, but in no case shall the slope be less than that required to produce a velocity in the sewer of less than 3 fps.

(c) Minimum size of soil and waste stacks.-No soil or waste stack shall be smaller than the largest horizontal branch connected thereto, except that a 4 in. x 3 in. water closet connection shall not be considered as a reduction in pipe size.

(d) Provision for future fixtures.-When provision is made for the future installation of fixtures, those provided for shall be considered in determining the required sizes of drain and vent pipes.

(e) Minimum size of underground drainage piping.- No portion of the drainage system installed underground or below a basement or cellar floor on ground shall be less than 2 in. in diameter, except that drip pipes may be 1 in. if of copper or brass.

(f) Sizing of offsets in drainage piping.-

(1) OFFSETS OF 45 DEGREES OR LESS.-An offset in a vertical stack, with a change of direction of 45 degrees or less from the vertical, may be sized as a straight vertical stack.

(2) OFFSETS OF MORE THAN 45 DEGREES.-A stack with an offset of more than 45 degrees from the vertical shall be sized as follows:

a. The portion of the stack above the highest offset shall be sized as required for a regular stack based on the total number of fixture units above the offset.

b. The offset shall be sized as required for a building house drain (Table RS 16-13).

c. The portion of the stack below the offset shall be sized the same as the offset or based on the total number of fixture units on the entire stack, whichever is the larger.

d. A relief vent for the offset shall be installed as provided in section P109.12 and in no case shall a horizontal branch drain connect to the stack within 2 ft.

above or below the offset.

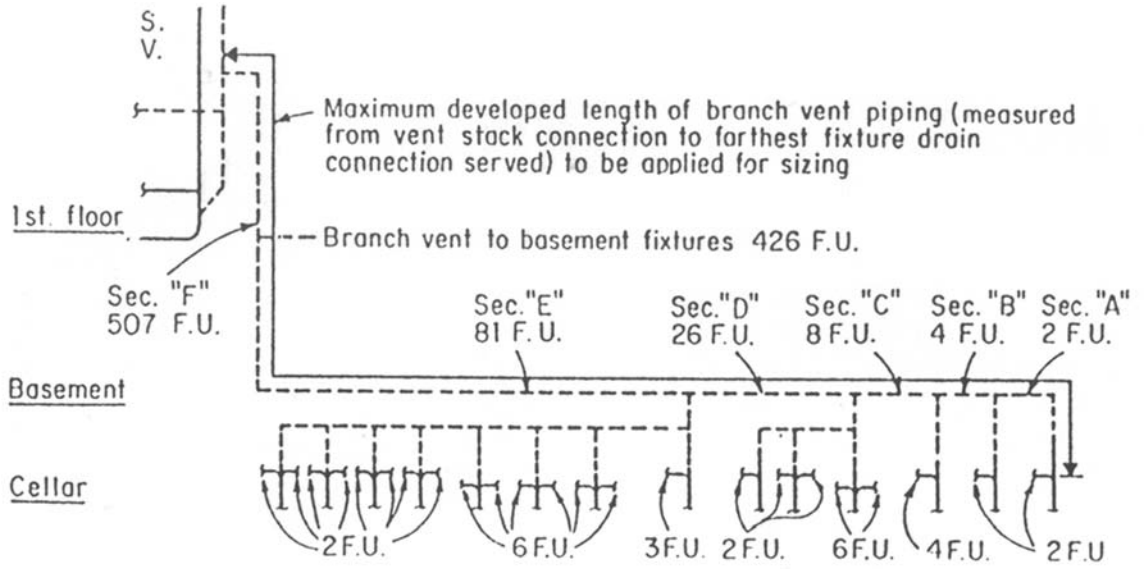
(3) OFFSETS ABOVE HIGHEST BRANCH.-An offset in the stack vent above the highest horizontal branch shall be considered only as it affects the developed length of the vent. The horizontal offset and piping above the stack vent offset shall be of a non-scaling material.

(4) OFFSETS BELOW LOWEST BRANCH.-In the case of an offset in a soil or waste stack below the lowest horizontal branch, there shall be no change in diameter required if the offset is made at an angle of 45 degrees or less from the vertical. If such an offset is made at an angle greater than 45 degrees from the vertical, the required diameter of the offset and the stack below it shall be determined as required for a building house drain.

(5) OFFSETS PROHIBITED.-No offset in a soil or waste line shall be made directly above any equipment used to prepare or store any food products, except where provided with protection from drips with a water tight copper pan extending 4 in. in each direction from the pipe wall and turned up at least 1/2 the diameter of the pipe but not less than 2 in. The pan shall extend at least 1 ft. beyond the fixtures or tables. Other methods may be used when permitted by the commissioner.

TABLE RS 16-13 MAXIMUM PERMISSIBLE LOADS FOR SANITARY DRAINAGE PIPING (IN TERMS OF FIXTURE UNITS)

Pipe Diameter (in.)	Any horizontal branch or fixture at one story of stack	Total for Stack	House building Drain, and Building Branches from stacks Slope (in. per ft.) 1/16	1/8	1/4	1/2
1 1/2[a]	3	4	np	np	np	np
2[a] …..….	6	8	np	np	21	26
2 1/2[a]... .	12	30	np	np	24	31
3…….	20[b]	97[b]	np	20[b]	27[b]	36[b]
4…….	160	507	np	180	216	250
5…….	360	1445	np	390	480	575
6…….	…	2918	np	700	840	1000
8…….	…	6992	1440	1600	1920	2300
10……..	…	….	2500	2900	3500	4200
12……..	…	….	3900	4600	5600	6700



SIZING SCHEDULE
Max. developed length-70'

BRANCH VENT SECTION	LOAD (F.U.)	SIZE (IN.)
A	2	1 1/2
B	4	1 1/2
C	8	2
D	26	2
E	81	2 1/2
F	507	3

SIZING SCHEDULE
Max. developed length-200'

BRANCH VENT SECTION	LOAD (F.U.)	SIZE (IN.)
A	2	1 1/2
B	4	2
C	8	2 1/2
D	26	3
E	81	3
F	507	4

Figure RS 16-2. Sizing of Branch Vent Piping, Drop Vents to 1st Floor, Basement and Cellar Fixtures.

Notes-
[a] No water closets permitted.
[b] Not over two water closets permitted.
np = not permitted.

P108.11 Drip Pipes.-Drips from pump bases, air conditioning drips, and similar clear water drips may be collected into a 1 in. pipe, and the pipe may be connected to the inlet side of a floor drain trap. Piping underground shall be of brass or copper.

Section P109.0 Vent Piping

P109.1 Size of Vents.-The nominal size of vent piping including vent headers shall be determined from its length and the total number of fixture units connected thereto, as provided in Table RS 16-14. In no case however, shall the nominal size be less than the following:
(a) Individual vent.-1 1/2 in. or 1/2 the diameter of the drainage pipe to which it is connected, whichever is greater.
(b) Relief vent.-1 1/2 in. or 1/2 the diameter of the soil or waste branch to which it is connected, whichever is greater.
(c) Branch vents.-Branch vents connecting more than one individual vent to a stack or stack-vent shall be in accordance with Table RS 16-14. The branch vent size shall be based upon the number of fixture units connected thereto, and the developed length of the branch vent measured from its vent stack (or stack-vent) connection to the farthest fixture drain connection served by the branch vent. See Figure RS 16-2.
(d) Vent stacks.-The developed length of a vent stack shall be measured from the base or point of connection with the attending soil or waste stack to the connection with a vent header or its termination above the roof. Stacks shall be sized in accordance with Table RS 16-14.

P109.2 Protection of Trap Seals.-The protection of trap seals from siphonage or back pressure shall be accomplished by the use of soil or waste stacks, vents, revents, back vents, continuous vents, or combinations thereof, installed in accordance with the requirements of this code, so that at no time shall the trap-seal be subjected to a pressure differential of more than 1 in. of water.

TABLE RS 16-14 SIZE OF VENT STACKS AND BRANCH VENTS

Size of soil (in.) or waste stack	Fixture units Connected	Diameter of vent required (in.) 1 1/2	2	2 1/2	3	4	5	6	8	10
		Maximum developed length of vent (ft.)**								
1 1/2…….…	4	100	†	..	..	..	..	..	..	..
2……...	8	30	170	†	..	..	..	..	..	..
2 1/2…….	30	15	70	175	†	..	..	..	..	..
3……...	97	6	24	89	250	†	..	..	..	..
4……...	507	*	*	11	78	310	†	..	..	..
5……...	1445	*	*	*	16	110	380	†	..	..
6……...	2918	*	*	*	*	34	143	380	†	..
8……...	6992	*	*	*	*	*	14	73	340	†
10……....	…	*	*	*	*	*	*	*	*	†

Notes-
*not permitted.
**A 1 1/2 in. vent may be used for 6 or less fixture units for a developed length of 15 ft. from the fixture to header regardless of developed length limiting the header size.
† unlimited

P109.3 Vent Stack and Stack Vents.-
(a) Minimum size.-Any building in which a building drain is installed shall have at least one 4 in. vent stack (or stack-vent) carried full size through the roof.
(b) Vent stack required.-Every building in which plumbing is installed shall have at least one 4 in. main stack or stack-vent, which shall run undiminished in size and as directly as possible, from the building drain through to the outdoor air above the roof. A vent stack shall be installed in conjunction with each soil or waste stack in a building containing three or more branch intervals; however, one vent stack may serve not more than two soil or waste stacks.
(c) Connections at base and top.-All main vents or vent stacks shall connect full size at their base to the building drain or to the soil or waste stack at or below the level of the lowest drainage connection to the soil or waste stack. All vent stacks shall extend undiminished in size above the roof, or shall be reconnected to a vent header, or to the stack vent portion of the soil or waste stack, at least 6 in. above the flood level of the highest fixture connection discharging into the soil or waste stack.
(d) Angle of offsets and connections.-Offsets in the stack vent portion of soil and waste stacks (above the highest fixture drainage connection), offsets in vent stacks, and connections of vent stacks at the bottom to a soil or waste pipe or to the building house drain, shall be made at an angle of at least 45 degrees to the horizontal. However, where provision is made to wash out the scale above the offset or where the entire piping above such offsets is of nonscaling type, the offset angle may be reduced**,** provided there is sufficient slope for condensation to drain back to soil or waste pipe connections.
(e) Vent headers.-Where stack vents and vent stacks are connected into a vent header, such connections shall be made at the tops of the stacks. The vent header shall

connect to a vent extension through the roof. The vent header material shall be of non-scaling type.

(f) Sub-stack connections.-Where it is desired to terminate stacks at a point below the roof terminus of the main vent stack, the sub-stack may connect to the main vent stack provided the portion of the main vent stack above the connection is sized for the total fixture unit load connected thereto, and for the maximum developed length of the stack or sub-stack.

P109.4 Vent Terminals.-

(a) Extension above roofs.-Extension of vent pipes through a roof shall be terminated at least 24 in. above the roof surface. Where a roof is to be used for any purpose other than weather protection, the vent extensions shall be run at least 7 ft. above the roof surface.

(b) Size of vent extension.-Each vent extension shall be at least as large as the soil stack, waste stack, vent stack, or vent header served thereby, but in no case less than 4 in size. Where it is necessary to increase the size of a vent pipe at its vent extension, the change in size shall be made by use of a long increaser immediately below the roof.

(c) Waterproof flashings.-Each vent terminal shall be made watertight by proper flashing.

(d) Attachments prohibited.-Vent terminals shall not be used for the purpose of attaching flag poles, television aerials, or for similar purposes.

(e) Location of vent terminal.-

(1) No vent terminal shall be located directly beneath any door, operable window, or other ventilating opening of the building or of an adjacent building, nor shall any such vent terminal be within 10 ft. horizontally of such an opening unless it is at least 3 ft. above the top of such opening.

(2) Vent extensions shall not be run through an exterior wall.

(f) Extensions outside building.-No soil, waste, or vent pipe extension shall be run or placed on the outside of a wall of any building, unless such exterior installation on penthouses is permitted by the commissioner.

P109.5 Vent Grading and Connections.-

(a) Vent grading.-All vent and branch vent pipes shall be so graded and connected as to drain back to the soil or waste pipe by gravity.

(b) Height above fixtures.-

(1) A connection between a vent pipe and a vent stack or stack vent shall be made at least 6 in. above the flood-level rim of the highest fixture served by the vent. Horizontal vent pipes forming branch vents or relief vents shall be at least 6 in. above the floor-level rim of the highest fixture served.

(2) See Figure RS 16-4 for typical methods of compliance.

P109.6 Stack Venting.-

(a) Highest fixture connection to soil or waste stack.-Where a fixture discharges directly into a soil or waste stack at a level above all other drain connections thereto, the stack vent may serve as the vent for the fixture trap provided that:

(1) Such vent connection is above the level of the dip of the trap (except for fixture drains of floor-outlet type water closets and urinals, and of floor-outlet type trap standards for service sink):

(2) Such vent connection is within the distance permitted in this standard.

P109.7 Common Vents.-A common vent may serve as an individual vent for not more than two fixture traps. Such common vent shall connect at the junction of the two fixture drains and shall rise vertically from the connection before offsetting horizontally.

P109.8 Fixture Vents.-

(a) Distance of trap from vent.-Each fixture trap shall have a protecting vent so located that the developed length of the fixture drain from the trap weir to the vent fitting is not more than 2 ft. 0 in.

(b) Vent location.-The vent pipe opening from a soil

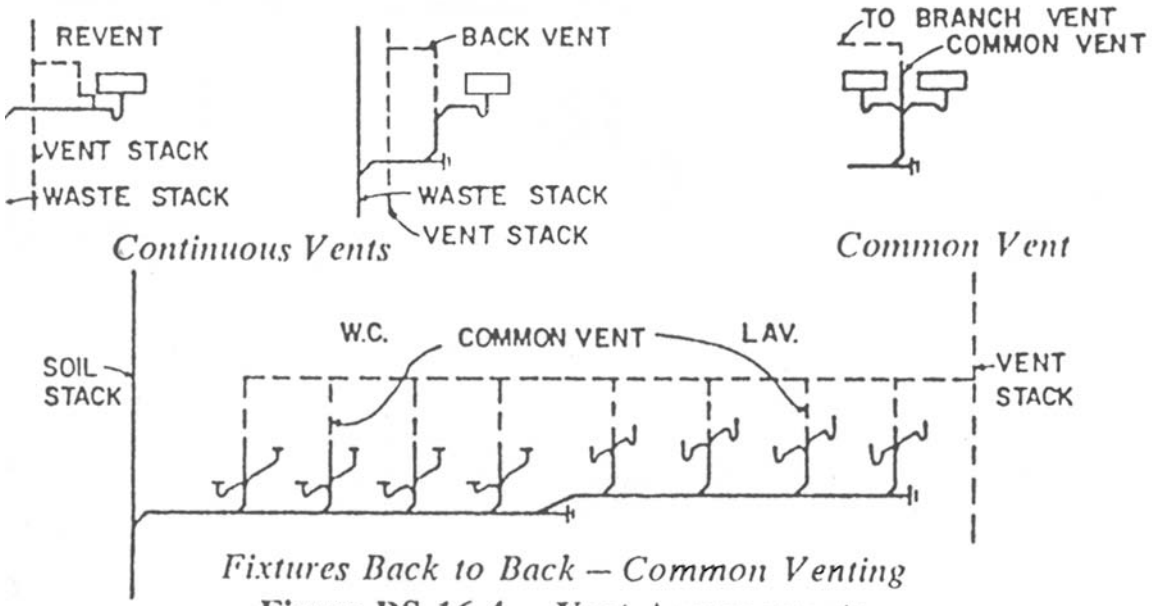


Figure RS 16-4. Vent Arrangements.

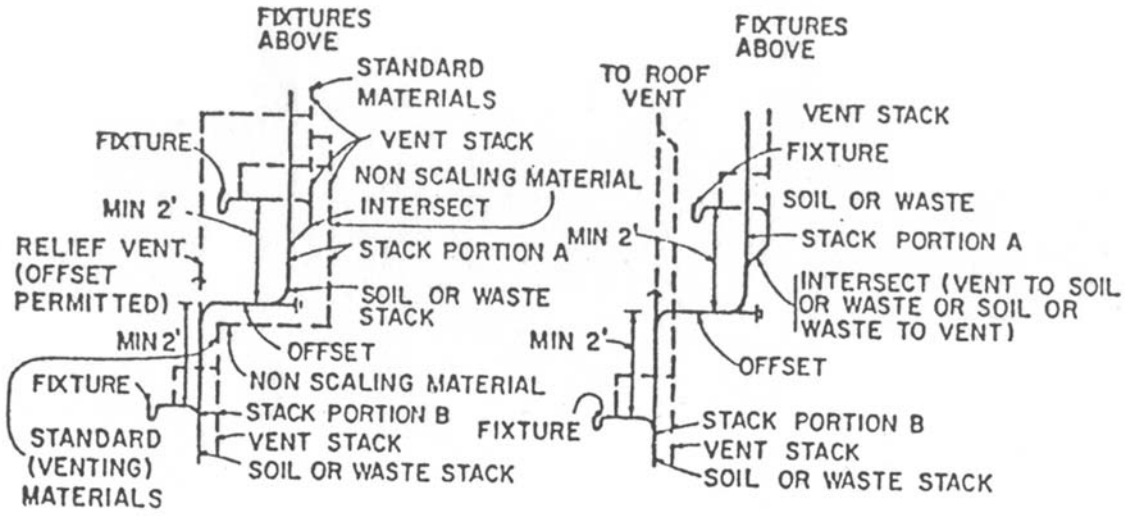


Figure RS 16-6. Offsets in Buildings Five Stories or More.

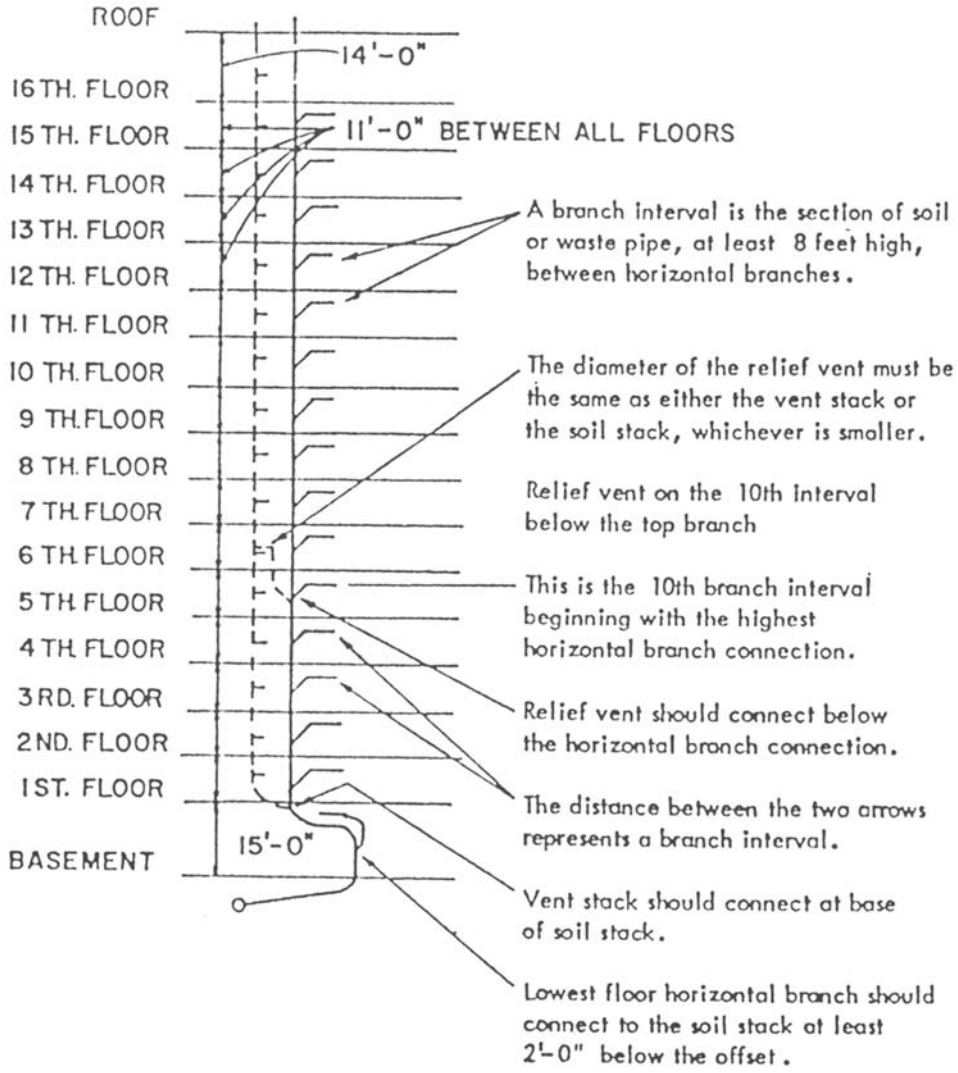


Figure RS 16-7. Relief Vents for Stack of More Than Ten Branch Intervals.

or waste pipe, except for water closets and similar fixtures, shall not be below the weir of the trap.

(c) Crown venting prohibited.-No vent shall be installed within two pipe diameters of the trap weir.

(d) Floor drain vents.-No vents will be required for piping serving floor drains when the floor drain is located not more than 15 ft. 0 in. from a vented line.

P109.9 Relief Vents.-

(a) Vertical offsets in building drains.-Where an offset between horizontal portions of the building house drain rises vertically more than 10 ft. a relief vent shall be provided at the top of the vertical offset. The size of such relief vent shall be at least 1/2 the diameter of the building house drain at the offset and at a sufficient height so that the relief vents cannot serve as soil or waste pipes in the event of a stoppage in the vertical offset. See Figure RS 16-6 for typical installation.

(b) Soil and waste stacks more than ten stories high.-Soil and waste stacks more than ten stories high shall be provided with a yoke relief vent at each tenth story, counting from the top story. The lower end of the yoke vent shall connect to the soil or waste stack through a wye located below the horizontal branch drain serving fixtures in that story, and the upper end shall connect to the vent stack through a tee or inverted wye at least 3 ft. above the floor level. See Figure RS 16-7 for typical installation.

P109.10 Suds Pressure Zones Vents.-

(a) Where sinks, laundry trays, laundry washing machines, bathtubs, and similar fixtures in which sudsy detergents are normally used and discharged at an upper floor level into a soil or waste stack that also serves fixtures in other occupancy units at a lower floor level, the drainage and vent piping for such lower fixtures shall be arranged so as to avoid connection to suds pressure zones in the sanitary drainage and vent systems. If connected to the sanitary system, a suds relief vent relieving to a nonpressure zone shall be provided at each suds pressure zone where such connections are installed. The size of such relief vent shall be at least 3/4 the diameter of the piping in which the pressure zone occurs, but not less than 2 in.

(b) Suds pressure zones shall be considered to exist at the following locations in sanitary drainage and vent systems when the piping serves fixtures on two or more

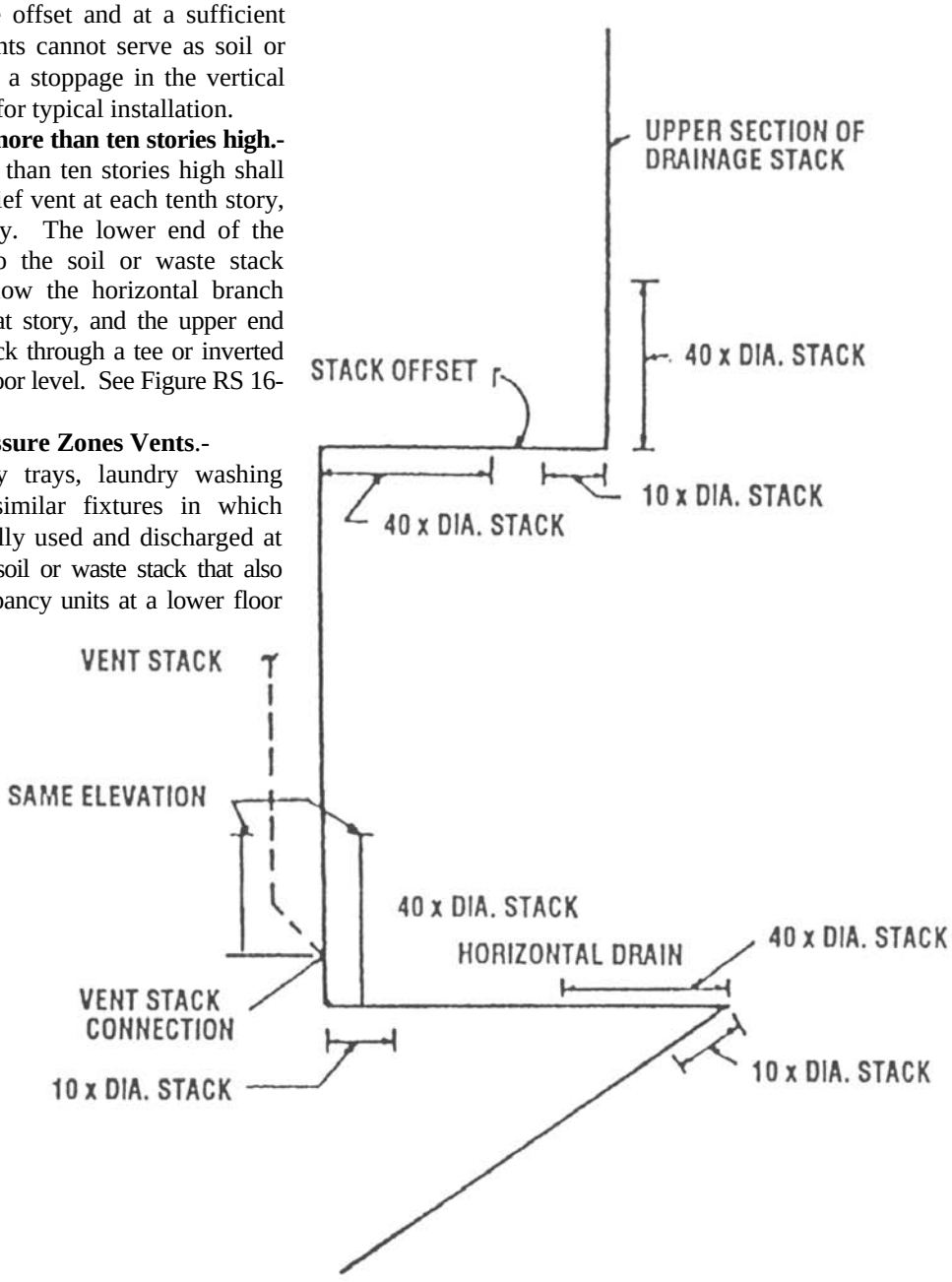


Figure RS 16-8. Suds Pressure Zones.

floors that receive wastes that contain sudsy detergents. See Figure RS 16-8 for location of suds pressure zones.

(1) In a soil or waste stack a zone shall be considered to exist in the vertical portion within 40 stack diameters of the base fitting.(2) In the horizontal drain at the base of a soil or waste stack a zone shall be considered to exist in the horizontal portion within ten stack diameters of the base fitting. Where a 60 degree or 90 degree fitting is installed in the horizontal drain, a zone shall be considered to exist in the horizontal portion within 40 drain diameters upstream of and 10 drain diameters downstream of the fitting.

(3) In a soil or waste stack offset of 60 degrees or 90 degrees, a zone shall be considered to exist in the vertical portion of the stack within 40 stack diameters of the base fitting for the upper section of the stack. The zone shall be considered to exist in the horizontal offset within 10 stack diameters of such base fitting and within 40 stack diameters of the top fitting for the lower section of the stack.

(4) In a vent stack that has its base connected to a suds pressure zone in the sanitary drainage system, a zone shall be considered to exist in the portion of the vent stack extending from its base connection up to the lowest branch vent fitting located above the level of the suds pressure zone in the sanitary drainage system.

P109.11 Permitted Combination Waste and Vent Systems.-A combination waste and vent piping system, limited for use as a means of venting the traps of floor drains and laboratory sinks, shall be permitted in conjunction with horizontal branch waste piping of an independent flammable oil waste system or acid waste systems, and as described under indirect wastes and special wastes. See Figure RS 16-9 for typical installation.

Section P110.0 Storm Drainage Piping

P110.1 Permits.-

(a) Permits for the installation of a building house storm sewer from the street line to, and including the spur connection at the street sewer shall be obtained in accordance with the requirements of the building code. Street sewer connections shall be made as provided in Section P108.2(a), (b), (c) and (d).

***P110.2 Disposal of Storm Water.-**

(a) Definitions.-As used in this section:

(1) "Block" means a tract of land bounded by streets, public parks, railroad rights-of-way when located at or above ground level but not including sidings or spurs within a lot in the same ownership as the lot, airport boundaries, pierhead lines or shore lines, where no pierced lines have been established, or corporate boundary lines of New York city;

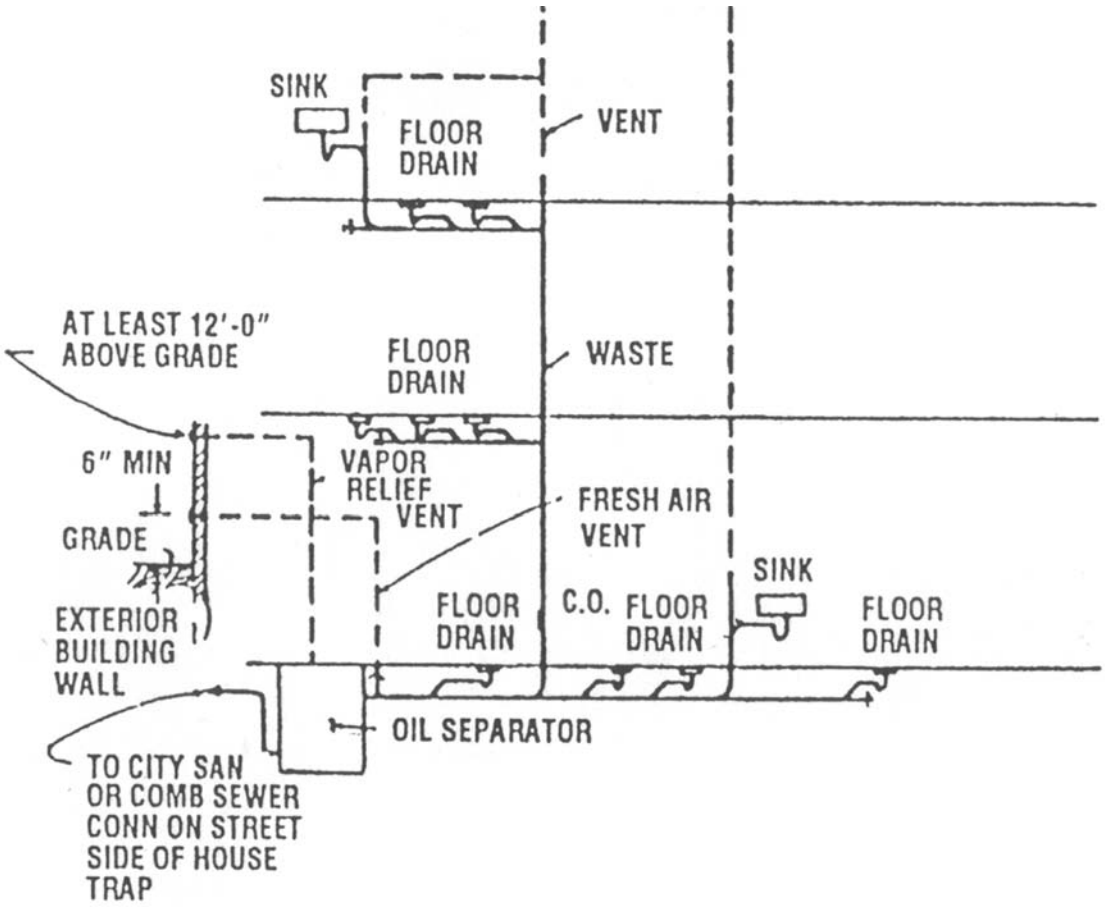


Figure RS 16-9. Combination Waste and Vent Oil Waste Drainage.

(2) "Building combined sewer" means a building sewer intended to convey all types of wastewater, subject to certain restrictions;
(3) "Building sewer" means a sewer consisting of the part of the horizontal piping of a drainage system that extends from the end of a building house drain, as defined in section P100.00 of reference standard RS-16 of this code, to a street sewer or to another point of disposal. Building combined sewers and building storm sewers are types of building sewers;
(4) "Building storm sewer" means that part of the horizontal piping of a storm water drainage system that extends from a building house storm drain, as defined in section P100.00 of reference standard RS-16 of this code, to a street storm sewer, a street combined sewer or another point of disposal;
(5) "Catch basin" means a storm water inlet connected to a storm sewer or a combined sewer;
(6) "Commissioner" means the commissioner of the department of buildings or his or her designee;
(7) "Development" means a tract of land which has been subdivided into two or more lots, whether or not such tract has been developed as by the installation of any utilities or the construction of any streets or buildings or other structures;
(8) "Impermeable soil" means soil of classes 1-65, 2-65, 3-65, 4-65, 5-65, 9-65, 10-65 or 11-65, as set forth in section 27-675 and table 11-2 of this code. Uncontrolled fill, as described in section 27-679 of this code, shall be considered impermeable soil;
(9) "Impervious surfaces" means those areas of a lot or development covered by roofs, terraces, outside balconies, canopies, or paved surfaces such as driveways, sidewalks, courts, streets, or parking areas. A surface paved with an accepted asphalt or other acceptable material which, after compaction, is not thicker than one and one-half inches shall not be considered impervious, provided such surface will pass an amount of water equivalent to one-half inch of rainfall per hour and is underlaid by permeable soil;
(10) "Lot" means a portion or parcel of land considered as a unit; a zoning lot;
(11) "Owner" means a person in whom legal or equitable title to property or premises is vested, a mortgagee or vendee in possession of premises, an assignee of rents, a receiver of premises or a person listed as owner or agent for an owner on the records as to real property ownership maintained by the bureau of city collections of the department of finance unless such person establishes that such records are erroneous or, if claiming that he is an agent of the owner, furnishes the identity of the owner;
(12) "Permeable soil" means soil at least five feet in depth of classes 6-65, 7-65, or 8-65, as set forth in section 27-675 and table 11-2 of this code, or porous material as determined by percolation tests. Controlled fill, as described in section 27-679 of this code, shall be considered permeable soil;
(13) "Person" means a natural person, company, partnership, corporation, association, governmental body or other legal entity, including any individual or entity acting in a representative capacity;
(14) "Private" means not public;
(15) "Public" means owned by the city and intended for use by the public, subject to restrictions which the city or agencies thereof may impose;
(16) "Storm water" means rain water or surface water;
(17) "Street combined sewer" means a street sewer which is intended to receive the discharge of all types of wastewater, subject to certain restrictions, from one or more building sewers and catch basins and to convey such wastewater to an intercepting sewer, a private sewage disposal system or some other point of disposal;
(18) "Street sewer" means a sewer located in the bed of a street or elsewhere which is intended to receive the discharge of all or certain types of wastewater from one or more building sewers and, in some cases, from catch basins, and to convey such wastewater to points of disposal. Street combined sewers and street storm sewers are types of street sewers;
(19) "Street storm sewer" means a street sewer which is intended to receive the discharge of storm water from one or more building storm sewers and catch basins and to convey such storm water to a point of disposal;
(20) "Substantial horizontal enlargement" means (a) an increase in the area of a lot covered by impervious surfaces which exceeds twenty percent of the existing area so covered, provided that the existing and enlarged areas so covered exceed one thousand square feet in total, or (b) an increase in the area of a lot covered by impervious surfaces which exceeds two hundred square feet, provided that the commissioner has previously approved the discharge of storm water from a building located on such lot by means of splash blocks; and
(21) "Tidal creek" means any creek where the level of water rises and falls with tidal action, or would do so if not impeded by artificial structures including but not limited to tide gates.

[**](b) Disposal of storm water when public sewers are located in front of the property.**-Where any new building or other substantial horizontal enlargement is to be constructed on a lot and the department determines that a public street storm sewer or public street combined sewer is located directly in front of any point of any boundary of such lot and that it would be feasible, pursuant to subdivision (j) of this section, to discharge storm water from such lot into such street storm sewer or street combined sewer, the owner of such lot shall ensure that all storm water falling or coming to rest on all impervious surfaces within such lot will be discharged to such street storm sewer or street combined sewer. Such discharge shall be by means of building storm sewers or building combined sewers, provided that no sewage shall be discharged into a public street storm sewer. If the department determines that such street storm sewer or street combined sewer has partial capacity to receive the storm water discharged from such lot, the remainder of such storm water shall be discharged pursuant to subdivision (c) of this section.

[**](c) Disposal of storm water when public sewers are not located in front of the property.**-Where any new building or other substantial horizontal enlargement is to be constructed on a property and the department

determines that no public street storm sewer or public street combined sewer is located directly in front of any point of any boundary of such property, the owner of such property shall ensure that all water falling or coming to rest on all impervious surfaces within such property will be discharged as follows:

(1) Where one or more buildings is to be constructed on the subject property in any occupancy group other than occupancy group J, drainage of storm water shall be by means of one building storm sewer or building combined sewer for each such building, which sewer shall be connected to a public street storm sewer or public street combined sewer. Such connection shall be by means of a house connection constructed in accordance with section P108.2 of this reference standard, the rules and regulations of the department and the applicable rules and regulations of the department of environmental protection, department of transportation and bureau of franchises. Provided, however, that no sewage shall be discharged into a public street storm sewer. Provided further, that the provisions of this paragraph shall apply only when

(A) the total area of impervious surfaces to be constructed on the subject property equals or exceeds twenty thousand square feet; and

(B) the commissioner of environmental protection has determined that a public street storm sewer or public street combined sewer is located within two hundred feet of any point of any boundary of such property, measured along a street, alley, right-of-way or easement; and

(C) the commissioner of environmental protection determines that it would be feasible, pursuant to subdivision (j) of this section, to discharge storm water in accordance with the provisions of this paragraph.

(2) Where paragraph one of this subdivision does not apply, drainage of storm water shall be by means of:

(A) On-site disposal of storm water in accordance with the provisions of section P110.13 of this reference standard; or

(B) Where a lot abuts a paved street which contains curbs and has been improved in accordance with the requirements of the department of transportation, drainage of storm water to the boundary of such lot abutting such street. From such boundary, such storm water may be discharged through an under-sidewalk drain or drains onto such street, provided that catch basins adequate to receive such storm water are located or installed in accordance with the requirements of this code and of the department of environmental protection. The means of drainage set forth in this subparagraph shall be used to discharge storm water from a lot only when the commissioner, with the concurrence of the commissioners of transportation and environmental protection, determines that such use is feasible; or

(C) Where a lot abuts any street, drainage of storm water by means of enclosed drainage pipes and building storm sewers or building combined sewers to the boundary of such lot abutting such street. From such boundary, all such storm water, together with all storm water falling or coming to rest on all streets and other paved areas outside of such lot which are constructed or altered for the primary purpose of improving vehicular or pedestrian access thereto, shall be conveyed by sewers, constructed in accordance with the requirements of subdivision (h) of this section and other requirements of the department and the department of environmental protection, to a public street sewer. In no event shall sewage be discharged into a public street storm sewer. When necessary to comply with the requirements of this subparagraph, the owner of such lot shall be responsible for installation of a controlled flow storm water system in accordance with the requirements of section P110.6 of this reference standard; or

(D) In the case of any lot or development, drainage of storm water from the impervious surfaces of such lot or development by means of drainage pipes, culverts, paved swales, ditches or watercourses. Such storm water may be conveyed by such means across lot lines within a development and through under-sidewalk drains within a lot or development to a boundary of such lot or development. From such boundary, such storm water, together with all storm water falling or coming to rest on all streets and other paved areas outside of such lot or development constructed or altered in connection with the construction of one or more buildings on such lot or in such development for the primary purpose of improving vehicular or pedestrian access thereto, shall be conveyed to one of the points of disposal set forth in subdivision (d) of this section. The means of storm water disposal described in this subparagraph may be utilized only if:

(i) The owner or owners of the lot or development shall submit to the commissioner a comprehensive grading and drainage plan for such development which, in the commissioner's judgment, will satisfy the drainage requirements set forth in this section. The commissioner of environmental protection and, if such plan provides for drainage of storm water into a catch basin located in a public or private street, the commissioner of transportation shall concur in such judgement; and

(ii) When the plan described in clause (i) of this subparagraph provides for the drainage of storm water from one lot in a development across other property in such development, the owner or owners of such development shall obtain an agreement between each owner of property within such development from which or across which such storm water will be drained and the commissioner.* Such agreement shall bind each such owner and his or her heirs, successors and assigns to properly maintain the storm water drainage system. Such agreement shall be filed in the office of the county clerk in the county in which the development is located; or

(E) Any means of drainage acceptable to the commissioner, including any combination of the means specified in subparagraphs (A), (B), (C), an (D) above. Provided, however, that over-sidewalk drains shall not be permitted. Provided, further, that the commissioner shall consult with the commissioner of environmental protection or the commissioner of transportation, as appropriate, prior to approving any such combination of means or any means of drainage not specified in this paragraph.

Language missing. So in original.

(d) Points of discharge for storm water from a lot or development.-Storm water drained from a lot or development pursuant to subparagraph (D) of paragraph two of subdivision (c) of this section may be discharged into:
(1) the New York harbor, or a point on a tidal creek acceptable to the commissioner of environmental protection as an adequate storm water outlet; provided that only building storm sewers and, if necessary, street storm sewers are constructed and that no sewage is discharged at such a point of disposal, and provided further that such outlets shall only be used in compliance with applicable provisions of law; or
(2) a public street storm sewer or public street combined sewer, regardless of its distance from the property, to which the commissioner of environmental protection determines that discharge of storm water is feasible, pursuant to subdivision (j) of this section, provided that no sewage shall be discharged into a street storm sewer; or
(3) an existing private street storm sewer or private street combined sewer to which the commissioner of environmental protection determines that discharge of storm water is feasible, pursuant to subdivision (j) of this section, provided that such street sewer connects with a public street sewer or, if it is a private storm sewer, discharges directly into the New York harbor, or into a point on a tidal creek acceptable to the commissioner of environmental protection as an adequate storm water outlet, in accordance with applicable provisions of law, and provided further that no sewage shall be discharged into a street storm sewer.
(e) Areaway drains.-Areaway drains may be connected to the footing or subsoil drainage system when permitted by the commissioner. Garages installed in a manner that would permit the flow of storm water from surrounding surfaces to enter the garages shall be provided with a gravity drain, or a sump and pump connected to a storm sewer, or other means of disposal as provided in this reference standard.
(f) Drains carrying clear water.-All drains carrying clear water, i.e., air conditioning drips, pump drips, cooling water, etc., may discharge into the storm water drainage system through an indirect waste connection discharging into a trapped funnel or drain.
(g) Drainage system design.-The storm water drainage system shall be designed, constructed and maintained to guard against fouling, deposit of solids and clogging and shall be provided with adequate cleanouts so arranged that the pipes may be readily cleaned.
(h) Maximum required capacity for street storm sewers or street combined sewers required by this section.-The commissioner of environmental protection may require an owner of a lot or a development who is required by this section to construct street storm sewers or street combined sewers to construct such sewers with a capacity not to exceed twenty-five percent above and beyond the capacity which the commissioner of environmental protection determines is needed for the disposal of storm water falling or coming to rest on such property together with storm water falling or coming to rest on all streets and other paved areas outside of such property which are constructed or altered in connection with the construction of a building or other substantial horizontal enlargement on such property for the primary purpose of improving vehicular or pedestrian access thereto. The department of environmental protection reserves the right to construct catch basins connected to such sewers at the cost and expense of the city, to alleviate flooding or ponding conditions, provided that the commissioner of environmental protection determines that the capacity of such sewers shall not be exceeded.
(i) Repair of defects in catch basins and sewers required.-Any owner of property who causes any catch basin or any sewer which shall lie outside of such property to be constructed pursuant to subdivision (c) of this section shall cause all defects in such catch basin or sewer and all faults in its installation to be repaired for a period of two years after it has been installed, immediately after the commissioner of environmental protection orders such person to do so.
(j) Feasibility of discharging storm water into a street storm sewer or a street combined sewer.-The commissioner of environmental protection shall determine that the discharge of storm water into a street storm sewer or a street combined sewer pursuant to this section is feasible if he finds that:
(1) the sewer is of adequate capacity to receive all such storm water or would be adequate to receive it if the owner of property installed controlled flow storm water systems, in accordance with the requirements of section P110.6 of reference standard RS-16 of this code, to restrict the maximum anticipated storm water flow to a level set by the commissioner of environmental protection;
(2) the sewer is in adequate physical condition to receive such storm water;
(3) no physical obstacle which would make conveyance of storm water to the sewer impracticable exists between the sewer and the boundaries of the development or lot from which such storm water shall be discharged;
(4) conveyance of such storm water to the sewer is not impracticable because of the elevation of the sewer in relation to the development or lot from which such storm water shall be discharged;
(5) the sewer is located in the same drainage area as all or most of the development or lot from which such storm water shall be discharged; and
(6) no other factor reasonably related to the conveyance of such storm water from such development or lot to the sewer would make the discharge of such storm water into the sewer impracticable or undesirable as a proper means of storm water disposal.
(k) Time by which construction of the storm water drainage system required by this section shall be completed.-The storm water drainage system for property required by this section shall be completed prior to the issuance of a certificate of occupancy by the department of buildings for, and actual occupancy of, the building or other substantial horizontal enlargement in connection with which such storm water drainage system is being constructed.
(l) Contractual obligations of the city not abrogated.-The provisions of this section shall not be construed to abrogate or contravene any contractual obligation of the city to construct storm water drainage systems or parts thereof. The requirements of subdivisions (b), (c), (d)

and (i) of this section shall be inapplicable to an owner of property insofar as they relate to any construction work required to be performed by the city pursuant to such a contractual obligation.

(m) Remedies for non-functioning systems.-If the commissioner determines that a system of storm water disposal which has been previously approved under the provisions of this code or of previous codes is no longer providing adequate drainage of storm water from a lot or development, he or she shall order repair of such system as required by section 27-127 of this code; or if, in the judgment of the commissioner, repair of such system is not sufficient to ensure adequate drainage of storm water from such lot or development, he or she shall order that one of the methods of storm water disposal set forth in subdivisions (b) and (c) of this section shall be used to provide such drainage. The commissioner may apply to the board of standards and appeals for modification of the certificate of occupancy of any building constructed on such lot or development to require the use of such method.

***Local Law 103-1989; Local Law 7-1974**

****** Local Law 65-1996**

P110.3 Storm Water Drainage to Sanitary Sewer Prohibited.-Storm water shall not be drained into sanitary sewers intended for sewage only.

P110.4 Size of Storm Drains and Leaders.-

(a) Building storm drain.-The size of the building storm drain or any of its horizontal branches, except the branch serving a single roof drain, having a slope of 1/2 in. per ft. or less shall be based upon the maximum projected roof or paved area to be handled according to Table RS 16-17.

(b) Storm sewers.-Where more than one building storm drain discharges into a private sewer within the property line, the sewer may be sized on a rational sewer design basis and the slope of the sewer shall be predicated on the size selected; but in no case shall the slope be less than that required to produce a velocity in the sewer of at least 3 fps.

(c) Vertical leaders.-Vertical leaders, including the branch to a single roof drain, shall be sized on the maximum projected roof area in accordance with Table RS 16-18. The equivalent diameter of square leader may be taken as the diameter of that circle which may be inscribed within the cross-sectional area of the leader. The equivalent diameter of a rectangular leader shall be taken as the number of standard size circular leaders, having a diameter equal to the short dimension of the rectangular leader that can be fitted within the rectangular leader. For example, the equivalent diameter of a 4 in. by 3 in. rectangular leader is 1-1/3 3 in. circular leaders.

(d) Roof gutters.-The size of a semicircular gutter shall be based on the maximum projected roof area according to Table RS 16-19.

(e) Combined drains and sewers.-To compute the size of a combined drain or sewer, the fixture units and the square feet of drained area shall be converted to their equivalent square footage or drainage area from Table RS 16-20 and either Table RS 16-13 or RS 16-17 shall be used to determine the pipe size required. For intermediate values, interpolation shall be used.

TABLE RS 16-17 SIZE OF HORIZONTAL STORM DRAINS

	Maximum Projected Roof Area for Various Slopes of Drains		
Diameter of Drain (in.)	1/8 in. Slope Square Feet	1/4 in. Slope Square Feet	1/2 in. Slope Square Feet
2	250	350	500
2 1/2	357	505	714
3	690	930	1,320
4	1,500	2,120	3,000
5	2,700	3,800	5,320
6	4,300	6,100	8,700
8	9,300	13,000	18,400
10	16,600	23,500	33,000
12	26,700	37,500	53,000
15	47,600	67,000	95,000

TABLE RS 16-18 SIZE OF VERTICAL LEADERS

Diameter of Leader or Conductor (in.)	gpm.	Maximum Projected Roof Area (sq. ft.)
2	22.6	433
2 1/2	39.6	779
3	66.6	1,278
4	143	2,745
5	261	4,992
6	423	8,121
8	911	17,491
10	1,652	31,718

TABLE RS 16-19 SIZE OF ROOF GUTTERS [a]

Diameter of Gutter[a] (in.)	Maximum Projected Roof Area for Gutters of Various Slopes			
	1/16 in. Slope (sq. ft.)	1/8 in. Slope (sq. ft.)	1/4 in. Slope (sq. ft.)	1/2 in. Slope (sq. ft.)
3	144	192	272	385
4	288	409	575	815
5	500	705	1,000	1,420
6	770	1,090	1,540	2,220
7	1,150	1,560	2,220	3,120
8	1,590	2,250	3,180	4,490
10	3,600	4,080	5,780	8,000

Note-
[a] Gutters other than semicircular may be used provided they have the same cross-sectional area.

P110.5 Values for Continuous Flow.-Where there is a continuous or semi-continuous discharge into the building storm drain or building storm sewer, as from a pump, ejector, air conditioning unit, or similar device, each gallon per minute of such discharge shall be computed as being equivalent to 19 sq. ft. of roof area.

P110.6 Controlled Flow Storm Water System.-In lieu of sizing the storm drainage system in accordance with section P110.4, the roof drainage may be sized on controlled flow and the storage of the storm water on the roof, provided the following conditions are met:

(a) The water of a 10-year frequency storm is not stored on the roof for more than 24 hr.

(b) The water depth on the roof does not exceed 3 in. during the above storm.

(c) The roof is level and 45 degree cants are installed at all walls or parapets.

(d) Flashing extends at least 6 in. above the roof level and scuppers are placed in the parapet wall 4 in. above the roof level.

(e) No less than two drains are installed in roof areas 10,000 sq. ft. or less; and at least four drains in roof areas over 10,000 sq. ft.

(f) Separate storm and sanitary drainage systems are installed within the building.

(g) Control is by proportional weirs and not by mechanical devices or valves.

(h) Calculations for this type of system are submitted with the required plans and piping is sized in accordance with gallon per minute ratings in Table RS 16-18.

(i) Drains on set backs may be connected to the controlled storm drainage if:

(1) The set back is designed for storing the water, or

(2) The square footage of drainage area of the set back is converted to gallons per minute flow on the basis of 1 gpm for each 19 sq. ft. of roof area, and the storm water pipe sizes in the controlled system are predicated on carrying the sum of the loads.

(3) The branch from each of the roof drains that are not arranged and equipped for controlled flow conform to tables RS 16-17 and RS 16-18.

TABLE RS 16-20 "FIXTURE UNIT-DRAINAGE SQUARE FOOTAGE" EQUIVALENT

Drainage Area (sq. ft.)	Fixture Unit Equivalent
180	6
260	10
400	20
490	30
1,000	105
2,000	271
3,000	437
4,000	604
5,000	771
7,500	1,188
10,000	1,500
15,000	2,500
20,000	3,500
28,000	5,500
each additional 3 sq. ft.	1 fixture unit

P110.7 Traps on Storm Drains and Leaders.-
(a) Where required.-Leaders and storm drains when connected to a combined sewer shall be trapped. No fresh air inlet will be required for building storm drains. Intake and exhaust plenum drains connected to a storm drain shall be trapped. One trap may serve more than one drain if any drain served by the trap is not more than 15 ft. from the trap.
(b) Where not required.-No traps shall be required for storm water drains that are connected to a building house drain or building house sewer carrying storm water exclusively.
(c) Trap equivalent.-A hooded catch basin located within the street line shall be the equivalent of a building or house trap for the connection to a street combined sewer.
(d) Method of installation.-Individual storm water traps shall be installed on the storm water drain branch serving each conductor, or a single trap shall be installed in the main storm drain just before its connection with the combined building sewer, main drain, or public sewer.

P110.8 Leaders or Storm Water Piping.-
(a) Improper use of storm water piping.-Leader or storm water pipes shall not be used as soil, waste, or vent pipes.
(b) Protection of rain water conductors.-Rain water conductors installed along alleyways, driveways, or other locations where they may be exposed to damage shall be protected by metal guards, be recessed into the wall, or be constructed of pipe.
(c) Method of combining storm with sanitary drainage.-The sanitary and storm-drainage system of a building shall be entirely separate except that where a combined street sewer is deemed available, the building storm drain may be connected, in the same horizontal plane through a trap and a single fitting to the combined drain or sewer at least 40 pipe diameters downstream from any soil stack.

P110.9 Roof Drain Strainers.-
(a) General use.-All roof areas, except those draining to hanging gutters, shall be equipped with roof drains having strainers extending at least 4 in. above the surface of the roof immediately adjacent to the roof drain. Strainers shall have an available inlet area above roof level at least 1 1/2 times the area of the conductor or leader to which the drain is connected.
(b) Flat decks.-Roof drain strainers for use on such decks, parking decks, and similar areas, normally serviced and maintained, may be of the flat surface type and set flush with the deck, and shall have an available inlet area at least twice the area of the conductor or leader to which the drain is connected.

P110.10 Roof Drain Flashings Required.-The connection between roofs and roof drains that pass through the roof and into the interior of the building shall be made watertight by the use of proper flashing material.

P110.11 Expansion Joints Required.-Expansion joints or sleeves shall be provided where temperature variation or physical conditions may cause excessive stress or movement in the drain or piping.

P110.12 Sanitary and Storm Sewers.-Where separate systems of sanitary drainage and storm water drainage are installed in the same property, the storm and sanitary building sewers and drains may be laid side by side in the same trench.

*** P110.13 On-Site Disposal.-**
(a) Storm water, as defined in subdivision (a) of section P110.2 of this reference standard, falling on areaways 25 sq. ft. or less in area may be leached into the ground within the areaway if the ground water is at least 2 ft. below the elevation of the areaway.
(b) An owner of a lot, as defined in subdivision (a) of section P110.2 of this reference standard, may dispose of all storm water falling or coming to rest within such lot on-sight only as permitted by the provisions of subdivision (c) of section P110.2 of this reference standard.
(c) Drywells shall be the only method of on-site disposal of storm water permitted, except as provided in subdivision (a) of this section or unless an alternate method of on-site disposal is approved by the commissioner with the concurrence of the commissioner of environmental protection or the commissioner of transportation, as appropriate, pursuant to subparagraph (E) of paragraph two of subdivision (c) of section P110.2 of this reference standard. Drywells shall be constructed in accordance with the following provisions:
(1) Except as provided in paragraph two of this subdivision, the size of a drywell shall be predicated on a soil percolation test performed in accordance with the provisions of section P113.9 of this reference standard, and shall be based upon rainfall of two inches in a twenty-four-hour period on all impervious surfaces where a site is underlaid by permeable soil. Where a site is underlaid by impermeable soil, the size of a drywell shall be based upon rainfall of two inches in a twenty-four hour period over the entire site.

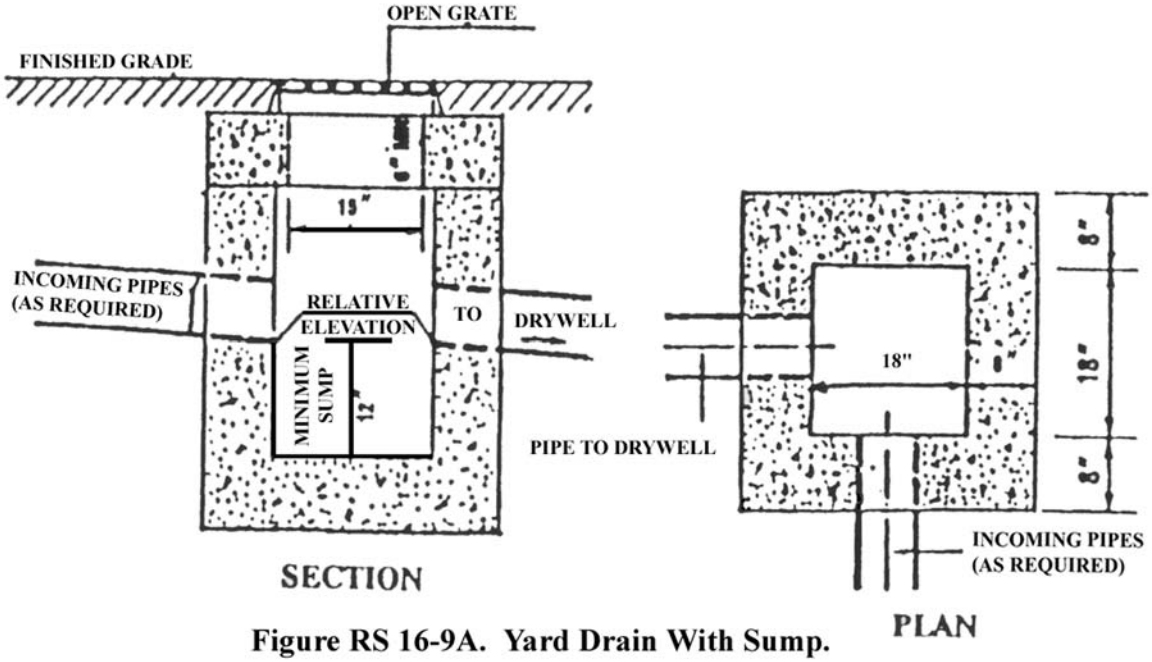


Figure RS 16-9A. Yard Drain With Sump.

(2) If a drywell is used in combination with one or more other methods of storm water disposal pursuant to subparagraph (e) of paragraph two of subdivision (c) of section P110.2 of this reference standard, the size of such drywell shall be determined by the percentage of the storm water such drywell shall dispose.

(3) The construction of drywells shall be subject to controlled inspection.

(4) Drywells shall be located at least five feet from all lot lines and ten feet from all foundations or walls existing on the date of application for a building permit or proposed under the application to construct the drywell.

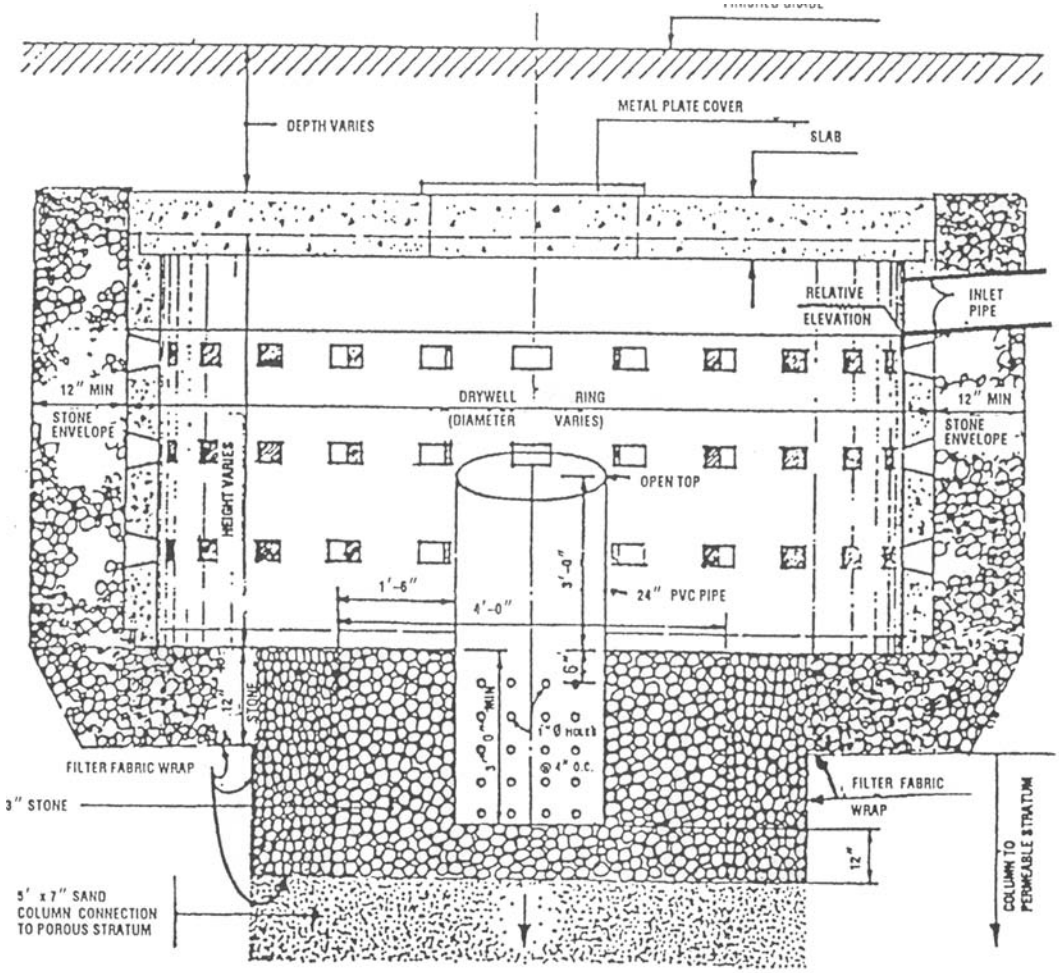


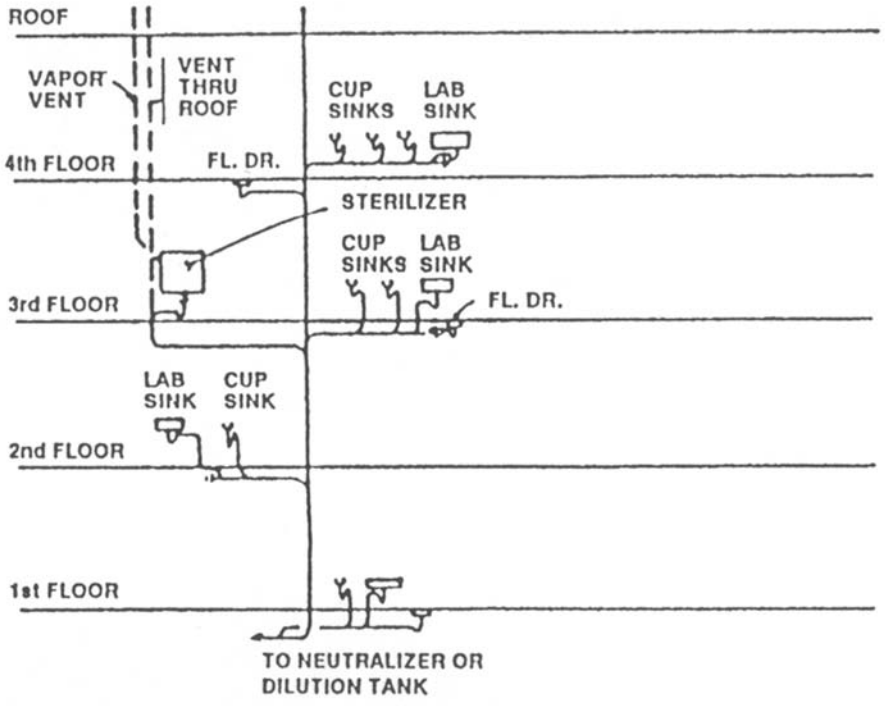
Figure RS 16-9B. Detail of Dry Well With Sand Column.

(5) Notwithstanding the provisions of sections 27-663 and 27-664 of this code, at least one boring and one test pit shall be made at the approximate site of each contemplated drywell.
(6) The storage volume of the drywell shall be measured two feet above the level of the water table, as determined by the test pit at the site of the drywell.
(7) A grit chamber shall be included as part of all drywell systems. It shall be constructed in accordance with figure RS 16-9A.
(8) If the boring and test pit disclose that the drywell is located within or underlaid by impermeable soil, it shall be constructed in accordance with figure RS 16-9B.
(9) If the drywell is underlaid by permeable soil, it shall be constructed in accordance with figure RS 16-9B, except that the sand column to permeable soil may be omitted.
Local Law 103-1989; Local Law 7-1974

Section P111.0 Indirect Waste Piping

P111.1 Indirect Waste Required.-

(a) Indirect waste connections to the building drainage system shall be provided where specifically required in this reference standard and for all plumbing fixtures, appliances, and devices where the backing up of waste water or sewage from the drainage system would permit either of the following:
(1) The contamination of food, drinks, or utensils used for the preparation or serving of foods.
(2) The contamination of surgical and medical equipment.
(b) Wastes from the following fixtures, devices, appliances, or apparatus shall discharge to the building drainage system through indirect wastes that conform to the material, trap, and drainage pipe sizing requirements of this reference standard.
(1) FOOD HANDLING DEVICES.-Establishments engaged in the storage, preparation, selling, servicing, processing, or otherwise handling of food shall have the waste piping from all refrigerators, ice boxes, walk-in freezers, cooling or refrigeration coils, steam tables, egg boilers, coffee urns, or similar enclosed equipment discharge indirectly into a water supplied sink or receptor. Culinary and open sinks shall be directly connected to the drainage system.
(2) LAUNDRY WASHERS AND EXTRACTORS.-Laundry washers, extractors, and similar equipment shall have the waste water discharge indirectly into a water supplied sink or receptor.
(3) DRAINS AND OVERFLOWS.-Indirect waste connections shall be provided for drains, overflows, or relief pipes from the water distribution system.
(4) STERILIZERS.-Stills, sterilizers, and similar appliances, devices, or apparatus that require water and waste connections and are used for sterile materials shall be indirectly connected.



Note:
No venting if each branch to stack has 10 fix. units or less and is less than 30'-0". If branch is over 30'-0" installation shall be as shown on RS 16-11.

Figure RS 16-10. Acid Drainage for Buildings Four Stories or Less.

(5) DRIPS OR DRAINAGE OUTLETS.-Appliances, devices, or apparatus not regularly classed as plumbing fixtures, but which have drips or drainage outlets, may be drained by indirect waste pipes.
(6) WASTE DISCHARGING CLEAR WATER.-
Expansion tanks, cooling jackets, sprinkler systems, or similar devices that waste clear water only shall discharge into the building storm or sanitary drainage system through an indirect waste.
(7) SWIMMING POOLS.-Pipes carrying waste water from swimming or wading pools, including pool drainage, backwash from filters, or water from scum gutter drains, shall be installed as indirect wastes. Circulation pumps may be utilized to lift waste water when the waste line is below the sewer grade.
(8) PRESSURE TANKS, BOILERS AND RELIEF VALVES.-The drains from pressure tanks, boilers, relief valves, and similar equipment shall be connected to the drainage system through indirect wastes.
(9) REFRIGERATORS.-Each indirect waste pipe from a refrigerator or equipment used for storage of food shall discharge into a receptacle through an air break and, in no instance, shall the indirect waste be trapped ahead of the air break. The maximum developed length of piping between the outlet and the air break shall be 2 ft.
(c) The air break for the indirect waste shall be provided by terminating the open end of the pipe at least 1 in. above the flood level rim of the receiving fixture or receptacle.

P111.2 Common Indirect Wastes.-The wastes from drinking fountains, bar sinks, soda fountains, and similar fixtures may be connected to a common indirect waste stack or header, provided each fixture connected thereto is properly trapped.

P111.3 Venting.-No vents need be provided for the traps of fixtures that are connected to indirect waste piping. Indirect wastes exceeding 100 ft. in developed length, except for indirect wastes from show case refrigerators, which shall not exceed 25 ft. in developed length, shall be extended through the roof or outside wall independent of vents for the regular sanitary system, and they shall terminate as required for sanitary vents.

P111.4 Sizing.-Indirect wastes shall be sized in accordance with the requirements of the direct waste system on the basis of fixture units only. Developed length shall not apply in determining pipe size.

P111.5 Receptors or Sumps.-
(a) Installation.-
(1) Waste receptors or sumps serving indirect waste pipes shall not be installed in any toilet room, unless installed in a separate compartment, nor in any inaccessible or unventilated space.
(2) All plumbing receptors receiving the discharge of indirect waste pipes shall be of such shape and capacity as to prevent splashing or flooding.
(3) Standpipe receptors for automatic clothes washers shall be installed in one of the following ways:
a. The standpipe receptor shall be individually trapped and vented, the trap shall not be installed below the floor, and the standpipe shall extend not more than 30 in. nor less than 18 in. above the trap weir.
b. The standpipe receptor shall be installed in the grating of a floor drain that shall be tapped to receive the standpipe, and the floor drain size shall be predicated on either the discharge rate of the automatic clothes washer or the floor area to be drained, whichever is greater.
(b) Strainers and baskets. Every indirect waste receptor shall be equipped with a removable basket or a beehive strainer not less than 4 in. in height. Floor drains receiving an indirect waste discharge need not have dome strainers.
(c) Domestic or culinary fixtures prohibited as receptors. No plumbing fixture that is used for domestic or culinary purposes shall be used to receive the discharge of an indirect waste pipe, except that in a dwelling a kitchen sink may be used as the receptor for a dishwasher, and a laundry tray may be used as the receptor for a clothes washing machine.

P111.6 Condensers and Sumps.-No steam pipe shall connect to any part of a drainage or plumbing system, nor shall any water above 150 degrees F be discharged into any part of the drainage system, except that 180 degrees water may be discharged as permitted herein from a commercial dishwasher or laundry. Such pipes, except from the dishwasher, shall be connected by discharging into an indirect waste receptor connected to the drainage system.

Section P112.0 Special and Miscellaneous Waste Piping

P112.1 Industrial Wastes.-Industrial wastes from abattoirs, chemical plants, metal platers, dye works, and similar wastes may not be discharged to a sewer system without an industrial waste permit of the department of public works, except as hereinafter provided.

P112.2 Chemical Wastes.-
(a) No corrosive liquids, acids, strong alkalis, or other chemicals that might destroy or damage the drain, soil, waste, or vent pipes, or that might create noxious or dangerous fumes, shall be discharged into the regular drainage systems until brought within permitted concentrations by treatment.
(b) Such chemicals shall discharge through an independent sanitary drainage system to a dilution or neutralizing device as described in section P105.0 or through some other means of disposal designed by an architect or engineer, subject to the approval of the commissioner and of any other agency or agencies

having jurisdiction.

(c) Chemical waste and vent piping shall be of materials resistant to the corrosive action of chemical fumes in accordance with section P102.4.

(d) The size of the vent and drainage piping shall meet the requirements for sanitary vent and drainage systems in sections P108.0 and P109.0.

(e) All traps in an acid waste system shall have a deep seal.

(f) The acid drainage system shall consist of a waste and a vent stack. In a building where acid drainage systems are provided to serve fixtures, drains, and/or equipment on four floors or less and have no horizontal branch from the waste stack exceeding 30 ft. developed length to the farthest fixture, the waste stack can serve as a wet vent and no branch venting shall be required. See Figure RS 16-10 for typical installation.

(g) Acid dilution or neutralization sumps may be located directly adjacent to, or beneath, each acid sink or fixture. The discharge from each individual acid sump shall connect to the sanitary drainage system and the vent shall be treated in the same manner as a sanitary vent.

(h) Where a common acid neutralization sump for several fixtures or stacks is used, it shall be located at the lowest story above the house drain. A separate acid dilution sump may be used for fixtures on the first floor and below, and the neutralized effluent shall be lifted from the acid dilution sump to the gravity drainage system by pumping. The drain line at the inlet to dilution sump shall be provided with a relief vent at least 2 in. in diameter or 1/2 the diameter of inlet pipe, whichever is greater. The vent shall terminate in the outside air above the roof or connect to an acid system vent stack or stack vent.

(i) Each drainage pipe that extends more than 30 ft. from the stack or has more than ten fixture units discharging into it shall be provided with a vent connection from the vent stack or stack vent to a connection in the drain line installed between the last two fixtures on the drain line and each 30 ft. increment. Also, a relief vent shall be installed in the horizontal branch waste within 4 ft. of the stack. See Figure RS 16-11 for typical installation.

(j) Fixtures such as floor drains, receptors receiving the indirect waste from sterilizers, stills, and drains from other laboratory equipment within the laboratory area may be connected to the acid drainage system, if the fixtures, excluding floor drains, are provided with individual vents, and all of the piping connecting these fixtures of acid resistant material, or when permitted by

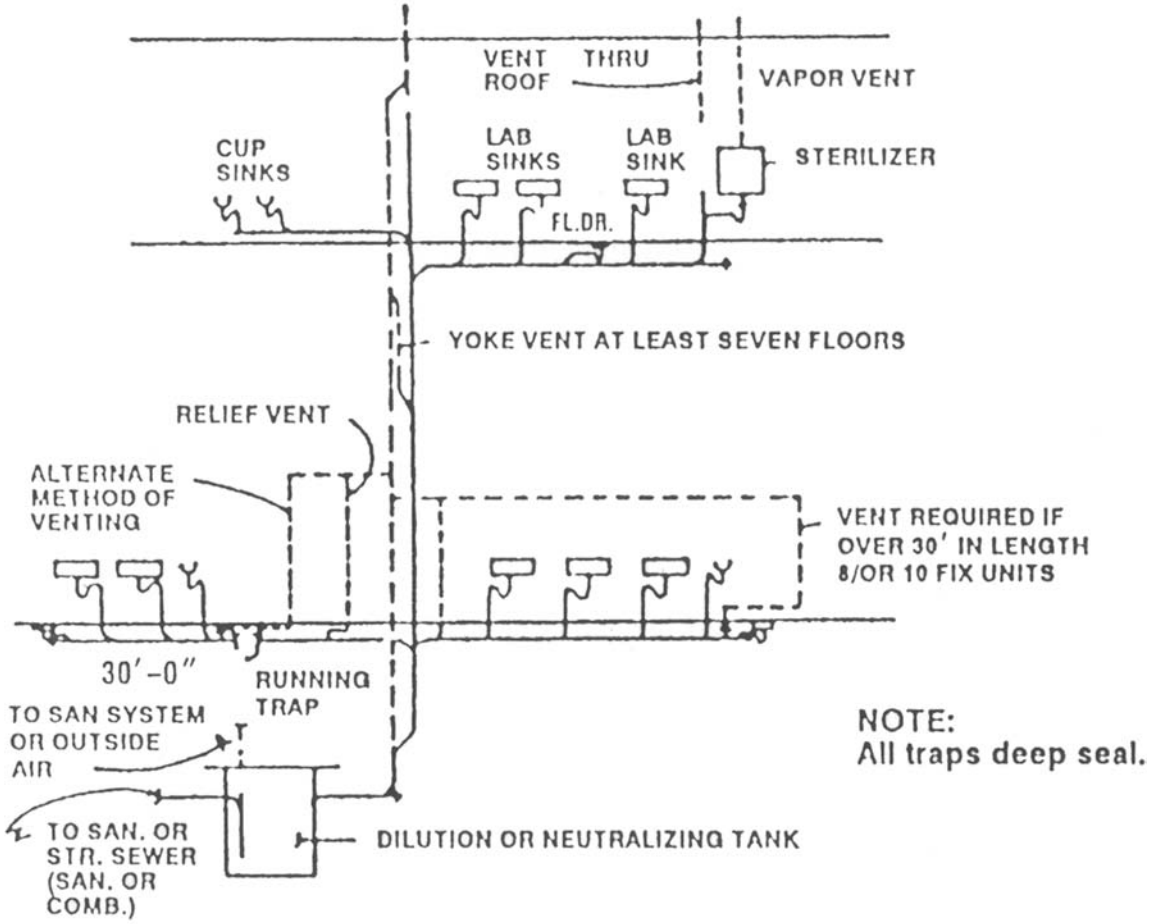


Figure RS 16-11. Acid Drainage for Buildings Over Four Stories.

the commissioner, of cast iron.
(k) Materials shall be in accord with section P102.4(b)(5) and P102.4(c)(3).

P112.3 Flammable Solvents or Oil Wastes.-Flammable solvents or oil wastes shall be disposed of in accordance with the requirements of section P105.0 or such other method as may be permitted by the department of public works, so that no appreciable amount of flammable or combustible material is discharged to the public sewer in such quantities as to cause an explosive condition. See Figure RS 16-9 for typical installation.

P112.4 Radioactive Wastes.-Radioactive wastes shall be treated and disposed of by a method designed by an architect or engineer, subject to the approval of the commissioner and of any other agency or agencies having jurisdiction.

***Section P113.0 Individual Sewage Systems**
****Local Law 85-1973***

*****P113.1 Information Required**.-An applicant desiring to construct an individual on site private sewage disposal system shall file a statement certified by a registered architect or licensed professional engineer that there is no available sewer to which the property in question may connect and the distance to the nearest public sewer. In addition, such construction shall be subject to a site and subsoil evaluation to be performed under the supervision of an employee of the department.
******Local Law 65-1996***

P113.2 Individual Sewage Disposal Systems.-Where public sewers are deemed not available, the method of sewage disposal shall be designed by an architect or engineer, subject to the approval of the commissioner.

P113.3 Individual Sewage Disposal System (One-and Two-Family Dwellings).-Where public sewers are deemed not available and a temporary private pumping station or community disposal system is not installed, an individual private sewage disposal system shall be designed by a licensed professional engineer or registered architect and installed in accordance with the requirements of this reference standard and shall be subject to controlled inspection.

P113.4 Housing Development Sewage Disposal Systems.-When housing developments consisting of more than 15 one-family dwellings or a multiple dwelling of 15 or more dwelling units, are to be built and public sewers are deemed not available, a communal sewage disposal system with street sewers shall be installed in accordance with the drainage plan of the department of water resources.

****TABLE RS 16-21 MINIMUM DISTANCES BETWEEN SEWAGE SYSTEM COMPONENTS AND BETWEEN COMPONENTS AND INCUMBRANCES**

System components	Building Foundation wall	Property line	Disposal Field	Seepage Pits	Drywell	Water Service Line
Septic tank	5 ft.	—	5 ft.	5 ft.	—	—
Disposal field	10 ft.	5 ft.	20 ft.	20 ft.	20 ft.	10 ft.
Seepage pits	15 ft.	10 ft.	20 ft.	20 ft.	20 ft.	10 ft.
Drywells	10 ft.	5 ft.	20 ft.	20 ft.	—	—

Note-
The seepage pits and drywells may be located contiguous with street line.
*****Local Law 103-1989; Local Law 85-1973***

P113.5 General Requirements.-
(a) The sewage disposal system shall consist of all necessary piping and a septic tank or tanks that discharge into a disposal field or seepage unit, as may be required. Septic tanks shall not discharge into open streams.
(b) Storm water or ground water shall not be discharged into a septic tank or into the disposal system used to disperse the effluent from the septic tank.
(c) The use of cesspools is prohibited.
(d) Slope from seepage unit or distribution pipe invert to lower grades shall not exceed 7.5 percent.
(e) Backfill surrounding the seepage unit stone shall be clean, coarse sand as specified.
(f) Sheathing for seepage unit shall be removed after backfilling.
(g) All manholes in paved areas shall have a cast iron watertight frame and cover flush with the finished paved surface.
(h) Slope of lines to septic tank, seepage unit and distributing box shall be not less than 1/4 in. per ft. and shall be shown on the drawings. All piping to these components shall be extra heavy cast iron pipe, not less than 4 in. inside diameter.
(i) The entire system shall be located in front of the building unless it is not feasible to do so. If placed in a location other than the front, dry piping with trap properly plugged, shall be carried from the house plumbing stack through the front foundation wall to preclude the need for rearranging plumbing when sewers become available; clear access not less than nine feet wide, shall be provided to the disposal system for servicing.
(j) Sand used in all absorption systems or in fill operations as a medium for subsurface disposal of sewage effluent shall be clean, coarse sand, all passing a 1/4 in. mesh screen, conforming to ASTM specifications C33-1967.
(k) Stone used in all systems shall be washed and graded, hard durable fragments of granite, trap or other approved rock free from thin or long pieces, screenings, dust, fine stone and foreign substances. The stone shall be well graded between the limits specified.

P113.6 Location.-The minimum permissible distance between the various components of the sewage system and between the components and various

encumbrances are given in Table RS 16-21. All components shall be located within the property line of the premises for which the system is installed.

P113.7 Septic Tanks.-(a) Construction.- Septic tanks shall be constructed of material not subject to excessive corrosion or decay and shall be made watertight. Manhole covers and roof shall be designed for a live load of at least 150 psf. Concrete covers when used, shall be reinforced and at least 4 in. thick. Metal septic tanks shall conform to United States Commercial Standard 177-62.

***(b) Manholes.-**

(1) The septic tank shall have one manhole situated over the inlet and one over the outlet of the tank. Manholes shall be at least 20 in. square or 24 in. in diameter. The top of the manhole cover shall extend to within 12 in. of final grade to provide easy access for inspection and cleaning. If the septic tank is placed deep in the ground, a chimney or riser shall be provided to raise the manhole cover to the required distance below grade. No person other than a licensed master plumber or a person engaged in sewer services shall remove or open the manhole cover of any septic tank unless otherwise authorized during an emergency by an officer or employee of a city agency.

(2) For purposes of this subdivision, "person engaged in sewer services" shall be defined as one who renders sewer services, including but not limited to installing, altering, repairing, cleaning and pumping sewers, septic tanks and cesspools, as a part of one's regular business or employment.

***Local Law 21-1981**

(c) Capacity.-

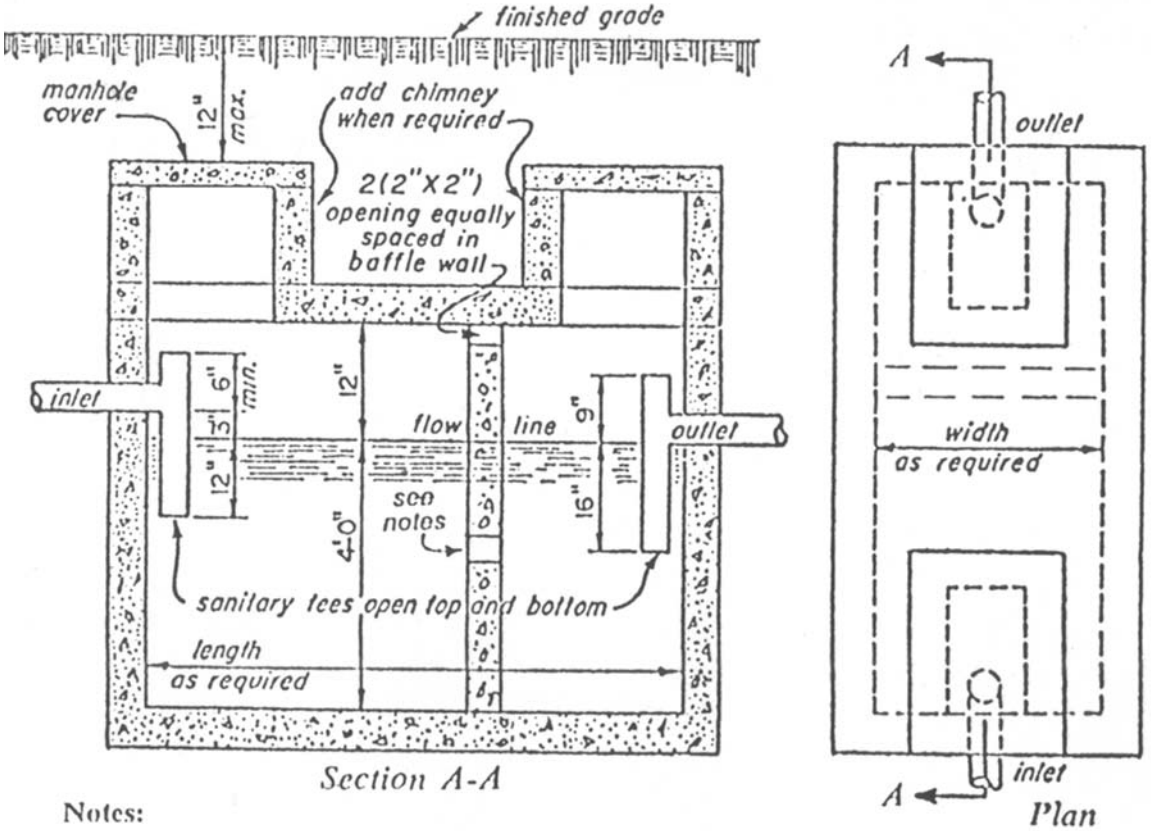
(1) Minimum rated capacity of septic tanks shall be in accordance with Table RS 16-22, and shall be predicated upon the 24-hr. sewage flow under normal conditions, plus an allowance of approximately 20 percent for sludge accumulation.

(2) In a tank of more than one compartment, the inlet compartment shall have a capacity of at least two-thirds of the minimum required tank capacity prescribed in Table RS 16-22.

(d) Design.-The concrete tank shall have a water surface at the flow line that is rectangular in plan with the length at least twice the width but no more than three times the width (Figure 16-12A). For steel tanks use 5 ft. diameter (Figure 16-12B).

**** Figure RS 16-12A Typical Concrete Septic Tank**

****Local Law 85-1973**



Notes:

1. Interior baffle wall required in all tanks over 9 feet in length.
2. Slot 4" wide by 16" long or two 6" diameter holes at 18" centers.

****TABLE RS 16-22 MINIMUM CAPACITY OF SEPTIC TANKS**

Type of Dwelling	Number of Bedrooms	Minimum Capacity of Tank to Flow Line, Including Sludge Accumulation (Gallons)
1 Family …….	2	750
1 Family …….	3	900
1 Family …….	4	1,000
1 Family …….	5	1,250
1 Family …….	6	1,500
2 Family …….	4	1,500
2 Family …….	5	1,750
2 Family …….	6	2,000
2 Family …….	7	2,250
2 Family …….	8	2,500

Note-

If there is an expansion attic: (a) without bathroom add one additional bedroom, (b) add two additional bedrooms, if bathroom is included. Rate: 250 gallons for each additional bedroom.

*****Local Law 85-1973***

P113.8 Distribution Box.-A distribution box shall precede all subsurface disposal fields. The distribution box is the chamber into which the septic effluent discharges and from which the sewage enters the subsurface disposal field lines. The box shall be of concrete or steel. If steel, it shall be 12-gage minimum, bituminous-coated in accordance with Commercial Standard 177 of 1962. Floor area of box should be as small as practical in order to provide a maximum head of sewage for equal distribution to all outlet lines. Top of box shall be at least 9 inches above the invert of the outlet lines. A baffle at the inlet shall be provided to prevent "short circuiting" of flow. The walls of the box shall be high enough so that the cover will be within 12-inches of the finished grade. All outlet inverts shall be set one inch below the inlet invert. Lines from distribution box to disposal field shall be not less than 4 inches inside diameter and shall be laid with tight joints on a uniform slope not less than 1/8 inch per foot.

*****P113.9 Soil Percolation Tests. -**Soil percolation tests shall be performed at the site of a proposed individual on site private sewage disposal system installation to determine the suitability of the soil and site. Such test shall be performed under the supervision of an employee of the department as well as subject to controlled inspection. The result of the percolation tests shall be filed on forms provided by the department, stating the suitability of the site and the capacity of the subsoil for the proposed use.

******Local Law 65-1996***

P113.10 Seepage Units.-(a) Capacity.-The liquid capacity (volume below inlet line) of seepage units shall be at least twice that of the septic tank, as prescribed in Table RS 16-22. In addition, sufficient wall area shall be provided to permit the liquid wastes to leach into the soil without overflowing. Effective absorption area, i.e., the wall area at the outer circumference of the annular stone for any type of dwelling shall be computed in accordance with the Table RS 16-23A or Table RS 16-23B.

**** Figure RS 16-12B Typical Metal Septic Tank**

*****Local Law 85-1973***

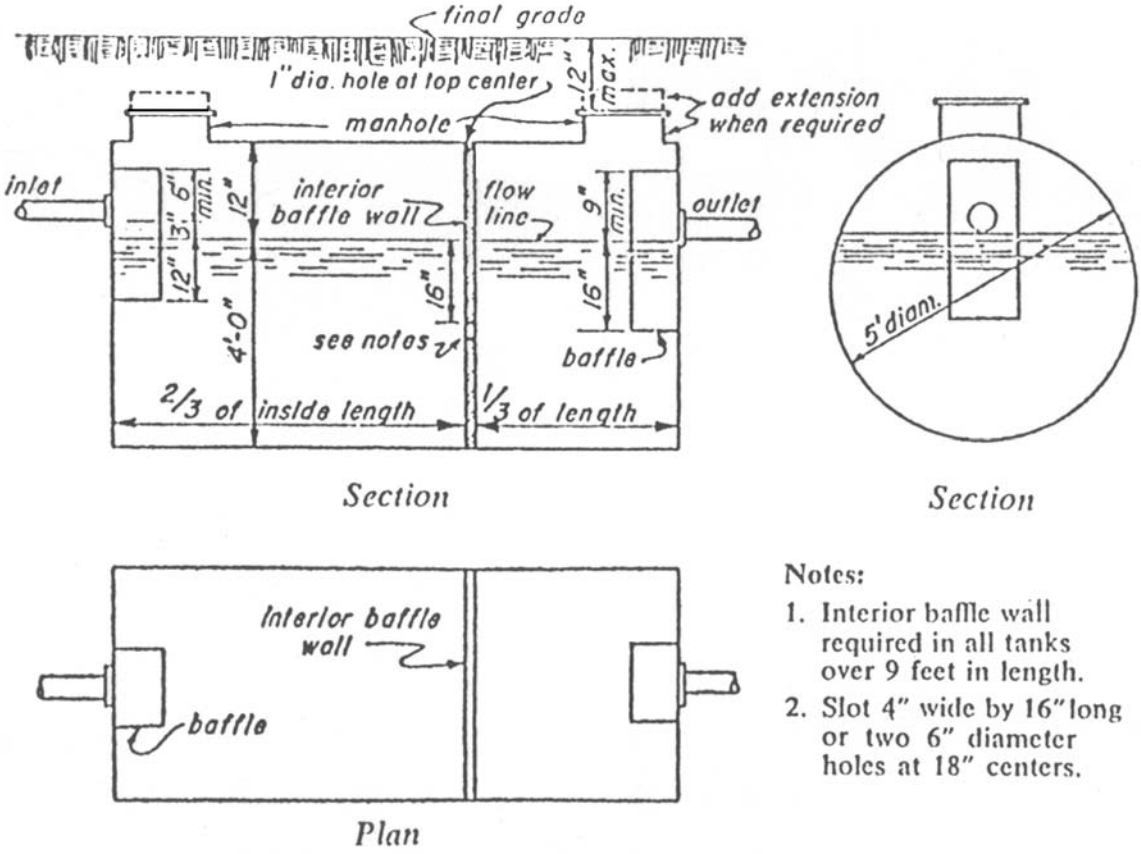


****TABLE RS 16-23A DESIGN DATA FOR ABSORPTIVE CAPACITY OF DISPOSAL FIELD AND SEEPAGE PITS**[a]

Percolation Rate	Effluent Allowance Rate of Seepage Unit in gallons per square foot of effective absorptive area per day	
Percolation Test rate in minutes for water to fall 1 inch	Disposal Field Trenches (bottom of trenches)	Seepage Pits (wall area)
2 or less	3.2	4.3
5	2.4	3.2
10	1.7	2.3
30	0.8	1.1
60 (not recommended)	0.4	0.6
Over 60 (not suitable)	Obtain special approval of the commissioner. (Use special design by an architect or engineer, subject to the approval of the commissioner.)	

[a] For one- or two-family dwellings table RS 16-23B shall be used.

Notes-

Volume of sewage to be disposed of should be equal to the 24 hr. sewage flow.

No portion of the field shall be installed under any pavement or any area where there will be vehicular traffic or parking.

*****Local Law 85-1973***

****TABLE RS 16-23B DESIGN DATA FOR ABSORPTIVE CAPACITY OF DISPOSAL FIELD AND SEEPAGE PITS**

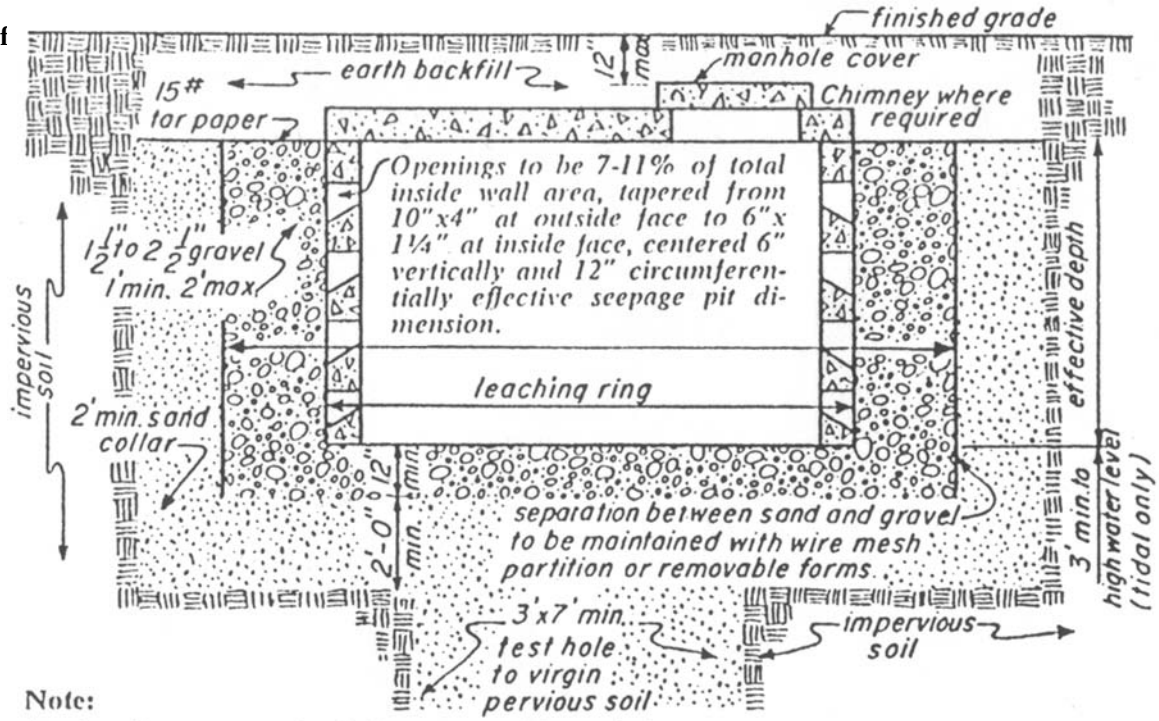
Type of Dwelling	Number of Bedrooms	Minimum Capacity of Field and/or of Pit to Flow Line
1 Family.....	2	750
1 Family.....	3	900
1 Family.....	4	1,000
1 Family.....	5	1,250
1 Family.....	6	1,500
2 Family.....	4	1,500
2 Family.....	5	1,750
2 Family.....	6	2,000
2 Family.....	7	2,250
2 Family.....	8	2,500

Notes-

Add 250 gallons for each additional bedroom. To compute peripheral wall area in sq. ft. for gravel envelope of pits, divide above minimum capacity by 4.3.

To compute area required for disposal field in sq. ft. divide above minimum required capacity by 1.15.

*****Local Law 85-1973***

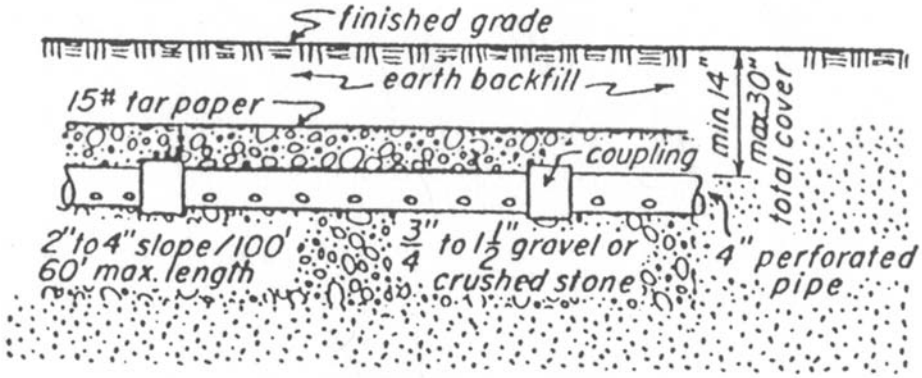


Note:
Sand collar must make full contact with test hole.

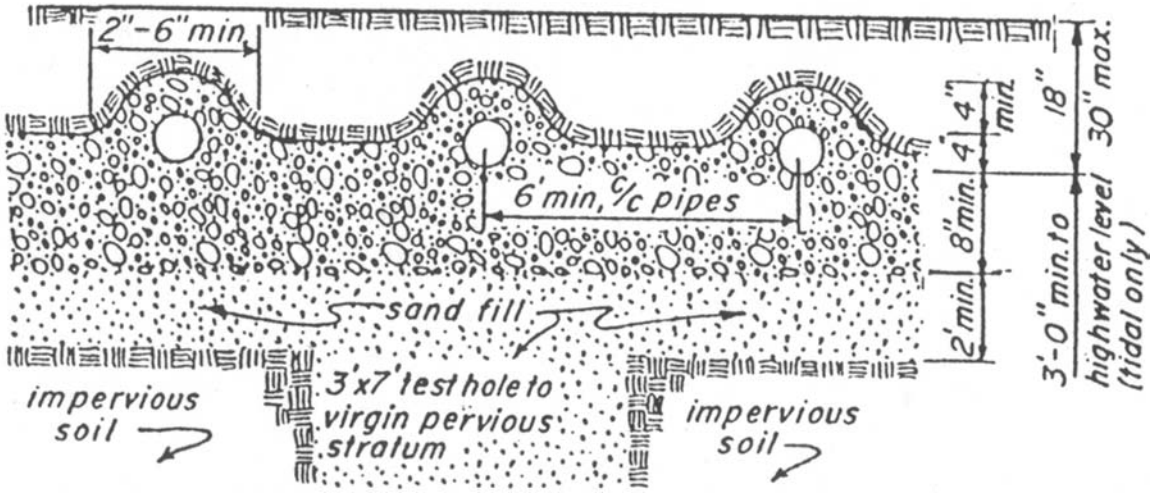
(b) Construction.-The seepage unit shall be structurally sound. The piping from the septic tank to the unit shall have tight joints. The general construction arrangement shall be in accordance with Figure RS 16-13A or RS 16-13B.

**** Figure RS 16-13A Absorption Type System**
****Local Law 85-1973***

**** Figure RS 16-13B Absorption Type**
****Local Law 85-1973***



Disposal Field Details



(c) No disposal system shall extend into the water table thereby causing a direct discharge of effluent into the said ground water table. However, in tidal areas, the base of the seepage units or distribution pipes in a field shall be at least 3 feet above the highest water level encountered in the excavated test pit.

P113.11 Subsurface Disposal Field.-

(a) General.-Each disposal field shall have at least two outlet distribution lines from the distribution box. The field shall be in an open area, at least 20 ft. from the outer surface of any tree trunk. No portion of the field shall be installed under any pavement or any area where there will be vehicular traffic or parking.

(b) Construction.-An absorption-type disposal field, Figure RS 16-13B, may be used in locations wherever an impervious soil stratum overlays a pervious stratum and a seepage unit is not feasible or desired. Septic tank effluent is conducted to a distribution box and thence through the system of perforated pipes for dispersal over the bed of crushed stone or gravel and sand of the required area. This bed of pervious material, overlaying the natural unsatisfactory impervious soil, together with the column of sand (test hole) located within the area of the field, previously prepared and tested, serves as the media through which the septic tank effluent finds its way to the underlying natural pervious soil for eventual subsurface disposal. The allowable 24-hour rate of septic tank effluent application per square foot of field surface shall be at the maximum rate of 1.15 gallons. Lines leading from the distribution box to the head end of the disposal field shall be extra heavy cast iron pipe not less than 4 in. inside diameter, having tight joints. All distribution lines in the disposal field shall be approved perforated pipe at least 4 in. inside diameter. These lines shall have a uniform slope, 2 in. to 4 in. per 100 ft. with a minimum spacing of 6 ft. on centers. All distribution lines shall be of equal length not over 60 ft. long to provide uniform distribution of the effluent and shall have a minimum cover of 14 in. on the pipe. Wherever it may be necessary to construct a large percentage of the field lines with cover in excess of 30 in., other designs using seepage units if possible should be considered.

(c) Filter material.-The lines shall be surrounded by crushed stone or gravel ranging in size from 3/4 in. to 1 1/2 in. from a level at least 8 in. below the bottom of the pipe to a level at least 4 in. above the top of the pipe. The upper surface of the stone shall be covered with a layer of impervious tar paper, minimum weight 15 pounds, before placing the earth backfill, in order to prevent soil from penetrating into the filter material and subsequently into the pipes.

(d) Distance requirements.-Disposal fields shall be installed in accordance with the requirements of Table RS 16-24.

P113.12 Maintenance.-A chart, showing the location of the septic tank and the field system for a building, shall be kept at a suitable location within the building. This chart shall also contain brief inspection and maintenance instructions for the septic tank.

****TABLE RS 16-24 LIMITING DIMENSIONS OF DISPOSAL FIELD COMPONENTS**

Component	Limit
Individual lines, maximum length ……	60 ft.
Individual lines, lengths..……	All of equal length
Field distribution pipe, minimum diameter..…...……	4 in.
Field distribution pipe, maximum slope ……...…….	4 in. per 100 ft. length
Field distribution pipe joints ……..	Tight (no spaces) as required by type of pipe
Trench or bed bottom, minimum depth …….	18 in.
Trench or bed bottom, average depth …….	Not more than 30 in.
Trench or bed bottom, minimum above ground water ...	2 ft.
Trench bottom, minimum width (percolation rate of 2 minutes or less) ……	18 in.
Trench bottom, minimum width (percolation rate of 5 to 10 minutes) ……..…….	24 in.
Trench bottom, maximum width for other more impervious soils ……...	30 in.
Trench or bed, minimum separation between …….	3 times trench width but not less than 6 ft.

*****Local Law 85-1973***

Section P114.0 Hospital and Institutional Plumbing

P114.1 General.-Hospital and institutional plumbing systems shall comply with all applicable plumbing requirements, except as specifically modified in this section.

P114.2 Definitions for Special Hospital Fixtures and Equipment.-

ASPIRATOR.-A fitting or device that is supplied with water or other fluid under positive pressure. The water or other fluid passes through an integral orifice, or constriction, causing a vacuum. Aspirators are often referred to as "suction" apparatus, and are similar in operation to an ejector fitting.

AUTOPSY TABLE.-A fixture or table used for the post-mortem examination of a body. (See Section P107.0 for method of connecting water supply.)

BEDPAN HOPPER (CLINIC SINK).-A fixture used to flush the contents of bedpans and meet the design requirements of Section P114.3(a).

BEDPAN STEAMER.-A fixture used for sanitizing bedpans or urinal bottles by direct application of steam.

BEDPAN WASHER.-A fixture designed to wash bedpans and to flush the contents into the sanitary drainage system. It may also be used for sanitizing bedpans and urinals with steam or hot water.

BEDPAN WASHER DEVICE.-A device used for cleansing bedpans. It is supplied with hot and/or cold water, and is located adjacent to a water closet or clinic sink or installed in the discharge piping of the flush valve.

BEDPAN WASHER VENT.-A local vent that is a vertical pipe to which connections are made from the fixture side of traps and through which vapor and/or foul air may be removed from the bedpan washer.

CLINIC SINK.-See "Bedpan Hopper."

STERILIZER, BOILING TYPE.-A fixture (nonpressure vessel) used for boiling instruments, utensils, and/or other equipment for the purpose of disinfection. Some devices are portable, others are connected to the plumbing system.

STERILIZER, PRESSURE (AUTOCLAVE).-A fixture (pressure vessel) designed to use steam under pressure for sterilizing.

STERILIZER, PRESSURE (INSTRUMENT WASHER-STERILIZER TYPE).-A fixture (pressure vessel) designed to both wash and sterilize instruments during the operating cycle of the fixture.

STERILIZER VENT.-A separate pipe or stack, indirectly connected to the building drainage system at the lower terminal. The pipe or stack receives the vapors from nonpressure sterilizers or the exhaust vapors from pressure sterilizers and conducts the vapors directly to the outer air. (Sometimes called a vapor, a steam, an atmosphere or an exhaust vent.)

STERILIZER, WATER.-A fixture (pressure vessel) designed for sterilizing water and storing this sterile water.

STILL.-A device used for distilling liquids.

P114.3 Requirements for Special Hospital Fixtures and Equipment.-Bedpan hoppers (clinic sinks), bedpan washers, and similar fixtures and equipment shall be provided for disposal of bedpan contents and cleansing and disinfecting bedpans. All such fixtures and equipment shall be subject to the following requirements:

(a) Bedpan hoppers (clinic sinks).-Such fixtures shall have an integral trap in which the upper portion of a visible trap seal provides a water surface. The fixture shall be designed so as to permit complete removal of the contents by siphonic and/or blow-out action, and to reseal the trap in a single flushing operation. A flushing rim shall provide water to cleanse the interior surface. The fixtures shall have flushing and cleansing characteristics similar to a water closet.

(b) Prohibited use of clinic sinks and service sinks.- A clinic sink shall not be used as a janitor's service sink. A janitors service sink shall not be used for the disposal of urine, fecal matter, or other human wastes.

(c) Special requirement for ice manufacture and storage.-No machines for manufacturing ice, or any device for handling or storing ice, shall be located in a room containing a bedpan hopper, clinic sink, bedpan washer, or similar fixture. Machines for manufacturing ice, or devices for handling or storing ice intended for either human consumption or packs, shall be located in a clean utility room, a floor pantry, a diet kitchen, or in other similar locations.

(d) Sterilizers.-

(1) DESCALING PROHIBITED.-The interior of water sterilizers, stills, or similar equipment shall not be descaled or otherwise treated by acid or other chemical solutions while the equipment is connected to the water and/or drainage system.

(2) STANDARD.-New pressure sterilizers and pressure type instrument washer-sterilizers hereafter installed shall conform to ASME boiler and pressure vessel code, 1962, section VIII and shall bear a data plate clearly visible at all times indicating conformity to such standards.

(3) STERILIZER PIPING.-All sterilizer piping and/or devices necessary for the operation of sterilizers shall be accessible for inspection and maintenance.

a. Steam supply.-Steam supplies to sterilizers, including those connected by pipes from overhead mains or branches, shall be drained to prevent any excess moisture from reaching the sterilizer. The condensate drainage from the steam supply shall be discharged by gravity.

b. Condenser.-Pressure sterilizers shall be equipped with a means for condensing exhaust steam vapors.

c. Gas fired equipment.-Gas fired equipment or apparatus requiring either water or drainage connections, or both, shall comply with the requirements of this reference standard and the applicable provisions of the building code.

P114.4 Plumbing in Mental Hospitals.-Special consideration shall be given to the design and installation of plumbing fixtures in mental hospitals. No

pipes or traps shall be exposed and all fixtures shall be securely bolted through walls.

P114.5 Number of Plumbing Fixtures.-The minimum number of fixtures for hospital and institutional occupancy shall be in accordance with Table RS 16-25, Fixtures for Hospitals and Institutions.

P114.6 Drainage and Venting.-

(a) Ice storage chest drains.-Each drain serving an ice chest or box shall discharge into an indirect waste receptor. Each drain shall discharge through an air break above the receptor. The end of the drain shall be covered with a removable screen of not* at least 10 mesh per in. or with a flap valve.

(b) Bedpan washers and clinic sinks.-Bedpan washers and clinic sinks shall be connected to the sanitary drainage system and vented in accordance with the requirements for water closets, except that bedpan washers with vapor vent connections shall require additional vapor vents.

As enacted but probably "net" is intended.

P114.7 Sterilizer Wastes.-

(a) Indirect wastes required.-Each sterilizer shall be provided with an individual and separate indirect waste, and with an air break having a diameter at least twice that of the waste tailpiece. The upper rim of the receptor, funnel, or basket type fitting shall be at least 2 in. below the vessel or the piping, whichever is lower. Except as provided in (b) below, a "P" trap shall be installed on the discharge side of, and immediately below, the waste connection serving each sterilizer.

(b) Floor drain required.-In all rooms containing the recessed or concealed portions of sterilizers, the entire floor area shall be drained and at least one floor drain shall be installed. The floor drain waste and trap shall have a minimum diameter of 3 in. It shall receive the drainage from at least one sterilizer to assure maintenance of the floor drain trap seal. No individual sterilizer waste trap shall be required on this type of installation.

TABLE RS 16-25 MINIMUM NUMBER OF FIXTURES FOR HOSPITALS AND INSTITUTIONS

Type of Building Occupancy	Type of Fixtures					
	Water Closets	Urinals	Lavatories	Bathtubs or Showers	Drinking Fountains	Other Fixtures
Institutional—other than hospitals or penal institutions (on each occupied story)	1 for ea. 25 men 1 for ea. 20 women	1 for each 50 men	1 for each 20 persons	1 for each 10 persons	1 for each 50 persons	
	In accordance with the hospital code of the city of New York					
Hospitals – general See table RS 16-5						
Hospital – employees See Public Facilities						
Institutional – prisoners	1 in each cell		1 in each cell	1 in each cell	1 on each cell block floor	1 slop sink per floor
	1 in each exercise room	1 in each exercise room	1 in each exercise room		1 in each exercise area	
Institutional – employees and public Facilities – See Table RS 16-5						
Nursing homes – in accordance with the nursing home code of the city of New York.						

(c) Bedpan steamers, additional trap required.-A trap with a minimum seal of 3 in. shall be provided in a bedpan steam drain located between the fixture and the indirect waste connection.

(d) Pressure Sterilizer.-Except when an exhaust condenser is used, a pressure sterilizer chamber drain may be connected to the exhaust drip tube before terminating at the indirect waste connection. If a vapor trap is used, it shall be designed and installed to prevent moisture being aspirated into the sterilizer chamber. The jacket steam condensate return, if not connected to a gravity steam condensate return, shall be separately and indirectly wasted. If necessary to cool a high temperature discharge, a cooling receiver, trapped on its discharge side, may serve as the fixture trap.

(e) Exhaust condensers.-Drain from exhaust condensers shall be installed with an indirect waste as prescribed in this code. If such condensers are used on pressure sterilizers, the chamber drain shall have a separate indirect waste connection.

(f) Water sterilizer.-All water sterilizer drains, including tank, valve, condenser, filter and cooling, shall be installed with indirect waste.

(g) Pressure type instrument washer-sterilizer.-The

pressure type instrument washer-sterilizer chamber drain and overflow may be interconnected. They may also be interconnected with the condenser. The indirect waste shall comply with the provisions of this reference standard.

P114.8 Vapor Vents.-

(a) Vent material.-Material for sterilizer, vapor, and exhaust vents shall be as required by Section P102.4.

(b) Vent connections prohibited.-Connections between vapor vents serving bedpan washers, sterilizing apparatus, and/or normal sanitary systems, are prohibited. Only one type of apparatus shall be served by a given type vent.

(c) Bedpan Vents and stacks.-

(1) BEDPAN WASHERS.-Bedpan washers shall be vented to the outer atmosphere above the roof by means of bedpan vents. The vent for a bedpan washer shall be at least a 2 in. diameter pipe. A bedpan vent serving a single bedpan washer may drain to the fixture served.

(2) MULTIPLE INSTALLATIONS.-Where bedpan washers are located above each other on more than one floor, a bedpan vent stack may be installed to receive the bedpan vent on the various floors. The connections between a bedpan washer vent and a bedpan vent stack shall be made by using tee or tee-type sanitary pattern drainage fittings, installed in an upright position. See Table RS 16-26 for vent sizing.

(3) TRAP REQUIRED.-The bottom of the bedpan vent stack, except when serving only one bedpan washer, shall be drained by means of a trapped connection discharging indirectly into the plumbing sanitary drainage system. The trap and waste shall be at least 2 in. in size.

(4) TRAP SEAL MAINTENANCE.-A water supply of at least 1/4 in. tubing shall be taken from the flush supply of each bedpan washer on the discharge or fixture side of the vacuum breaker, trapped to form at least a 3 in. seal, and connected to the local vent on each floor. The water supply shall be so installed as to provide a supply of water to the local vent stack for cleansing and drain trap seal maintenance each time a bedpan washer is flushed.

TABLE RS 16-26
STACK SIZES FOR BEDPAN STEAMERS AND BOILING TYPE STERILIZERS AND NUMBER OF CONNECTIONS PERMITTED

	No. of Connections Permitted Connection Size (in.)		
Stack Size (in.)	1 1/2		2
1 1/2	1	or	0
2	2	or	1
2	1	and	1
3	4	or	2
3	2	and	2
4	8	or	4
4	4	and	4

(d) Pressure sterilizer vent and stacks.-

(1) CONNECTIONS.-In multiple installations of pressure and nonpressure sterilizers, vent connections to the sterilizer (vapor) vent stack shall be made by means of inverted type fittings.

(2) DRAINAGE.-The connection between sterilizer vent and/or exhaust openings and the sterilizer vent stack shall be designed and installed to drain to the funnel or basket-type waste fitting. In multiple installations, the sterilizer vent stack shall be drained separately to the lowest sterilizer funnel or basket-type waste fitting or receptor.

P114.9 Sizing of Sterilizer Vent Stack.-

(a) Bedpan steamers.-The minimum diameter of a sterilizer vent serving a bedpan steamer shall be 1 1/2 in. Multiple installations shall be sized according to Table RS 16-26.

(b) Boiler type sterilizer.-The minimum diameter of a sterilizer vent stack shall be 2 in. when serving a utensil sterilizer, and 1 1/2 in. when serving an instrument sterilizer. Combinations of boiling type sterilizer vent connections shall be based on Table RS 16-26.

(c) Pressure sterilizers.-The minimum diameter of sterilizer vent stacks or the vertical stack vent from a single unit shall be 2 in. minimum. Stacks serving combinations of pressure sterilizer exhaust connections shall be sized according to Table RS 16-27.

(d) Pressure type instrument washer-sterilizer.-The minimum diameter of a sterilizer vent stack serving an instrument washer-sterilizer shall be 2 in.

(e) Roof penetration.-Vent shall be increased in size and extended through the roof in accordance with sanitary venting requirements.

P114.10 Water Supply.-

(a) Services.-All hospitals shall be provided with at least two water service connections. Whenever more

than one street main is available, the connections shall be made to different street mains.

(b) Water supply protection.-The installation of the water supply shall meet all the requirements prescribed in Section P107.0, except as hereinafter provided. (See Table RS 16-28.)

(c) Hot water supply protection.-Hot water supply to patients' showers, therapeutic equipment, and continuous baths shall be provided with control valves automatically regulating the temperature of the water supply to the fixture. The valve shall fail in a closed position when the tempered water supply to the fixture exceeds 110 degrees F.

TABLE RS 16-27 STACK SIZES FOR PRESSURE STERILIZERS AND NUMBER OF CONNECTIONS PERMITTED

Stack Size (in.)	No. of Connections Permitted — Connection Size (in.) 3/4		1		1 1/4		1 1/2
1 1/2	3	or	2	or	1		
1 1/2	2	and	1				
2	6	or	3	or	2	or	1
2	3	and	2				
2	2	and	1	and	1		
2	1	and	1	and			1
3	15	or	1	or	5	or	3
3			1	and	2	and	2
3	1	and	5	and			1

TABLE RS 16-28 FIXTURE WATER SUPPLY PROTECTION[a]

Fixtures	Type of Protection	Remarks
Aspirators	Separate water system	_____
Bedpan		
Washers	Vacuum breaker	
Washer Hose	Vacuum breaker	Locate 5 ft. above floor
Boiler type sterilizer	Air gap	Not less than twice the effective opening of the water supply
Exhaust condenser	Vacuum breaker	_____
Pressure type instrument washer-sterilizer	Vacuum breaker	_____
Pressure type sterilizer	Vacuum breaker	_____

Note-

[a] Where vacuum breakers are used, they shall be installed after the last control valve. See section P107.2 for requirements for other fixtures.

P114.11 Vacuum systems.-

(a) Aspirators, water.-The use of water aspirators is prohibited.

(b) Bottle systems.-Vacuum systems intended for collecting, removing and/or disposing of blood, pus, and/or other fluids shall be protected by bottles (furnished as secondary equipment) installed near the outlet. Each vacuum outlet station shall be equipped so as to prevent fluids other than air from entering the vacuum piping systems.

(c) Central system equipment.-The collecting and/or control tanks in central systems shall be provided with drains for cleaning the tanks. The exhausts from vacuum pumps used in connection with a vacuum system shall discharge separately to the outdoor air above the roof or at such other locations as may be permitted by the Commissioner. The exhaust discharge shall, in no case, be located so as to cause a hazard to public safety, health or welfare.

***P114.12 Oxygen and Nitrous Oxide Systems.-**Where oxygen and nitrous oxide systems are installed, the piping, outlets, manifolds, manifold rooms, and storage rooms shall be installed in accordance with the requirements of ANSI/NFiPA 99-1987 Standard for Health Care Facilities, as modified and ANSI/NFiPA 50-1985 Bulk Oxygen Systems at Consumer Sites. The alarms for the systems shall comply with Reference Standard RS 17-3 and the requirements of the fire department.

ANSI/NFiPA 99-1987 shall be subject to the following modifications:

Section 4-3.1.4 Amend the initial sentence to read as follows:

The central supply system shall be a system of cylinders and necessary supply equipment assemblied as described

in either 4-3.1.5 or 4-3.1.6, or a bulk supply system (4-3.1.7) which shall be of the permanently installed type.
Section 4-3.1.10 Add paragraph (b) to read as follows:
(b) The emergency oxygen supply connection shall not be used unless prior Fire Department approval and permits are obtained to store and use the emergency oxygen supply.
Section 4-3.2.2 Amend this section to read as follows:
4.3.2.2 Supply system and storage locations shall comply with 4-3.1.1.2; 4-3.1.1.3; 4-3.1.2.1(a); 4-3.1.2.1(c); 4-3.1.2.1(e); 4-3.1.2.1(g); 4-3.1.2.1(h); 4-3.1.2.1(i); 4-3.1.2.1(j); 4-3.1.2.1(k); 4-3.1.2.1(l); 4-3.1.2.2; 4-3.1.2.3; 4-3.1.3; 4-3.1.5.2; 4-3.1.8.2.
Section 4-4.1.2.1 Add paragraph (j) to read as follows:
(j) The gas content of medical gas piping systems shall be readily identifiable by appropriate labeling with the name of the gas contained. Such labeling shall be by means of metal tags, stenciling, stamping, or with adhesive markers, in a manner that is not readily removable. Labeling shall appear on the piping at intervals of not more than 20 feet and at least once in each room and each story traversed by the piping system. Where supplementary color identification of piping is used, it shall be in accordance with the gases and colors indicated in Compressed Gas Association Pamphlet C-9, Standard Color-Marking of Compressed Gas Cylinders Intended for Medical use in the United States. (1973).
Section 4-4.1.2.3 Add paragraph (g) to read as follows:
(g) Threaded connections using other than taper pipe threads, shall be prevented from loosening through the use of an anaerobic compound or any other method conforming with good engineering practice for such purpose.
Local Law 12-1982; 1025-88 BCR

****Section P115.0 Gas Piping**
*****Local Law 30-1982***
*****P115.1 General Requirements For Gas Piping.-** The gas piping system, system testing and appliance installation shall be as required by this section, section C26-1606.1 and section C26-1606.4 (d).
******Local Law 54-1970***

****P115.2 Gas Service Piping Connections.-**
(a) Gas service piping shall be fitted with a gas service line valve, the valve located on the supply side of the meter and service regulator, if a service regulator is required. If a plug type valve is used, it shall be constructed so as to prevent the core from being blown out by the pressure of the gas. In addition, it shall be of a type capable of being locked in the off position by the local gas utility. When the gas service line valve is inside the building, it shall be in an accessible location within 2 ft. of the point where the gas service connection enters the building or at such other location as may be permitted by the commissioner. Where the gas service connection is installed through a building wall below ground, it shall be protected with a wall sleeve extending at least 4 in. beyond the outer side of the wall and at least 1 in. beyond the inner side of the wall. The sleeve shall be sealed at both ends to prevent the entry of water and gas. Gas service connections, installed through ground slab construction, shall be protected with a floor sleeve sealed at both ends to prevent the entry of water and gas. The sleeve shall extend at least 4 in. above the floor, and shall be installed as specified by the utility company providing the service. It shall terminate at least 4 in. outside the building.
(b) In all high pressure areas, the utility company providing the service may inspect the gas service line valve and regulator in accordance with the code requirements of the state of New York as set forth in 16 NYCRR, Part 255, in addition to the department of buildings in accordance with sections C26-1606.1 and C26-1606.4 (d).
(c) No gas service shall enter a structure at a horizontal distance of less than 10 ft. from the cellar termination of a stairway, nor shall any gas meters or gas regulators be located less than 10 ft. from such stairway termination. Where such services, meters and regulators are separated from the stairway termination by a permanent partition or wall having a fire-resistance rating of at least 1 hr. the foregoing shall not apply. Unless forbidden by other provisions of this code, locations under a stairway are exempt from this requirement.
(d) When the structure is erected on fill or on piles, provision shall be made to preclude possible damage to the gas service piping caused by settlement.
*****Local Law 30-1982***

****P115.3 Gas Distribution Pressures.-**No gas distribution piping containing gas at a pressure in excess of 1/2 psig shall be run within a building, except that pressure not exceeding three psig is permitted for the following uses: (a) commercial use, (b) industrial use; (c) other large volume use in which fuel requirements for boiler room equipment exceed 4000 cubic feet per hour and such large volume use is supplied through separate gas distribution piping to the boiler room. Gas pressure not exceeding 15 psig is permitted for boiler room equipment in excess of 100,000 cubic feet per hour provided the gas distribution piping is installed as provided for in P115.8. The use of pressure in excess of 15 psig shall be permitted for distribution piping provided all of the requirements of P115.8(n) are met.
*****Local Law 30-1982***

****P115.4-Gas Regulator And Gas Regulator Vent Outlets.-**Gas meter piping supplying gas to a building at a pressure in excess of 1/2 psig shall be provided with a regulator that will reduce the pressure of the gas to 1/2 psig or less prior to entering the gas distribution

piping in the building, except where the use of higher pressure is permitted. Where gas distribution pressure in excess of 1/2 psig is permitted, it shall be regulated not to exceed the maximum pressure level as permitted by the code or commissioner.

(a) Inside gas meter piping operating at a pressure in excess of 15 psig shall comply with the following:

(1) Where such piping is greater than 4-in. in diameter, the meter piping shall be installed in a properly ventilated meter room of 3 hour fire rated construction.

(2) The maximum distance from the service line valve to the regulator shall be limited as follows:

Service Line Valve Size	Maximum Distance (Linear Feet of Pipe)
up through 2" pipe size	4 feet
over 2" through 4" pipe size	8 feet
over 4" through 8" pipe size	15 feet
10" pipe size and larger	20 feet

(3) Where these maximum distances cannot be met, the following shall be required:

Footage (Linear Feet of Pipe) in Excess of Above Requirements	Additional Requirements
up to 5 ft.	The meter room shall have 3 hour fire rating construction and adequate ventilation
over 5 ft. through 10 ft	Above requirements plus a combustible gas-detection alarm system
over 10 ft. through 15 ft	Above requirements plus controlled inspection by the customer or his representative as specified in section C26-106.3
over 15 ft. through 20 ft	Above requirements plus explosion venting per NFiPA Std. No. 68-1978; or alternative ventilation acceptable to the commissioner and automatic gas shutoff devices
over 20 ft.	Above requirements plus suitable fire protection approved by the commissioner

For new gas installations made in existing structures, the above requirements shall be used to the extent feasible. Alternate designs may be considered by the commissioner.

(b) When located inside the building, each regulator shall be provided with a vent pipe that leads directly to the outdoor air. The vent pipe shall be sized according to local utility requirements. The vent outlet shall not be located under a window or any opening leading back into the premises or located below any overhang or projection. No gas regulator vent outlet shall be covered over, plugged up, or otherwise obstructed, and all gas vents shall be identified by suitable marking on the outlet on the outside of the building.

Gas appliance pressure regulators requiring access to the atmosphere for successful operation shall be equipped with vent leading to the outdoors, unless constructed or equipped with a vent limiting means to limit the escape of gas from the vent opening in the event of diaphragm failure.

*****Local Law 30-1982***

****P115.5 Outside Gas Cut-off.-**

*(a) An outside gas service line valve or other outside emergency shut-off device or method acceptable to the commissioner and fire commissioner shall be installed in every gas service pipe outside the building. If buried, such valve, device or method shall be readily accessible from grade. Every existing service which is being replaced or refurbished shall be provided with such valve, device or method, but in any event, all existing gas services shall be provided with such valve, device or method by January 1, 2020 provided however, all occupancy groups other than J-3 shall be required to be completed by January 1, 2010. The minimum annual rate of installing such valve, device, or method shall be determined by the applicable utility; however, it shall be chosen to ensure timely completion of the program by the date specified herein. The applicable utility shall provide the Fire Department with suitable tools for operation of such emergency shut-off valves, devices or methods. The number of such tools required for

supplying fire department units shall be determined by the fire department. On or before January 31, of each year, the applicable utility shall report to the Department of Buildings and the Fire Department the actual number of emergency shut-off valves installed for the preceding year.
(b) If the outside gas service line valve, emergency shut-off device or method is located below ground, it shall be installed in a protective housing, and a cover, easily identifiable shall be provided for the housing. The cover shall be flush with the surface of the ground and kept clear at all times so as to be accessible for immediate use.
(c) The valve or emergency shut-off device shall be capable of being readily operated by removing the cover of the housing and inserting a portable key or other device over the operating end of the valve or emergency shut-off device.
(d) If the outside gas service line valve is located above ground, it shall be suitably protected to prevent accidental vehicular impact and must be installed in accordance with the code requirements of the state of New York as set forth in 16 NYCRR Part 255.
***Local Law 30-1982*
**Local Law 89-1995*

P115.6 Gas Meter Location.-
(a) When located inside the building, meters shall be located as near as practicable to the point of entrance of the service and, where possible, the meters shall be located in the cellar or basement unless otherwise permitted by the commissioner. The meter location shall be clean, dry, and free of refuse, steam or chemical fumes. Meters shall be adequately protected against extreme cold or heat and shall be readily accessible for reading and inspection. The area in which the meter is located shall be properly ventilated. Notwithstanding the foregoing, outside meter installation shall be permitted in areas where the utility company certifies that dry gas is being distributed.
(b) In a multiple dwelling, no gas meter, other than the replacement of an existing meter shall be located in any boiler room or other room or space containing a heating boiler, in any stair hall, nor in any public hall above the cellar or above the lowest story if there is no cellar. However, in any multiple dwelling where there is an existing gas meter located in any boiler room or other room or space containing a heating boiler, one additional gas meter may be installed in such room or space, provided such additional gas meter is installed adjacent to the existing gas meter and is used in conjunction with the supply of gas for a gas-fired heating boiler or a gas-fired water heater used as a central source of supply of heat or hot water for the tenants residing in such multiple dwelling. Such additional gas meter may be installed only upon the condition that space heaters or hot water appliances in the dwelling units are eliminated.
(c) Gas meter rooms, when provided, shall at all times be kept clear of all rubbish; and shall not be used in any way for storage purposes, including material or equipment of any kind. A legible sign reading "Gas meter room-No storage permitted" shall be permanently and conspicuously posted on the exterior of the meter room door, except that the sign may be posted on the interior of the meter room door in buildings classified in occupancy group J-3. The lettering of such signs shall be of bold type at least one inch in height and shall be properly spaced to provide good legibility. The lettering and background shall be of contrasting colors. Where gas meters and related equipment are not located in a separate room but are located in an open floor area, no combustible material shall be stored or kept within five feet of such equipment; nor shall the gas meter be within three feet of any heating boiler or sources of ignition and, except for buildings in occupancy group J-3, there shall be a physical barrier required if the room is also used for storage purposes or the like.

P115.7 Gas Piping Materials And Fittings.-
(a) Piping materials and piping joints.-All materials used in gas distribution piping systems operating at 1/2 psig or less shall be in accordance with department of buildings' requirements and ANSI Z223.1-1974, National Fuel Code, except for the following modifications:
(1) Screwed fittings shall not be used for pipe size above 4 inches in diameter (see section P115.8(e) for distribution piping pressures over 1/2 psig).
(2) Delete paragraph 1.2.6.1(c) of this standard and substitute: "Plastic pipe, tubing and fittings shall not be used for gas distribution or meter piping."
(b) All materials used in gas distribution piping systems having a gas pressure above 1/2 psig shall conform to ANSI B31.2-1968, Fuel Gas Piping, and department of buildings requirements.
(c) All materials used in gas service and meter piping systems shall be in accordance with the requirements as specified by the utility corporation providing the service; and of the department of buildings.
(d) The permissible stress for gas piping shall be limited to not more than 20% of the yield strength of the piping, including all primary and secondary loads.
(e) Plastic pipe shall be limited to polyolefins and shall conform to ASTM D2513-1976, Thermoplastic Gas Pressure Pipe, Tubing and Fittings.
(f) The definition of plastic (noun) is a material which contains as an essential ingredient an organic substance of large molecular weight, is solid in its finished state and, at some stage of its manufacture or processing can be shaped by flow. Thermoplastic is defined as a plastic which is capable of being repeatedly softened by increase of temperature and hardened by decrease of temperature.

P115.8 Installation Of Gas Piping.-

(a) The installation of gas service piping shall be made in accordance with the requirements of the utility corporation providing the service as regulated by Part 255, of Title 16, of the Official Compilation of Codes, Rules and Regulations of the State of New York. Further, such installation shall meet the requirements of the department of buildings.

(b) Gas service piping outside a structure shall be installed not less than 24 inches below grade, except that a lesser distance of not less than 18 inches may be permitted, provided the piping is adequately protected in accordance with the requirements of this code and the utility corporation supplying service, and the piping is not located below a driveway. Any piping that is exposed to outdoor temperatures or installed underground with a cover of less than 2 feet shall be protected against frost, except that frost protection may be omitted in areas where the utility company certifies that dry gas is being distributed.

(c) The installation of gas meter piping shall be made in accordance with the requirements of this code and the local utility company. Piping containing gas with a pressure exceeding 1/2 psig and the gas service pressure regulator which may be subjected to accidental vehicular impact shall be suitably protected.

(d) Welders installing gas piping within buildings at any pressure shall be qualified for all pipe sizes, wall thicknesses and all positions in accordance with either API 1104-1977, 14th edition, or ASME Section IX Boiler and Pressure Vessel Code, 1980 and requalified on an annual basis. The qualification testing shall be performed by an agency listed with the department of buildings, and the inspector shall have a minimum radiography qualification of Level II in accordance with the American Society of Non-Destructive Testing Recommended Practice Document No. SNT-TC-1A, Supplement A. Copies of the certified welder qualification reports shall be maintained by the responsible welding contractor and shall be made available to the department of buildings upon request.

(e) All welded gas distribution and meter piping main and branch supplies to customer equipment operating in excess of 3 psig inside buildings shall be butt welded; and shall be subject to controlled inspection, as set forth in section C26-106.3.

(f) Radiography shall be performed on all butt welds in gas meter and gas distribution piping operating at pressures exceeding 3 psig, within buildings, in accordance with API 1104-1977 or ASME Section IX Boiler and Pressure Vessel Code 1980.

(g) All requirements for installation of gas distribution piping with pressures of 1/2 psig or less shall be in accordance with P115.7 and Z223.1-1974 Part I, National Fuel Gas Code, subject to the following modifications. Section numbers referred to are those in that standard.

1.2.10.14 Add the following to this section:

(h) Branches shall be taken off the riser with not less than a two elbow swing:

1.2.10.15 Electrical bonding and grounding.-Delete this section and replace it with the following:

The gas piping system shall not be used for an electrical ground.

(i) Where piping supplies equipment for incidental outside use, the minimum ground cover shall be 18 inches. Where compliance with this requirement would be unusually difficult, a lesser distance may be permitted provided the piping is adequately protected in accordance with the requirements of this code and the department of buildings. In all cases where piping is installed in concrete, screwed fittings shall not be used, and the piping shall be coated to prevent corrosion, and in all cases where corrosive conditions exist, the pipe shall be adequately protected against corrosion.

(j) Concealed piping as defined in sections 1.2.8 and 2.4.8 of Z223.1-1974 shall not include piping installed in pipe shafts. Where piping is installed in a shaft, the shaft shall have a fire protective rating as prescribed in the requirements for fire protection construction of the building code.

(k) All requirements for installation of gas distribution piping with pressure above 1/2 psig shall be in accordance with Z223.1 Part II National Fuel Gas Code. Gas distribution piping operating at a pressure of over 1/2 psig to 3 psig and of a size 4 inches or larger shall be welded. All gas distribution piping operating at a pressure above 3 psig shall be welded. All welding of gas distribution piping shall be subject to controlled inspection as set forth in section C26-103.3.

(l) When the structure is erected on fill or on piles, provisions shall be made to preclude possible damage to the gas distribution piping caused by settlement.

(m) Gas distribution piping operating at pressures above 1/2 psig shall be marked to identify the maximum pressure levels within the piping. All valves shall be suitably tagged to indicate the operating pressure level within the distribution piping. In no case shall there be any inter-connections between distribution piping at different pressure levels. Piping at different pressure levels in the same space shall be color coded.

(n) Gas distribution piping operating at pressure levels above 10 psig shall be located within spaces having a 3 hour fire rating for walls and partitions and a 2 hour fire rating for floors and ceiling. Areas containing gas distribution piping operating at pressure levels above 15 psig shall require and/or comply with all of the following:

(1) A 3 hour fire rating.

(2) A suitable fire protection system as approved by the commissioner.

(3) A combustible gas detection alarm system.

(4) Controlled inspection of the piping system as set forth in C26-106.3.

(5) Gas pipe shafts shall not be located in stairways, shall be sealed to prevent any gas leakage from the shaft, shall conform to high hazard requirements, and shall be vented to the open air at the top.
(6) Compressors and/or turbines using gas at 15 psig or over shall be located in rooms provided with explosion venting in accordance with NFPA Std. No. 68-1978 and compressor, turbine, meter and boiler rooms shall be provided with adequate mechanical and fixed ventilation.
(7) The gas meter room shall be gas tight, shall be entered from the outside only, and shall be vented to the outer air only.
(8) Electrical equipment in meter, compressor and turbine rooms shall conform to the Electrical Code of the City of New York for Class 1 Division 1 occupancies.
(9) Any gas tank used shall conform to section C19-91.0(c) and (d), and compressing of gas shall be under the supervision of a person holding a certificate of fitness in accordance with section C19-91.0(b).
(10) Piping at different pressure levels in the same space shall be color coded.
(11) The concurrence of the fire commissioner shall be obtained for all such high pressure gas installations, operating at 15 psig or over.
(o) Plastic service piping, either insert or direct burial, conforming with section P115.7(c) may be installed subject to the following restrictions:
(1) Wherever plastic insert piping is used, the existing service piping shall act as a mechanical protection between the plastic piping and the surrounding environment. The remaining gas service pipe shall be prepared to the extent necessary to remove any sharp edges, projections, or abrasive material which could damage the plastic during and after insertion. Plastic pipe or tubing shall be inserted into the casing pipe in such a manner as to protect the plastic during the installation. The leading end of the plastic shall be closed before insertion. Care shall be taken to prevent piping from bearing on the end of the casing.
(2) Persons engaged in the installation of the plastic piping shall be formally trained, qualified, and certified by the serving utility company.
*(3) Plastic piping shall not extend more than 3 inches beyond the inner face of the building wall, and shall not be exposed inside the building. Plastic piping may extend into the building a maximum of one foot horizontally and four feet vertically immediately adjacent to the inner face of the building wall when encased in a metallic sleeve and constructed and vented so that uncontrolled gas cannot escape from the metallic sleeve inside the building.
Local Law 38-1989
(4) Joints shall be either mechanical or heat fusion joints, only. Each plastic pipe fusion joint must be made in accordance with written procedures that have been proven by destructive burst test to produce joints at least as strong as the pipe being joined.
a. When plastic pipe, tubing, or fittings of different material specifications are joined together by heat fusion, a thorough investigation shall be made to determine that the materials are compatible for joining purposes. The joining method used must be compatible with the materials being joined. The recommendations of the manufacturer shall be considered when determining the method to be used.
b. Mechanical joints. When compression type mechanical joints are used, the gasket material in the coupling must be compatible with the plastic. An internal tubular rigid stiffener shall be used in conjunction with the coupling. The tubular stiffener shall reinforce the end of the pipe or tubing and shall extend at least to the outside end of the compression fitting when installed. The stiffener shall be free of rough or sharp edges and shall not be a force fit in the plastic. A split tubular stiffener shall not be used.
(5) Changes in direction with plastic piping may be made with bends, elbows and tees. Bends shall be free of buckles, cracks, or other evidence of damage. No miter joints are permitted. The pipe may be bent or deflected provided the radius shall not be less than the minimum recommended by the manufacturer.
(6) The minimum allowable wall thickness for plastic pipe shall be 0.090 inches.
(7) Plastic pipe shall be laid, and continuously supported, on undisturbed or well-compacted soil to minimize shear stresses. Backfill material for at least 4 inches over the plastic pipe shall be free from large rocks or sharp objects. The trench shall be backfilled to a height of 12 inches above the pipe in 6-inch lifts which shall be hand compacted. The remaining trench shall be backfilled in 12-inch lifts.
(8) Slack for thermal expansion and contraction or for external loading on direct-buried plastic services shall be provided by snaking the pipe from one side of the trench to the other. Where plastic piping is inserted for a distance of 50 feet or more allowances shall be made at the end connections to prevent pull out caused by thermal or by external loading.
(9) External sleeves shall be used on plastic service lines at main connections to minimize shear stresses.
*(10) Plastic pipe shall not be installed in areas where it may be exposed to temperatures below-20^{o} F or above 140^{o}F. Plastic pipe shall not be installed within 35 feet of an underground steam facility, nor in any vault in which a steam facility is located.
(11) The specific plastic pipe, tubing or fitting to be used shall be thoroughly investigated by the user and material serviceability determined for the conditions anticipated. The selected material shall be adequately resistant to the liquids and the chemical atmosphere which may be encountered. Care shall be exercised at all times to protect plastic material from fire, excessive heat, or harmful chemicals.
(12) The design pressure is not to exceed 100 psig for plastic gas service piping.
(13) The design pressure for plastic gas service piping or the nominal wall thicknesses for a given design

pressure shall be determined by one of the following formulas:

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$$P = \frac{2S \times F}{R-1} \quad \text{or} \quad P = \frac{2S\ t \times F}{(D-t)}$$

where:

D = Specified outside diameter, inches

P = Design pressure, psi

S = Long term hydrostatic strength, psi (Determined in accordance with ASTM D2513)

t = Specified wall thickness, inches

F = Plastic design factor = .32

R = Standard dimension ratio

(14) Inspection and handling provisions. Plastic piping components are susceptible to damage by mishandling. Gouges, cuts, kinks, or other forms of damage may cause failure. Injurious gouges or grooves shall be removed by cutting out the damaged portion as a cylinder and replacing it with a good piece. Care shall be exercised during handling and installation to prevent such damage. The serving utility shall inspect plastic piping and its components to ensure the absence of imperfections in materials, to ensure sound joints are made, and to ensure conformance with applicable state regulations.

P115.9 Gas Piping Sizes.-Pipe sizes for gas distribution shall be in accordance with ANSI Z223.1-1974, subject to the following modifications. Section numbers referred to are those in that standard.

1.2.4.3 Add the following at the end of this section: "Individual outlets to gas ranges shall not be less than 3/4 in."

Section P116.0 Swimming Pools and Display Pools or Fountains

P116.1 Swimming Pools.-

(a) General requirements.-Swimming pools regulated by the building code shall be designed, installed, and maintained in accordance with the requirements of this reference standard.

(b) Prohibited pools.-The installation of fill and draw pools is prohibited.

(c) Toilet and shower facilities.-

(1) Toilets shall be installed in properly ventilated rooms, and shall be conveniently located so as to facilitate their use before the bathers enter the showers. The number of toilets to be provided shall be predicated upon the maximum number of bathers, both adults and children, who can be accommodated at any one time. There shall be at least one toilet provided for every 50 female bathers, at least one toilet and one urinal provided for every 75 male bathers, and at least one wash basin adjacent to the toilets for every 60 persons.

(2) The number of showers to be provided shall be predicated upon the maximum number of persons, both adults and children, who can be accommodated at any one time. At least one shower shall be provided for every 50 persons; but in no case shall there be less than two showers. Showers shall be supplied with hot and cold water, and shall be designed so that a proper mixture of hot and cold water can be obtained without the danger of scalding the bather. The entrance to the pool area from the dressing room shall be preceded by the shower room.

(d) Drainage.-

(1) At least one drainage outlet shall be installed in the deepest portion of the pool and shall of be sufficient size to drain the entire pool in 8 hours. The main drain outlets shall be provided with a vortex-and-suction-reducing device consisting of an outlet strainer or grating having a total open area equal to at least four times the area of the pool drain pipe. Or sufficient grating area shall be provided so that the maximum velocity through the grate does not exceed 1 1/2 fps. The minimum width of grating openings shall be 1/2 in. Multiple outlets shall be provided where the width of the pool is more than 30 ft. and such outlets shall not be spaced more than 30 ft. apart nor more than 15 ft. from the side walls. The pool drain connection shall be installed so as to prevent the reversal of flow from the sewer to the pool.

(2) Pool overflows shall be installed and constructed so that the overflow water is returned to the filter by means of overflow (scum) gutters, roll-out or deck level pool drains, or skimmers, along with the water returned to the filter through the main drain.

a. Overflow (scum) gutters shall extend completely around the pool, except at steps or recessed ladders in the shallow portion. The gutter shall be capable of continuously removing 50 percent or more of the recirculated water and returning it to the filter. All overflow gutters shall connect to the recirculation system through a properly designed surge tank. Where vacuum filters are used and are below the pool water level, the filter tank can be used as the surge tank. Piping from the gutter drains of the pool must be designed to rapidly remove the overflow water, but the maximum flow rate should not exceed 6 fps.

1. The gutters shall be designed so that they can be cleaned easily. The opening into the gutter beneath the coping shall be at least 4 in., and the interior of the gutter shall be at least 3 in. wide and 3 in. deep. Where large gutters are used, they shall be designed to prevent entrapment of the bather's arms or legs. They shall be designed in accordance with the standards of American public health service.

2. Overflow outlets or drains shall be installed at intervals sufficient to provide equal removal of the overflow from the entire surface of the pool. The outlet fittings shall connect to the return piping through 2 in.

pipe connections, and the clear opening in the drain grating shall be at least equal to 1 1/2 times the cross-sectional area of the outlet pipe.

3. Continuous flow gutters with single or multiple outlets may be used provided they are self-cleansing and capable of maintaining an effective skimming action. Their use is normally limited to recirculating systems employing vacuum filters.

b. Roll-out deck level type pool overflows shall be designed to conform to the provisions for overflow rates as stated in a. above. The curb and handhold shall be designed so as to prevent splash-back of overflowed water. The design shall be subject to approval by the Commissioner.

c. Skimmers may be used in pools provided handholds are installed and provided at least one skimming device is installed for every 500 sq. ft. of pool surface area or fraction thereof. Skimmers shall be located so as to minimize interference with each other and insure proper skimming of the entire surface. Skimmers shall be built into the pool wall, and shall develop sufficient velocity on the pool water surface to induce surface skimming. The skimmers shall be provided with flow-rate adjustment valves to balance the system. Also, the skimmer shall meet the following requirements and the NSF standards.

1. The piping and other pertinent components shall be designed for a total capacity of at least 80 percent of the required filter flow, with a minimum skimmer flow-through rate of either 30 gpm or 3.75 gpm per lin. in. of weir.

2. The skimmer weir shall be capable of automatically adjusting to water level variations through a range of at least 4 in. The weir shall be of a buoyancy and design that will allow it to develop an effective velocity.

3. An easily removable and cleanable basket or screen through which all overflow water must pass shall be provided to trap large solids.

4. Provisions shall be made to prevent airlock in the suction line or to protect the pump in the event the pool water level drops below weir level. If an equalizer line is used, it shall be sized to meet the capacity requirements of the filter and pump, and shall be at least 2 in. in diameter and capable of providing at least 30 gpm of water for pump suction without air entrainment. The equalizer line shall be located at least 1 ft. below the lowest overflow level of the skimmer, and shall be provided with a valve that remains tightly closed under normal operating conditions but will automatically open when the skimmer becomes starved. Where vacuum filters are used, a separate suction pump shall be provided.

(e) Inlets.-A pool shall have inlets of such size and spacing so as to facilitate uniform circulation of water throughout the pool. The inlets shall be submerged sufficiently to prevent loss of chlorination or other disinfectant. There shall be no direct connection between the pool piping system and the domestic water supply system. An inlet shall be located not more than 5 ft. from the corner of the pool, and the inlet spacing shall not exceed 20 ft., unless otherwise permitted by the Commissioner. Inlets shall be of the adjustable type and shall be located at least 12 in. below the pool water level.

(f) Recirculation and Filtration.-A pool shall have a water recirculation system consisting primarily of piping, pumps, filters, disinfecting equipment, and other standard accessory equipment that shall be adequate to clarify and disinfect the contents of the pool within 8 hrs. A flow meter shall be provided to indicate and record the rate of pumpage. The surface of the filter medium of all filters shall be of such size that the rate of filtration does not exceed 3 gpm per sq. ft. of surface area, except that when diatomaceous earth filters are used, the rate of filtration shall not exceed 2 gpm per sq. ft. of surface area. The recirculation system shall be kept in operation 24 hr. a day while the pool is in operation. Filters shall bear the seal of approval of NSF.

(g) Hair and lint catchers.-A strainer shall be provided that is easily accessible for cleaning. The strainer shall be of corrosive resistant materials with 1/8 in. openings or less, and shall provide a free flow area of at least four times the area of the pump suction lines.

(h) Disinfection.-

(1) The pool shall have an effective means of disinfection introduced by mechanical means. The equipment shall be capable of providing at least 8 ppm chlorine at the turnover rate of the pool.

(2) Chlorine, calcium hypochlorite, or similar compounds not containing ammonia, shall be used to disinfect a pool. The use of ammonia or ammonia compounds is prohibited.

*(3) Liquefied chlorine shall be used only when permitted by the Commissioner. It shall be stored only in a separate room or enclosure constructed of non-combustible materials having a fire-resistance rating of at least one hour and its use shall comply with the requirements of the fire department.

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*(4) When chlorine gas is used as a disinfectant, at least two gas masks in good operating condition and of a type approved by the United States bureau of mines for high concentrations of chlorine gas, shall be provided. The gas masks shall be kept at a readily accessible point near the chlorinators feeding chlorine gas but outside the chlorinator room. The room housing chlorinator shall be located at grade level with direct egress to the outer air and provided with an automatic sprinkler system constructed in accordance with the provisions of article seventeen of the building code. The domestic water supply may be used to supply the sprinklers when it complies with section C26-1703.9(e). A drain shall be provided in the floor of the room.

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(i) Heating.-A swimming pool shall not be heated by the direct injection of steam into the pool or by the direct installation of electrical heating elements in the pool.

(j) Make-up water.-Make-up water shall be supplied to the pool through an air gap by one of the following means:

(1) Through a fill spout above the pool rim, preferably installed under the diving board.

(2) Through a make-up tank.
(3) Through the filter tank of vacuum diatomaceous earth filters.

(k) Water standards and quality.-
(1) A pool shall use water from the public water supply system or such other source as may be approved by the department of health.
(2) Water in a pool shall be treated and maintained so that not more than 200 bacteria per milliliter appear in the test sample, nor shall the test sample show a positive (confirmed) test for bacteria of the coliform group in any of five 10 milliliter portions.
(3) The amount of free chlorine in the water, as determined by an orthotolidine test at 60 degress F or less, shall be at least 0.4 ppm. The dechlorinated water shall have a pH value in the range of 7.2 to 8.2.
(4) The surface of water in a pool shall be reasonably free from scum and floating matter. The water in a pool shall be sufficiently clear to permit a 6 in. black disc on a white field, placed on the bottom of the pool at the deepest point and 10 ft. from the side, to be clearly visible from the runway around the deep area of the pool. The bottom and sides of the pool shall be maintained free from sediment, dirt and slime.
(5) Tests of pool water shall be performed in accordance with "standard methods for examination of water, sewage, and industrial wastes," published jointly by the American Public Health Association, American Water Works Association, and Federation of Sewage and Industrial Waste Associations, eleventh ed. The tests, as required by the department of health to maintain an operating permit for the pool, shall determine the presence of residual chlorine, the pH value of the water, and the clearness of the water. The tests shall be made by the pool operator as frequently as necessary throughout each day to maintain the standards required by this section.

(l) Pipe identification.-Pipes used for different purposes shall be painted different colors to facilitate identification. The colors shall be as follows:
potable water pipe-green
recirculation water pipe-light blue
backwash and wash water pipe-gray
chlorine pipe-yellow
well water pipe-red

P116.2 Display Pools and Fountains.-

(a) Water connections.-No direct or submerged water connections shall be made to a display pool or fountain.

(b) Drainage.-Each display pool or fountain shall be provided with a drain connection. The circulating or fountain pumps may be used to drain the pool to either the storm, sanitary, or combined sewer.

(c) Recirculation required.-Any display pool or fountain that will waste more than 2,000 gal. per day based on continuous 24 hr. operation shall be provided with a recirculation system. A statement from an architect or engineer attesting to the amount of water wasted shall be filed with the plans for any display pool or fountain.

(d) Treatment.-The water shall be treated with chemicals, either mechanically or hand fed, to prevent odors, mosquito breeding, and other health hazards. Chemicals used shall be nontoxic to animals or human beings. In lieu of chemical treatment, the entire pool may be drained at intervals provided the water wasted does not exceed the amount specified in (c) above.

Note: Excerpts from Local Law 7-1974
Section 1. The council finds that serious flooding and ponding problems exist in areas of the city of New York which are presently without adequate sewers for the disposal of storm water. The council further finds that these flooding and ponding problems endanger human life and cause substantial property damage. As the primary means of reducing these problems, the city of New York currently is engaged in an accelerated sewer construction program, approved by the council, of unprecedented scope. The city is also engaged in an active program of maintaining existing watercourses and other storm water disposal systems pursuant to orders of the city's Board of Health. It is the expectation of the council that in the next twenty years the city sewer construction program will provide a large network of storm sewers for the areas of the city which presently lack them. In addition, however, the council recognizes that present construction of new buildings and developments without adequate storm water drainage in these unsewered areas is worsening existing flooding and ponding problems, and that the stringent storm drainage requirements for property owners set forth in this local law, which terminates December thirty-first, nineteen hundred ninety three, are necessary as a temporary measure until the city has substantially advanced its accelerated sewer construction program.

§10 This local law shall take effect thirty days after it shall have become law. Its requirements insofar as they differ from or are additional to those of the administrative code of the city of New York in effect immediately prior to the effective date of this local law shall apply to the construction of all new buildings for which applications for new buildings permits have been filed on or after such effective date; provided, however, that such new or different requirements shall not apply to the construction of new buildings on specific sites for which schemes for storm water drainage have been approved by the environmental protection administration on or before such effective date if such construction lawfully commences within five years after such approval. A scheme for storm water drainage for the purpose of this section is an undetailed plan which shows the proposed drains, sewers and/or other means of storm water disposal, which the environmental protection administration normally requires property owners to submit to it prior to the submission of a detailed plan for the construction of such facilities.
Effective date, May 16, 1974.

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REFERENCE STANDARD RS-17
FIRE ALARMS, DETECTION AND EXTINGUISHING EQUIPMENT
*LIST OF REFERENCED NATIONAL STANDARDS

ANSI/NFiPA No. 13	Standard for the Installation of Sprinkler System, as Modified	1989
**ANSI/NFiPA No. 13R	Standard for the Installation of Sprinkler Systems in Residential Occupancies up to and Including Four Stories in Height	1994
**ANSI/NFiPA No. 13D	Standard for the Installation of Sprinkler Systems in One- and Two-Family Dwellings and Manufactured Homes	1994
ANSI/NFiPA No. 214	Standard for Water-Cooling Towers	1988
***ANSI/NFPA No. 72	National Fire Alarm Code	1993
ANSI/ASME B16.4	Cast-Iron Threaded Fittings, Class 125 and 250	1985
UL No. 193	Alarm Valves for Fire-Protection Service (Revision 9/88)	1988
UL No. 260	Dry Pipe and Deluge Valves for Fire Protection Service	1988
UL No. 262	Gate Valves for Fire-Protection Service	1988
UL No. 312	Check Valves for Fire-Protection Service (Revision 10/89)	1988
UL No. 668	Hose Valves for Fire-Protection Service	1988
UL No. 753	Alarm Accessories for Automatic Water-Supply Control Valves for Fire-Protection Service (Revision 8/89)	1989
UL No. 789	Indicator Posts for Fire-Protection Service (Revision 3/89)	1987
UL No. 1091	Butterfly Valves for Fire-Protection Service	1986
UL No. 1468	Direct-Acting Pressure-Reducing and Pressure-Control Valves for Fire-Protection Service	1985
UL No. 1486	Quick Opening Devices for Dry Pipe Valves for Fire-Protection Service (Revision 7/85)	1979
UL No. 1726	Automatic Drain Valves for Standpipe Systems (Revision 9/88)	1985
UL No. 1739	Pilot-Operated Pressure-Control Valves for Fire-Protection Service	1988
ANSI A21.10/AWWA C110	Ductile-Iron and Grey-Iron Fittings, 3-inch through 48-inch for Water and Other Liquids	1987
ANSI A21.11/AWWA C111	Rubber Gasket Joints for Ductile Iron and Grey-Iron Pressure Pipe and Fittings	1985
***ANSI/ASTM A234	Specification for Pipe Fittings of Wrought Carbon Steel and Alloy Steel for Moderate and Elevated Temperatures	1988
ANSI/NFiPA No. 22	Standard for Water Tanks for Private Fire Protection	1987
UL No. 217	Single and Multiple Station Smoke Detectors including Revision of February 19, 1989	1989
ANSI/NFiPA No. 74	Standard for the Installation, Maintenance, and Use of Household Fire Warning Equipment, as Modified	1989
ANSI/NFiPA No. 20	Installation of Centrifugal Fire Pumps	1990
ANSI/NFiPA No. 231	Standard of Indoor General Storage	1990
ANSI/NFiPA No. 231C	Standard for Rack Storage of Materials	1986

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*REFERENCE STANDARD RS 17-1
STANDPIPE SYSTEM CONSTRUCTION

1. Materials for Standpipe Systems-

(a) Pipe-

(1) Pipe for standpipe systems shall be in accordance with table RS 17-1-1, and shall conform to the standards of table RS 16-1, of reference standard RS-16.

(2) Pipe for buried sections of the standpipe system, whether inside or outside of the building, shall be red brass, hard temper type "K" copper tubing, galvanized wrought iron, galvanized steel, cast iron, ductile iron, or approved equivalent material. All such pipe, other than cast iron, shall be adequately wrapped or otherwise protected against corrosion.

(3) The name of the manufacturer and the pressure to which the pipe was tested shall be permanently and legibly indicated on all pipe used in standpipe systems.

(4) Only new pipe shall be used in standpipe systems.

(b) Fittings-

(1) Fittings used in standpipe systems above ground shall be malleable cast iron, ductile iron or cast steel or approved equivalent conforming to reference standard RS 17-6.

(2) Fittings used in standpipe systems underground shall be cast iron or ductile iron or approved equivalent conforming to reference standards RS 17-7 or RS 17-8.

(3) Pressure ratings shall be cast in or on the fittings. (See table RS 17-1-1 for required ratings.)

* TABLE RS 17-1-1
REQUIRED RATINGS OF PIPE, FITTINGS AND VALVES IN STANDPIPE SYSTEMS FOR VARIOUS HEIGHTS OF BUILDINGS [c,d]

Distance from Upper Tank Check to 1st Floor or Fire Pump (ft.)	Class of 2 ½ Hose Outlet Valves	Type of Pipe	Fittings (wwp in psi)	Check and Gate Valves (wwp in psi)
0 to 115	A[a]	Schedule 10 or 40 carbon steel	300	175
115 to 270	A[a]	Schedule 10 or 40 carbon steel	300	250
270 to 425	B[b]	Schedule 40 carbon steel	350	350
425 to 657	B[b]	Schedule 40 carbon steel	500	500
625 to 1,112	B[b]	Schedule 80 carbon steel	800	800
1,112 and over	B[b]	Schedule 80 carbon steel	1,000	1,000

Notes.-

[a]For installation in buildings not exceeding 300 ft. in height or the uppermost 300 ft. in taller buildings. Valve shall close tightly against 300 psi normal hydraulic pressure and shall withstand a hydraulic test pressure of 750 psi.

[b]For installation in the lower portions of buildings exceeding 300 ft. in height. Valve shall close tightly against 400 psi normal hydraulic pressure and shall withstand a hydraulic test pressure at 1,250 psi.

[c]Six inches and larger section and riser control valves shall have a valved bypass.

[d]Siamese connections shall be rated for the same pressure as is required for interior fittings and valves.

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(4) Fittings used in standpipe systems that are of welded construction shall be of a type conforming to reference standard RS 17-9 for welding purposes.

(5) Approved mechanical couplings such as cut groove, rolled groove and mechanical tees may be used in the standpipe system. Fittings used in conjunction with the coupling shall be designed for use with the coupling.

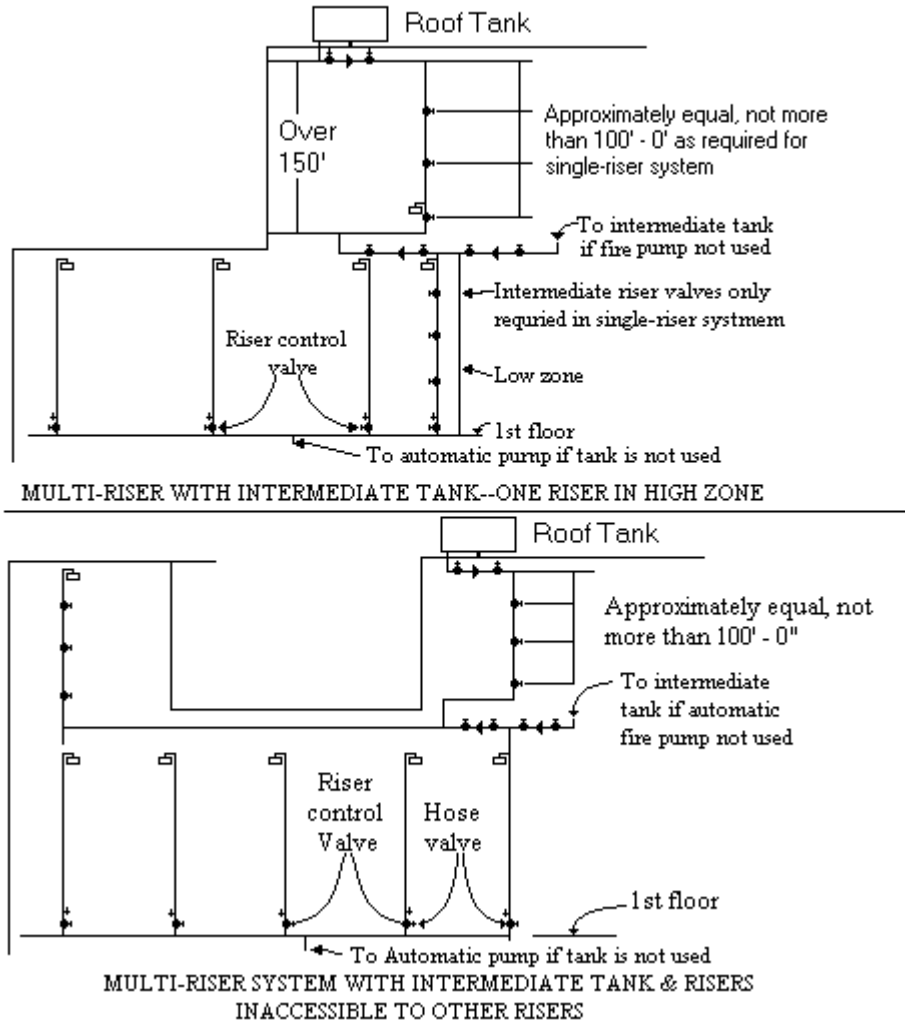
(c) Valves-

(1) Valves and related products used in fire protection shall be approved and comply with reference standard RS 17-6A.

(2) O. S. & Y. indicating valves (with indicator readily visible from the floor) shall be provided to permit any riser or other section to be shut off while remaining risers or sections continue in use. Valves shall be flanged, mechanically coupled, or wafer type and with bodies of cast iron, ductile iron, cast steel or approved equivalent material having nonferrous metal seat rings. See Table 17-1-1 for required ratings and Figures RS 17-1-1 and RS 17-1-2 for valve locations.

(3) In single riser systems, or where a single riser extends through an upper portion of the building supplying hose outlet valves more than 150 ft. above the curb level, section valves shall be installed in the single riser at the floor where the single riser starts and at increments of not more than 100 ft. above the first valve. The section valve or valves in the upper section of the riser shall be located so as to divide the riser into increments as shown in figure RS 17-1-1, and RS 17-1-2.

Figure RS 17-1-1. Riser and Intermediate Valves (Multi-Riser System).



(4) Riser control valves, shall where practical, be located within a required stair enclosure serving the entrance floor. Where the stair enclosure extends to the basement or cellar, the riser control valve may be located within the stair enclosure at or in, the basement or cellar ceiling, providing that a sign indicating the valve location is installed within the stair enclosure at the entrance floor. The hose outlet valve for the entrance floor shall be located on the riser side of the riser control valve. Riser control valves shall not be required on a vertical line supplying one (1) or two (2) hose outlet valves.

(5) Where riser control or section valves are located outside of a required stair enclosure, the valves shall be of such type and so installed so as to be remotely operated by either electric motors or hydraulic means. The remote control shall be from either the entrance floor or from a fire pump room. Operating devices shall be grouped, suitably housed, and kept locked with a fire department lock and key. The door of the housing shall be embossed to indicate the purpose of the device. Instructions for operating the remote valves by the control device shall be legible, detailed, and complete, and shall be permanently secured to the inner face of the door.

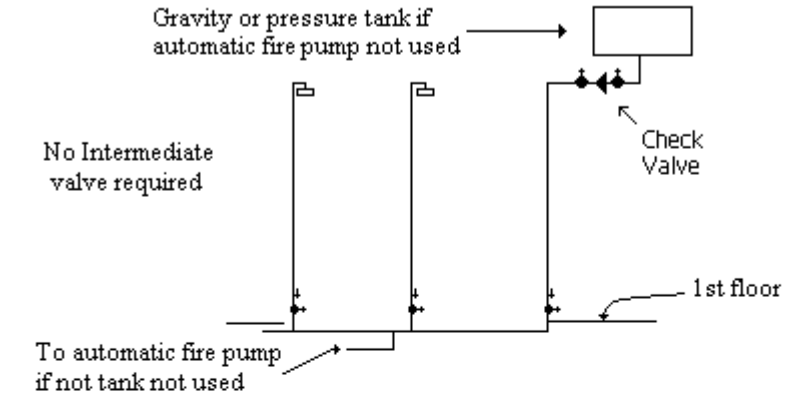
(6) Each valve shall be so designed and installed as to permit its manual operation at the valve location. Pressure ratings and the name of the manufacturer shall be cast raised or depressed on each valve used in the system.

(7) The position of each remotely controlled valve, whether opened or closed, shall be indicated at its remote control point and also at the valve.

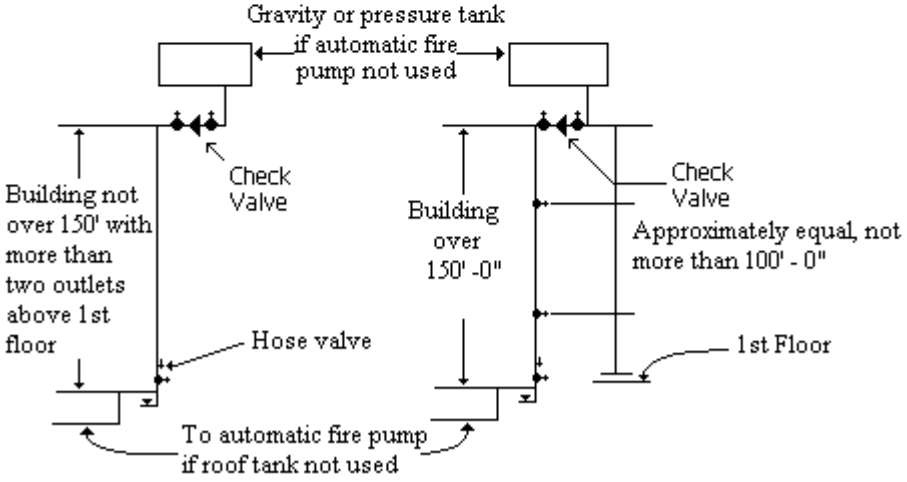
(8) Valves shall be readily accessible for inspection, repair, and use.

If the valve is placed so that its operating mechanism is more than 7 ft. above a floor or stair landing, a 12 in. wide wrought iron, steel or equivalent ladder securely fastened shall be provided for access to the valve. In

Figure RS 17-1-2 Riser and Intermediate Valves
(Single and Multi-Riser System).



MULTI-RISER SYSTEM



SINGLE RISER SYSTEM

lieu of a ladder, chain operated mechanisms are permissible and shall be padlocked securely in place.

(9) Each control valve shall be conspicuously marked with the number assigned to it on the riser diagram for the standpipe system. Metal numbered tags at least 2 in. in diameter shall be securely attached to the valve. Each valve shall have a metal sign stating "STANDPIPE CONTROL VALVE" securely hung from the valve.

(10) Each control valve not controlled shall be sealed with a lock and chain in its normal position. If the normal position is the closed position, a metal placard stating such fact shall be conspicuously attached to the valve.

(d) Check valves.-(1) Check valves shall be flanged, mechanically coupled, or wafer type and be cast iron, ductile iron, cast steel or approved equivalent materials having nonferrous metal seat rings and bearings. Swing-type valves shall be installed horizontally in pipes from each siamese hose connection, and in piping from each tank, pump, and city water connection. Spring loaded check valves may be installed in the vertical or horizontal position on the discharge side of fire pumps and tank connections.

(2) Check valves other than those in siamese and fire pump line shall be provided with an O. S. & Y. or indicating shutoff valve (with indicator readily visible from the floor) that is flanged, mechanically coupled or wafer type and connected to the inlet and outlet of such check valves. The valves on the suction and discharge of the fire pump shall be deemed to comply with this requirement when the discharge valve is placed on the discharge side of the check valve. One of the shutoff valves placed on each side of the tank check valve may be of the remote control type, and when used, shall be on the downstream side of such check valve.

(e) Supports.-Piping in standpipe systems shall be adequately supported by clamps, hangers, or other supporting devices.

2. Siamese Connections.-

(a) Design and construction.-

(1) Siamese connections shall have a swing-type check valve in each outlet branch unless such connection is at the

shore end of a standpipe system also supplied by a siamese hose connection of the type specified for fireboat use.
(2) Siamese connections for fireboat use shall have two 3 1/2 in. swivels with fire department female threads. All other siamese hose connections, except those of the shore end type, shall have two 3 in. swivels with fire department female threads.
(3) All shore end siamese connections shall have 3 in. male hose threads and shall be subject to the approval of the fire department. In lieu of a check valve, each branch may have a drip and a long stem valve, which shall be located within the structure or otherwise protected against freezing. No siamese connections provided for fireboat use shall be installed in any standpipe system whose water supply is taken from the city water mains.
*__(b) Marking.-__Each siamese connection shall be provided with caps painted red, and shall have the word "STANDPIPE" in letters 1 in. high and 1/8 in. deep cast in the body or on a nonferrous metal plate secured to the connection or mounted on the wall in a visible location, except that caps of each siamese connection used for combination standpipe and sprinkler systems shall be painted yellow and the words shall read
"COMBINATION STANDPIPE AND SPRINKLER SYSTEMS".
(c) Location.-
(1) Siamese connections shall be placed between 18 in. and 36 in. above the sidewalk level.
(2) Siamese connections shall be of the flush or free standing type, and with the exception of the swivel caps, shall not project beyond the street property line. The riser pipe to a free standing siamese connection shall be red brass. When siamese connections are installed in wall recesses, the recesses shall be of ample size to permit convenient hose attachment.
(d) Check valve.-Each siamese connection shall be provided with a swing-type check valve inside of the building or in a valve pit outside of the building.
(e) Drip valve.-A 3/4 in. automatic ball drip valve shall be placed between the siamese connection and the check valve, except that on a fireboat siamese connection, a 1/2 in. open drip without a shutoff may be used. Automatic ball drips shall be placed in the horizontal position.
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3. Hose Stations.-
(a) Hose outlet valves.-
(1) On each floor at each riser, the required 2 1/2 in. angle hose valve shall be of a class as indicated in Table RS 17-1-1.
(2) At the top of the highest riser there shall be provided, above the main roof level, a three way manifold equipped with three 2 1/2 in. hose valves with hose valve caps. The lowest valve shall be located with the hose end at least 18 in. above the roof and the highest valve with the hose end not more than 60 in. above the roof. The manifold may be set in a horizontal or vertical position, provided the hose outlets are set back between 18 in. and 60 in. above the roof level.
(3) Where the manifold is located other than within a heated stair enclosure, the control valve shall be located in a horizontal run of piping below the roof, with a long stem extending through the roof and equipped with a wheel handle at its upper end at least 12 in. above the roof. Between the control valve and the manifold there shall be provided within the heated space a 1/2 in. open drip or a 3/4 in. automatic ball drip, with the drip pipe extended to spill over a plumbing fixture or drain.
(b) Stations within stair enclosures.-
(1) In occupancies where a 2 1/2 in. fire hose is mandatory, the hose shall be connected to the 2 1/2 in. hose valve within the stair enclosure.
(2) In occupancies where 1 1/2 in. fire hose is permitted, a 2 1/2 in. x 1 1/2 in. brass or bronze non-swivel reducing coupling shall be attached to the 2 1/2 in. hose valve or an auxiliary hose station may be provided.
(c) Branch sizes to hose stations.-
(1) The branch size shall be predicated on the developed length from the riser or cross connection to the required 2 1/2 in. hose valve station as follows:
Up to 4 ft. - 2 ½ in.
Over 4 ft.- 3 in. to 25 ft.
Over 25 ft. - 4 in.
(2) No valve shall be placed between the hose station valve and the riser or cross connection, except that on branches that serve three (3) or more hose stations, a valve shall be provided at the riser or cross connection.
(3) Not more than one (1) hose outlet shall be supplied from a 2 1/2 in. or 3 in. branch.
(d) Auxiliary hose stations branch size.-
(1) Branch piping from the required riser to an auxiliary hose station may be 2 1/2 in. I.P.S., and no valve shall be installed in the branch pipe with the exception of the 1 1/2 in. hose valve at the auxiliary hose station.
(e) Size, type and quality of hose.-
(1) At each hose station, hose shall be provided of a size, type and quality as required by the provisions of the building code.
(2) Hose couplings shall be of brass construction or approved equivalent materials with Fire Department threads.
(f) Nozzles.-
(1) Nozzles on 2 1/2 in. hose, except for yard hydrants, shall be at least 15 in. in length, and shall have a smooth bore with a 1 in. or 1 1/8 in. discharge orifice.
(2) Nozzles for hose used on yard hydrant systems shall be equipped with a playpipe conforming to the requirements of the Fire Department.
(3) Where 1 1/2 in. hose is within the stair enclosure, the nozzle may be a 1/2 in. smooth bore nozzle at least 12 in. in length or an adjustable combination fog nozzle.
(4) Nozzles at auxiliary hose stations shall be Fire Department approved adjustable combination fog nozzles.
(5) All nozzles shall be of brass, cast iron, aluminum or

approved equivalent materials with Fire Department threads.

(g) Hose and valve cabinets.-

(1) When the hose is kept in a cabinet, such cabinet shall be equipped with a single swinging door that shall have at least an 8 in. high panel of clear wired glass at the level of the hose valve and rack. The door width shall be the full inside width of the cabinet, and the glass panel shall be at least 90 percent of the width of the door. Where an extinguisher or other appurtenance are installed within the cabinet, the door shall have clear wire glass panel the full 90 percent of the door areas.

(2) The hose valve within a stair enclosure may be kept in a cabinet. Such cabinet shall be equipped with a single swinging door that shall have a clear wired glass panel 90 percent of the door area. The valve shall be placed in the cabinet to permit coupling of 2 1/2 in. hose to the valve without causing kinks in the hose.

(3) Each cabinet shall be readily accessible and the door shall be kept unlocked.

(4) Cabinets may have solid metal doors when located in the entrance hall of a building. All such hose cabinets or closets shall be permanently marked "FIRE HOSE" across the door panel in red letters at least 1 in. high and shall not be used for any other purpose but concealing the hose station.

(h) Hose rack.-

(1) The hose at each outlet shall be kept upon a hose rack firmly supported and placed between 5 ft. and 6 ft.-6 in. above the floor or landing.

(2) The use of dump or reel-type racks is prohibited.

4. Tanks in Standpipe System.-

(a) Construction and support of tanks.-Tanks for the standpipe system supply shall be constructed and supported in accordance with the provisions of Reference Standard RS 16, Reference Standard RS 17-2, and applicable provisions of the building code for loads and structural work.

(b) Combination tanks.-Gravity tanks may be used to provide the required primary water supply to the standpipe system and may also be used to supply automatic sprinkler and/or domestic water in a building provided all the following conditions are met:

*(1) The connections to the tank are made in such a manner as to provide the required sprinkler and/or fire standpipe reserve. The domestic supply is above the sprinkler and/or standpipe reserve. The standpipe reserve is above the sprinkler reserve. Where a standpipe riser is used to supply water to a combination sprinkler and standpipe system as permitted, the connection to the tank shall be made in such a manner as to provide the required sprinkler or standpipe reserve, whichever is greater.

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(2) The connections to the system are made outside of the tank. When connections or piping are installed inside the tank, the piping shall be assembled without couplings and shall be of red brass or approved equivalent material in accordance with Reference Standard RS-16.

(3) The tank is filled by means of an automatic pump at a rate of not less than 65 gpm.

(c) Filling of tanks.-

(1) Pressure or gravity tanks shall be filled at the rate of at least 65 gpm. Pipes used to fill the tanks shall not be used for any other purpose; nor shall required fire pumps be used for filling purposes.

(2) Where there is sufficient pressure in the city water main to fill tanks at the required rate during all hours of each day, and a filling pump is not provided, the connection to the city water supply shall be made near the point where the city water service enters the building.

**(3) A combined fire standpipe reserve and domestic water tank shall only be filled by direct public water connection or separate fill pumps, or direct connection to equipment, or pumps used to supply domestic water systems in accordance with Reference Standard RS-16.

(d) Emergency Drains on standpipe tanks.-Each standpipe tank shall be provided with a drain of at least 4 in. National Pipe Thread. Each drain pipe shall be controlled by a manually operated gate valve located so as to be readily accessible. The drain shall be installed in accordance with the provisions of Reference Standard RS-16.

(e) Heating of standpipe tanks.-

(1) Where the water in the tank is subject to freezing, the tank shall be equipped with a tank heater in accordance with the provisions of Reference Standard RS 17-10.

(2) Where the standpipe supply and domestic water supply are combined in a single tank, heating of such tank shall not be required in hotels, multiple dwellings, hospitals, or other occupancies where the domestic supply is drawn upon during all hours of every day of the week.

(f) Strainer.-

(1) Every standpipe gravity or suction tank shall be provided with a brass or bronze strainer at the discharge to risers or to pump supply lines.

(2) Each strainer shall have clear openings with an aggregate area equal to, or more than, the required area of the pipe into which the tank discharges. Openings shall be not more than 1 in. nor less than 1/2 in. in diameter.

(g) Overflow pipe for standpipe tanks.-Each gravity standpipe tank shall be provided with an overflow in accordance with the provisions of reference standard RS 16.

(h) Access to standpipe tanks.-Access to the top of each gravity tank shall be by means of a steel, wrought iron or approved equivalent material gooseneck ladder, constructed of flat side bars at least 2 in. by 3/8 in, or equivalent, spaced at least 14 in. apart, with round or square rungs at least 5/8 in. thick spaced not more than 12 in. on centers. The ladder shall be rigidly braced and shall not tip outward from the vertical at any point.

When ladders exceed 25 ft. in height, body irons spaced not more than 2 ft. on center and a metal platform at least 14 in. square, rigidly secured to the stringers of the ladder or other type of enclosed safe access, shall be provided near the top of the tank.

(i) Tank alarms for standpipe systems.-

(1) Gravity tanks not filled by an automatic pump or by city pressure shall be equipped with a high and low water level electrical alarm system.

(2) All pressure tanks used to provide the required primary water supply of a standpipe system shall be equipped with a high and low air pressure and a high and low water level electrical alarm system. Air-to-water ratio shall be 1 to 2 by volume and may be maintained by automatic electrical controls.

*****384-82 BCR***

5. Fire Pumps in Standpipe Systems.-

*****(a) Installation of standpipe fire pumps.-**

(1) Fire pumps shall be placed on concrete pads at least 12 in. above the pump room floor with a clearance of at least 3 ft. maintained on all sides from walls or from other equipment in the pump room. In the event of the use of a vertical shaft centrifugal fire pump, the 12 in. high concrete pad may be omitted, provided the bottom of the electric driving motor and all electrical appurtenances are raised at least 12 in. above the pump room floor.

(2) The control of the manually operated fire pump shall be designed to operate at predetermined speeds to give pressure increments of 50 psig. The first step of the starter shall provide 100 psig at the pump, and each succeeding step shall produce increments of 50 psig up to the required pump pressure.

(3) Each automatic fire pump shall be equipped with a 3 in. National Pipe Thread pressure relief valve installed in the pump discharge. Such relief valve shall be set to relieve below the shutoff head of the pump, but above the pressure required to maintain the operating pressure at the highest hose valve. The discharge from the relief valve may be piped back into the suction side of the pump on the pump side of the suction valve provided a visual sight glass is installed in the discharge of the relief valve. Automatic fire pumps may be provided with a time delay switch to insure a minimum running time for the pump.

(4) Each manually operated fire pump shall be equipped with a 3 in. National Pipe Thread pressure relief valve for 500 gpm pumps and a 4 in. National Pipe Thread pressure relief valve for 750 gpm pumps. The relief shall be installed in the pump discharge line and set to relieve at a pressure not to exceed 15 lb. over the pressure required to deliver the rate capacity of the pump at the highest hose outlet. Discharge of the relief valve may be piped back into the suction side of the pump on the pump side of the suction valve provided a visual sight glass is installed in the discharge of the relief valve.

(5) Each manually operated pump shall be equipped with a test valve installed in the pump discharge line that may be connected to the discharge side of the relief valve if the discharge pipe is piped back to the suction side of the pump as provided in (4) above. The size of the test line shall be 3 in. National Pipe Thread for a 500 gpm pump and 4 in. National Pipe Thread for a 750 gpm pump.

(6) The check valves in the pump discharge line shall be either swing type or spring loaded.

****(b) Wiring for fire pumps.-**

(1) When the fire pump feeder conductors are routed through the building(s), they shall be enclosed by two (2) inches of concrete or shall be listed electrical circuit protective systems with a minimum of one-hour fire resistance.

******177-72 BCR; 1014-80 BCR***

*****DOB 7-24-96***

****310-90 BCR***

* REFERENCE STANDARD RS 17-2
** ANSI/NFiPA No. 13 – 1989
STANDARD FOR THE INSTALLATION OF SPRINKLER SYSTEMS

The provisions of NFiPA No. 13 – 1989 shall be subject to the following modifications. The section and paragraph numbers are from that standard.

*****DOB 6-26-99***

CHAPTER 1-General Information

1-1 Delete.

1-4 Delete.

1-6 Delete.

1-7 Classification of Occupancies

Add 1-7.5 For purposes related to sprinkler installation, classification of occupancies in paragraphs 1-7.2.1, 1-7.3.1, 1-7.3.2, 1-7.3.3 and 1-7.4.1 shall be considered as equivalent to classifications of buildings and spaces in the building code as follows:

Light Hazard-E, G, H-1, H-2, J-1, J-2, J-3

Ordinary Hazard-B-1, B-2, D-1, D-2, C, F-1, F-3, F-4 except restaurant and cafeteria seating areas, shall be considered light hazard. Conference rooms and auditorium spaces related to Class E occupancies shall be considered light hazard.

Extra Hazard-A

1-9 Delete.

1-10 Delete.

1-11.1 Delete.

1-11.2 Delete except for 1-11.2.4 and 1-11.2.5

1-11.3 Delete.

1-12 Delete.

CHAPTER 2-Water Supplies

2-1 Delete. Revise table 2-2.1 (a) and notes to read as follows:

TABLE 2-2.1.1(a)
GUIDE TO WATER SUPPLY REQUIREMENTS FOR PIPE SCHEDULE SPRINKLER SYSTEMS

Occupancy Classification	Residual Pressure Required (See Note 1)	Acceptable Flow at Base of Riser (See Note 2)	Duration in Minutes (See Notes 3, 4 & 5)
Light Hazard	15 psi	500-750 gpm	30
Ordinary Hazard (Group 1)	15 psi or higher	700-1000 gpm	40
Ordinary Hazard (Group 2)	15 psi or higher	850-1500 gpm	40
Ordinary Hazard (Group 3)	Pressure and flow requirements for sprinklers and hose streams to be determined from Table 2-2.1.1 (b)		40
Warehouses (See Note 6)	Pressure and flow requirements as determined by Chapter 7 and subject to Commissioner's approval.		
High Rise Buildings	Pressure and flow requirements for sprinklers in accordance with Table 2-2.1.1(b).		
Woodworker's Shop - See Appendix A	Pressure and flow requirements subject to Commissioner's approval.		
Extra Hazard	Pressure and flow requirements subject to Commissioner's approval.		

Notes:

1. The pressure required at the base of the sprinkler(s) is defined as the residual pressure required of the elevation at the highest sprinkler plus the pressure required to reach this elevation.
2. The lower figure is the minimum flow ordinarily acceptable for pipe schedule sprinkler systems. The higher flow should normally suffice for all cases under each group.
3. Where there is a requirement for a sprinkler alarm, a central station signal shall be provided.
4. In existing buildings only, the Commissioner may authorize reduction of storage to 20 minutes provided there are provisions for acceptable mechanical automatic means of makeup to the storage tank.

The following conditions should be met for determining acceptable means for makeup:

a) Automatic means of makeup for a tank fire reserve should be capable of pumping water into the tank at a rate, for a period of 20 minutes, sufficient to equal the difference between the normal 30-minute demand and the alternate 20-minute demand. The demand required is established by calculations for the "most demanding remote area" from the riser as shown by examples of Appendix A of NFiPA 13-1989 and as now determined for the 30-minute demand.

b) There should be at least two (2) automatic means of makeup, each having the same capacity, so that in the event a unit must be removed for repairs the other unit can be placed in service.

c) An approved low water alarm is to be provided and located at a point 500 gallons above the available fire reserve level.

5. Where the water supply to a system sized in accordance with the pipe sizing schedules is taken from a water storage tank, the adequacy of the tank capacity shall be verified with a hydraulic calculation.
6. This occupancy classification shall apply when the warehouse contains high-piled or rack storage as defined in Section 4-1.3.10 and complies with the requirements of NFiPA 231 and 231C.

***Delete Table 2-2.1 (b) in its entirety, except for Density Curves and add the following:**

TABLE 2-2.1.1(b)

TABLE AND DESIGN CURVES FOR DETERMINING DENSITY, AREA OF SPRINKLER OPERATION AND WATER SUPPLY REQUIREMENTS FOR HYDRAULICALLY DESIGNED SPRINKLER SYSTEMS

Minimum Water Supply Requirements

Hazard Classification	Sprinklers Only-gpm	Duration in Minutes (See Notes 1, 2, & 3)
Light	See 2-2.1.3	30
Ord.-Gp. 1	See 2-2.1.3	40
Ord.-Gp. 2	See 2-2.1.3	40
Ord.-Gp. 3	See 2-2.1.3	40

For SI Units: 1 gpm = 3.785 L/min.

Notes:

1. In existing buildings only, the Commissioner may authorize reduction of storage to 20 minutes provided there are provisions for acceptable mechanical automatic means of makeup to the storage tank. Where 20 minutes storage cannot be achieved with existing storage facilities, alternative means of supply may be considered by the Commissioner. In any event, no fire reserve storage facility shall have less than 3500 gallons.

The following conditions should be met for determining acceptable automatic means of makeup:

a) Automatic means of makeup for a tank fire reserve should be capable of pumping water into the tank at a rate, for a period of 20-minutes, sufficient to equal the difference between the normal 30-minute demand and the alternate 20-minute demand. The demand required is established by calculations for the most demanding remote area from the riser as shown by examples of Appendix A of NFiPA 13-1989 and as now determined by the 30-minute demand.

b) There should be at least two (2) automatic means of makeup, each having the same capacity, so that in the event that a unit must be removed for repairs the other unit can be placed in service.

c) An approved low water alarm is to be provided and located at a point 500 gallons above the fire level reserve.

2. Where there is a requirement for a sprinkler alarm, a central station signal shall be provided.
3. In no case shall existing sprinkler storage capacities be reduced to less than the amount required for comparable new construction.
4. In fully sprinklered buildings the storage capacity of the fire reserve in the tank shall be as required for the sprinkler demand, but shall not be less than 3500 gallons in buildings with a single fire standpipe riser nor less than 5000 gallons in buildings with multiple fire standpipe risers.
5. Storage in light hazard occupancies where not more than 15 percent of the building is of ordinary hazard may have storage capacity predicated on light hazard occupancy provided that any such space shall not exceed 5,000 square feet in area.

633-83 BCR

2-2.4.1 to 2-2.4.6 Delete Except 2-2.4.3

2-3 Connections of Water Works Systems.

2-3.1.2 Delete.

2-4 Gravity Tanks.

2-4.2 Add an additional sentence to read as follows: "If any of the sprinkler heads are supplied from domestic water tanks, the combined water supply in the tank shall be at least 5,000 gallons. Further, that the sprinkler supply shall be taken from the lowest level of the tank."

Add 2-4.3 Combined Use. In E, F, G, H and J Occupancies, with only limited ordinary hazard areas, the sprinkler and standpipe reserve may be common to both. Reserve shall be sized for the greater demand.

Interpretations: Limited, may be defined as less than 30% of the floor area.

Add 2-4.3.1 Buildings whose occupancies are more than 85 percent light hazard, may have a light hazard water supply provided the ordinary hazard areas are designed for ordinary hazard requirements in respect to sprinkler spacing and pipe sizing.

Add 2-4.3.2 Combined standpipe and sprinkler systems may be used in D-2 Laboratory Occupancies, E, F, G, H and J. If an automatic fire pump is used as the primary supply, the requirements of 2-5.3 shall be complied with.

2-5 Pumps

Add 2-5.3 Combined Use. In light hazard occupancies with only limited ordinary hazard areas, an automatic fire pump serving the lower 300 feet of the standpipe system may be used as the primary supply to the sprinkler system, provided that a secondary power supply is available to drive the pump; and such power supply shall be automatic switching.

Add 2-5.4 In hydraulically designed sprinkler systems supplied from a gravity tank, the pressure may be increased by means of an automatic, special service fire pump. The pump shall be sized to satisfy the requirements of Table 2-2.1.1(a) or Table 2-2.1.1(b) and shall be arranged in a bypass to permit the portion of the system so supplied to be served by the system's siamese connections.

(a) If the pump is not supplied from the street side of the building service switch, the electrical service and pump operation shall be fully supervised; provided that a secondary power supply is available to drive the pumps and such power supply shall be automatic switching.

*2-5.5 Wiring for fire pumps. When the fire pump feeder conductors are routed through the building(s), they shall be enclosed by two (2) inches of concrete or shall be listed electrical circuit protective systems with a minimum of one-hour fire resistance.

DOB 7-24-96

2-6 Pressure Tanks

Delete 2-6.1 to 2-6.3 and substitute:

2-6.1 Acceptability.

2-6.1.1 A pressure tank in accordance with Table 2-2.1.1(a) or 2-2.1.1(b) is an acceptable water supply source. The total available quantity of water in pressure tanks need not exceed 15,000 gallons when there is a secondary source of water supply available from a gravity tank or a street connection acceptable to the Commissioner of Buildings. The maximum gross capacity of a single pressure tank shall be 9,000 gallons and shall include the needed extra capacity to fill dry-pipe or preaction systems when installed.

2-6.1.2 Each tank shall be kept at a maximum of 2/3 full of water and a minimum of 1/3 full of air maintained under a minimum pressure of 75 psig. The water-to-air ratio shall be so proportioned and the tank so located that a minimum pressure of 15 psig will be available on the highest line of sprinklers below the main roof when all the water is being discharged from the tank.

2-6.1.3 The tank supports shall be designed on the basis of the tank being full of water.

2-6.2 The tanks shall be supplied with water through a fixed pipe, independent of the sprinkler piping and at least 2 inch in size. The water supply shall be capable of supplying the tank at a rate of at least 65 gpm without decreasing the pressure in the tank. The tank shall have a fixed water level plate on the end of the tank opposite the gage glass, or equivalent devices, to indicate the level of the water in the tank.

2-6.3 The air compressor shall be provided with automatic controls for maintaining the air pressure. The capacity of the compressor shall be sufficient to build up the tank pressure to 75 psig within 3 hr. or less.

2-6.4 Pressure tanks shall be provided with approved closed circuit high and low water and high and low air pressure alarms.

2-6.5 Pressure tanks shall be located at or above the top level of sprinklers.

2-7 Delete.

2-8 Delete.

CHAPTER 3-System Components

3-1.1 Delete

3-1.1.1 Delete

3-1.1.4 Delete

3-1.1.5 Delete

Add the following, in lieu of the above:

Piping Specifications.

3-1.1 Pipe or tube used in sprinkler systems shall be welded and seamless steel, wrought steel, wrought iron, drawn seamless copper tube or threadless copper pipe.

The chemical and physical properties of wrought steel or wrought iron pipe should be at least equal to those manufactured in accordance with the specifications of the American Society for Testing and Materials for Black and Hot-Dipped Zinc-Coated (Galvanized) Welded and Seamless Steel-Pipe for Ordinary uses.

ANSI/ASTM Designation A120-80; Welded and Seamless Steel Pipe ANSI/ASTM Designation A53-79; ASTM Designation A72-68.

Dimensions for wrought steel or wrought iron pipe should be in accordance with the American Standard for Wrought Steel and Wrought Iron Pipe, ANSI B36.10-1979. Pipe used in sprinkler systems should be designed to withstand a working pressure of not less than 175 psig. It is intended that this sprinkler standard permit the use of "standard wall" pipe as described in ANSI B36.10-1979 for pressure up to 300 psig. Schedule 40 pipe is considered "standard wall" pipe. Schedule 30 pipe is acceptable in sizes 8 inches and larger. However, "light wall" schedule 10 pipe is acceptable in sizes 10 inches and smaller, provided that the piping is designed to withstand a working pressure of not less than 175 psig, when approved.

Tube or threadless pipe used in sprinkler systems shall be drawn seamless copper tube or threadless copper pipe conforming to the chemical and physical properties of one of the following standards issued by the American Society for Testing and Materials:

Seamless Copper Tube ANSI/ASTM B75-79

Seamless Copper Water Tube ANSI/ASTM B88-76

General Requirements for Wrought Seamless Copper and Copper-Alloy Tube ANSI/ASTM B251 M-79

Threadless Copper Pipe ANSI/ASTM B302-76

Copper Tube or threadless pipe used in sprinkler systems as specified in the above standards shall be limited to wet systems for light and ordinary hazard occupancies using sprinkler heads having 165^{o} F rating or less, and shall have minimum wall thickness capable of withstanding a working pressure of not less than 175 psig at a service temperature of 300^{o} F for both annealed and drawn tempers.

Copper Water Tube Types K and L ANSI/ASTM B88-76, and Threadless Copper Pipe Type TP, ANSI/ASTM B302-76.

Copper Pipe Type TP, ANSI/ASTM B302-76. Ferrous Piping (Welded and Seamless), ANSI/ASTM A 135-79 Specification for Electric-Resistance Welded Steel Pipe, pursuant to Board of Standards & Appeals Calendar No. 75-77-SA are acceptable.

Other approved types of pipe or tube may be used, but only those investigated and listed for this service by a nationally recognized testing and inspection agency and acceptable to the Commissioner. The use of pipe or tube other than that described above must involve consideration of many factors, e.g.,

1. Pressure rating.

2. Beam strength (hangers).
3. Corrosion (Chemical and electrolytic).
4. Resistance to failure when exposed to elevated temperatures.
5. Methods of joining (strength, permanence, fire hazard).
6. Availability of fittings (for sprinkler outlets and proper routings).
7. Toxicity.

3-1.1.5 Delete, and substitute the following:

3-1.1.5 Other types of pipe or tube may be used, but only those investigated and listed for this service by a nationally recognized testing and inspection agency acceptable to the Commissioner. The use of pipe or tube other than that described above must involve consideration of many factors, e.g.

1. Pressure rating
2. Beam strength (hangers)
3. Corrosion (chemical and electrolytic)
4. Resistance to failure when exposed to elevated temperatures
5. Methods of joining (strength, permanence, fire hazard)
6. Availability of fittings (for sprinkler outlets and proper routings)
7. Physical characteristics related to integrity during earthquakes.
8. Toxicity
9. Combustibility
10. Movement during sprinkler operation (water distribution).

3-2 Definitions. Add the following: Fire Section-See sub-article 201.0. Each floor of a sprinklered building may be considered a fire section.

Add 3-3.4.1 In altering existing sprinkler systems which contain 3/4-inch pipe, the existing 3/4-inch pipe may be retained except that extension from such 3/4-inch pipe shall be made using pipe having a minimum diameter of one-inch.

3-3.7 One and One-Half-Inch Hose Connections. Delete.

3-3.8 Hose Connections For Fire Department Use. Delete. Add the following in lieu of the above:

3-3.7 Fire Standpipe Hose Connections. Where permitted in E, F, G, H and J occupancies by Section 2-4.3, and where permitted by the Commissioner, the sprinkler systems may be connected to the distribution system of mains and risers serving the required standpipe hose connections. Connections to the common sprinkler and standpipe systems shall be valved and fitted with an approved supervised tamper switch and flow detector.

3-3.1 Delete the first sentence and add the following:

"The maximum floor area to be protected by a single riser, from a control and alarm device, on any one floor shall be as follows:"

3-4 Pipe Schedules

3-4.1.1 Delete-Add the following:

3-4.1.1 A test pipe of not less than 1-inch diameter terminating in a smooth bore corrosion resistant outlet giving a flow equivalent to one sprinkler shall be provided. This test pipe shall be provided for each system through a pipe not less than 1-inch in diameter, in the upper story, and the connection should preferably be piped from the end of the most remote branch line. The discharge should be at a point where it can be readily observed. In locations where it is not practical to terminate the test pipe outside the building, the test pipe may terminate in a drain. In this event, the test connection shall be made using an approved sight test connection containing a smooth bore corrosion resistant orifice giving a flow equivalent to one sprinkler. The test valve shall be located at an accessible point, and preferably not over seven feet above the floor. The control valve on the test connection shall be located at a point not exposed to freezing.

Add 3-4.4.1 In buildings having mezzanine floors, large platforms, or large openings between floors which cannot be closed or satisfactorily cut off, the possibility that all or most of the sprinklers might be opened by a single fire should be considered in determining the size of risers. Where occupancy and construction are exceptionally good and where there is little likelihood of a fire spreading beyond the vicinity of its origin, the size of the feed main should be based on the total number of sprinklers in the main area plus half the number in the area not cut off. A sprinkler water, curtain may be considered an exceptionable cut off for openings of less than 1000 square feet.

Add 3-4.6 Sizes for Domestic Water Piping. Where permitted by the building code, 10 or less heads, that are connected to the domestic water system shall have the piping sized in accordance with the tables herein and the domestic water line to which the sprinkler line connected thereto. Connections may be made directly to cross-connections or headers.

3-6.2.3 Delete first sentence and change to read: Each interior sectional or floor control valve shall be provided with a drain connection sized as shown in Table 3-6.2.3 so as to drain that portion of the system controlled by the sectional or floor valve.

Table 3-6.2.3

Sectional or Floor Valve Size	Minimum Size of Drain Connection
Up to 2 ½ in.	1-in.
3-in., 3 1/2-in., 4-in.	1 1/4 in.
5-in. and 6-in.	1 1/2-in.
8-in.	2-in.

Delete Section 3-7.4 and substitute the following:

3-7.4 Joints for the connection of copper tube or threadless pipe shall be brazed. Brazing filler metal classed BCuP-3, BCuP-5, BAG-2 (ANSI/AWS A5.8-89) may be used.

Add Lead free solder joints may be permitted for wet pipe systems in Light Hazard Occupancies when the temperature classification of the installed sprinklers is Ordinary or Intermediate.

3-8 Fittings

Renumber Section 3-8.1.4 to 3-8.1.6

Renumber Section 3-8.1.5 to 3-8.1.7

Add a new Section 3-8.1.4 to read as follows:

3-8.1.4 Fittings used in the assembly of copper tube shall conform to the following standards issued by the American National Standards Institute:

Bronze Flanges and Flanged Fittings
150 to 300 lb. ANSI B16.24-79

Add a new section 3-8.1.5 to read as follows:

3-8.1.5 Fittings used in the assembly of threadless copper pipe (Type TP) shall conform to the following standards:

Cast Bronze, Brazed-Joint Pressure Fittings

Dimensions MIL F-1183 J-87

Chemical and physical properties ANSI/ASTM B61-86 or ANSI/ASTM B62-86

Bronze Flanges and Flanged Fittings
150 and 300 lb. ANSI B16.24-79

3-8.6 One and One-Half-Inch Hose Connections. Delete.

3-8.7 Hose Connections for Fire Department Use. Delete.

Add the following in lieu of the above.

3-8.7 Fire Standpipe Hose Connections. Where permitted in E, F, G, H and J Occupancies by Section 2-4.3 and where permitted by the Commissioner, the sprinkler system may be connected to the distribution system of mains and risers serving the required standpipe hose connections. Connections to the common sprinkler and standpipe systems shall be valved and fitted with an approved supervised tamper switch and flow detector.

3-9 Valves

3-9.1.1 Delete-Add the following:

3-9.1.1 A test pipe of not less than 1-inch diameter terminating in a smooth bore corrosion resistant outlet giving a flow equivalent to one sprinkler shall be provided. This test pipe shall be provided for each system through a pipe not less than 1 inch in diameter in the upper story, and the connection should preferably be piped from the end of the most remote branch line. The discharge should be at a point where it can be readily observed. In locations where it is not practical to terminate the test pipe outside the building, the test pipe may terminate into a drain. In this event, the test connection shall be made using an approved sight test connection containing a smooth bore corrosion resistant orifice giving a flow equivalent to one sprinkler. The test valve shall be located at an accessible point and preferably not over seven feet above the floor. The control valve on the test connection shall be located at a point not exposed to freezing.

3-9.1.1 Add the following sentence:

An approved indicating shutoff valve may be used in lieu of an O.S.&Y. gate valve wherever referred to in these modifications except such valve shall not be part of the pressure reducing valve. The indicator shall be readily visible from the floor.

3-9.2 Valves Controlling Sprinkler Systems.

3-9.2.3 Delete exception #2.

3-9.2.5 Delete.

3-9.2.6 Delete.

3-9.2.7 Delete.

Add 3-9.2.5 Where there is one water supply connection a check valve shall be installed. Such check valve may be a swing check, an approved fire meter or an approved detector check.

Add 3-9.2.6 Where a system having only one dry-pipe valve is supplied with city water and Fire Department connection, it will be satisfactory to install the main check valve in water supply connection in a vertical position immediately inside of the building after the main indicating valve.

Add 3-9.2.7 Where either a wet or dry pipe sprinkler system is supplied by city water and a Fire Department connection and has more than one riser with O.S.&Y. gate valve in each, and the whole system is controlled by one outside post indicator valve, it will be satisfactory to install the main check valve in the water supply connection immediately inside building. If the supply is controlled by an underground gate valve with a Department of Environmental Protection standard roadway box, the main check valve in the water supply connection should be installed immediately after the O.S.&Y. gate valve inside the building.

Add 3-9.2.8 Where a wet pipe sprinkler system is supplied by city water and a Fire Department connection with only one riser, the alarm valve will be considered as a check valve and an additional check will not be required.

Add 3-9.2.9 A gate valve should be installed on each side of each check valve under conditions other than described in Paragraphs 3-9.2.6, 3-9.2.7 and 3-9.2.8. However, this shall not apply to Fire Department Siamese check valves.

Add 3-9.2.10 Where a gravity tank is located on a tower in the yard, the gate valve on the tank side of the check valve shall be of O.S.&Y. type; the other shall be either an O.S.&Y. valve or an indicator post valve. Where a gravity tank is located on a building, both gate valves shall be the O.S.&Y. type; and all fittings inside the buildings, except the drain tee fill line, and heater connections, shall be under the control of a gate valve.

Add 3-9.2.11 In a city connection serving as one source of supply the city valve in the connection may serve as one of the required gate valves. An O.S.&Y. valve or an indicator post valve should be installed on the systems (water supply) side of the check valve.

Add 3-9.2.12 A connection from public water system shall not extend into or through a building unless such connection is under the control of an outside indicator post or O.S.&Y. gate or under the control of an inside O.S.&Y. gate valve located near the outside wall of the building.

Add 3-9.2.13 When a pump, located in a combustible pump house or exposed to danger from fire or falling walls, or a tank discharges into a yard main valve, fed by another supply, either the check valve in the connection shall be located in a pit or the gate valve should be of the indicator post type, located a safe

distance outside of buildings.
Add 3-9.2.14 Check valves on tank or pump connections, when located underground, may be placed inside of buildings and at a safe distance from the tank riser or pump, except in cases where the building is entirely of one fire area, when it is ordinarily considered satisfactory to locate the check valve over-head in the lowest level.
Add 3-9.2.15 All gate valves controlling water supplied for sprinklers shall be located where readily accessible and when necessary, permanent ladders, clamped treads on risers, chains and wheels, or other accepted means should be provided.
Add 3-9.2.16 Section Valves in Underground Fire Mains. Large yard systems shall have section controlling valves at appropriate points, in order to permit sectionalizing the system in the event of a break, or for the making of repairs or extension (See Standard for Outside Protection, ANSI/NFiPA No. 24-87).
Add 3-9.2.17 Floor Valves. Floor control valves shall be provided where required or in special cases where area or height, or number of tenants is excessive, both in manufacturing and mercantile buildings, or where contents are more than ordinarily susceptible to damage. Floor valves shall be located where they are readily accessible. They are to be O.S.&Y. or indicating type located ahead of the inlet of any pressure reducing valve.
Add 3-9.2.18 Indicator Posts for Gate Valves.
Add 3-9.2.18.1 Outside Control shall be provided.
Add 3-9.2.18.2 Where sprinklers are supplied from a yard main, an approved outside indicator post gate valve shall be placed in the connecting pipe at a safe distance from the building.
Add 3-9.2.18.3 Indicator post valves should be located not less than 40 feet from buildings; but where necessary to place a valve close to a building, it should be located at a blank part of the wall.
Add 3-9.2.18.4 When a building has no basement, and an outside post indicator control cannot be furnished, a short post indicator may be installed in a horizontal position in riser with handwheel projecting outside of wall.
Add 3-9.2.19 Pits for Underground Valves. Pits for underground valves except those located at the base of a tank riser, are described in the Standard for Outside Protection (ANSI/NFiPA No. 24-87). For pits protecting valves located at the base of a tank riser, refer to RS-10.
Add 3-9.2.20 Securing of Valves. All gate valves in supply pipes to automatic sprinklers, whether or not of indicator or post pattern, shall be sealed open in a satisfactory manner.
Add 3-9.2.21 Valves controlling sprinkler supplied from the standpipe system shall be approved for standpipe service in the pressure zone in which it is installed. They shall be O.S.&Y. or indicating valves and shall be located ahead of the inlet of any pressure reducing valve installed.
3-9.3.4. Delete.
3-11.5.2 Add to first sentence; and subject to the Commissioner's approval.
3-12.3.2 Delete this Section, and substitute the following:
Dry Pipe Valves. The alarm apparatus for a dry-pipe system shall consist of approved low and high air pressure alarm attachments to the dry-pipe valve. When a dry-pipe valve is located on the system side of an alarm valve, the actuating device of the alarms for the dry-pipe valve may be connected to the alarms on the wet-pipe system.
Delete Section 3-12.4 and the following, in lieu of the above:
3-12.4 Joints for the connection of copper tube or threadless pipe shall be brazed. Brazing filler metal classes BCuP-3, BCuP-5, BAg-2 (ANSI/AWS A5.8-77) may be used.
3-12.6 Delete this section and add; refer to RS 17-3
3-12.7 Delete this section and add; refer to RS 17-3
3-12.8 Delete this section, and substitute the following:
Identification Signs. Identification signs shall be provided for outside alarm devices. The sign should be located near the device in a conspicuous position and shall be worded as follows: **"SPRINKLER FIRE ALARM-WHEN BELL RINGS CALL FIRE DEPARTMENT OR POLICE".**
Add 3-12.9 Drains
Add 3-12.9.1 Where vents are necessary for satisfactory electric alarm switch operations, such vents should be properly piped to a drain.
Add 3-12.9.2 Drains from alarm devices shall be so arranged that there will be no danger of freezing, and so that there will be no overflowing at the alarm apparatus, at domestic connections or elsewhere with the sprinkler drains wide open and under pressure.
Add 3-12.9.3 Drain from retarding chamber and electric alarm switch should preferably discharge through an open cone and be run separate from main system drains to a safe and visible point of free discharge or to sewer or ground drain. Drain from water-motor-operated alarm device may run separately to sewer or ground drain or may be connected to drain from retarding chamber at a point between such sewer and a check valve on this drain, a union or plug being inserted in the drain from the alarm device to permit inspection. Where checks are used they shall be so located as to have the equivalent of at least a four-foot head and shall not be installed in a vertical position.
Add 3-12.9.4 Where drains are conveyed to a sewer, a proper trap shall be provided.
Add 3-12.9.5 Where it is necessary to drain alarm valves outside the wall, an open discharge cone shall be provided inside to break the pipe line so that cold air will not conduct directly into the retarding chamber. Alternately, all drains shall have at least 4 feet of pipe beyond the valves, in a warm area.

3-13 Fittings
Renumber Section 3-13.1.4 to 3-13.1.6
Renumber Section 3-13.1.5 to 3-13.1.7
Add a new Section 3-13.1.4 to read as follows:
3-13.1.4 Fittings used in the assembly of copper tube shall conform to the following standards issued by the American National Standards Institute:

Bronze Flanges and Flanged Fittings
150 to 300 lb. ANSI B16.24-79
Add a new section 3-13.1.5 to read as follows:
3-13.1.5 Fittings used in the assembly of threadless copper pipe (Type TP) shall conform to the following standards:
Cast Bronze, Brazed-Joint Pressure Fittings
Dimensions MIL F-1183 G-78
Chemical and physical properties ANSI/ASTM B61-80 or ANSI/ASTM B62-80
Bronze Flanges and Flanged Fittings
150 to 300 lb. ANSI B16.24-79

3-14 Valves.
123-14.1.1 Add the following sentence:
"An approved indicating valve may be used in lieu of an O.S.&Y. gate valve wherever referred to in these modifications except where such valve is to be installed in conjunction with a pressure reducing valve."
3-14.2 Valves Controlling Sprinkler Systems.
Amend 3-14.2.1 Each system shall be provided with a listed indicating valve so located as to control all sources of water supply except fire department connections.
3-14.2.5 Delete.
3-14.2.6 Delete.
3-14.2.7 Delete.
Add 3-14.2.5 Where there is one water supply connection, a check valve shall be installed. Such check valve may be a swing check, an approved fire meter or an approved detector check.
Add 3-14.2.6 Where a system having only one dry-pipe valve is supplied with city water and Fire Department connection, it will be satisfactory to install the main check valve in water supply connection in a vertical position immediately inside of the building after the main indicating valve.
Add 3-14.2.7 Where either a wet or dry pipe sprinkler system is supplied by city water and Fire Department connection and has more than one riser with O.S.&Y. gate valve in each and the whole system is controlled by one outside post indicator valve, it will be satisfactory to install the main check valve in the water supply connection immediately inside building. If the supply is controlled by an underground gate valve with an approved roadway box, the main check valve in the water supply connection should be installed immediately after the O.S.&Y. gate valve inside the building.
Add 3-14.2.8 Where a wet pipe sprinkler system is supplied by city water and a Fire Department connection with only one riser, the alarm valve will be considered as a check valve and an additional check will not be required.
Add 3-14.2.9 A gate valve should be installed on each side of each check valve under conditions other than described in Paragraphs 3-14.2.6, 3-14.2.7, 3-14.2.8. However, this shall not apply to Fire Department Siamese check valves.
Add 3-14.2.10 Where a gravity tank is located on a tower in the yard, the gate valve on the tank side of the check valve shall be of O.S.&Y. type, the other shall be either an O.S.&Y. valve or an indicator post valve. Where a gravity tank is located on a building both gate valves shall be the O.S.&Y. type; and all fittings inside the buildings, except the drain ice fill line, and heater connections, shall be under the control of a gate valve.
Add 3-14.2.11 In a city connection serving as one source of supply the city valve in the connection may serve as one of the required gate valves. An O.S.&Y. valve or an indicator post valve should be installed on the systems (water supply) side of the check valve.
Add 3-14.2.12 A connection from public water system shall not extend into or through a building unless such connection is under the control of an outside indicator post or O.S.&Y. gate valve or under the control of an inside O.S.&Y. gate valve located near the outside wall of the building.
Add 3-14.2.13 When a pump, located in a combustible pump house or exposed to danger from fire or falling walls, or a tank discharges into a yard main fed by another supply, either the check valve in the connection shall be located in a pit or the gate should be of the indicator post type, located a safe distance outside of buildings.
Add 3-14.2.14 Check valves on tank or pump connections, when located underground, may be placed inside of buildings and at a safe distance from the tank riser or pump, except in cases where the building is entirely of one fire area, when it is ordinarily considered satisfactory to locate the check valve over-head in the lowest level.
Add 3-14.2.15 All gate valves controlling water supplied for sprinklers shall be located where readily accessible and when necessary, permanent ladders, clamped treads on risers, chains and wheels, or other accepted means should be provided.
Add 3-14.2.16 Section Valves in Underground Fire Mains. Large yard systems shall have section controlling valves at appropriate points in order to permit sectionalizing the system in the event of a break, or for the making of repairs or extension. (See Standard for Outside Protection, ANSI/NFiPA No. 24)
Add 3-14.2.17 Floor Valves. Floor control valves shall be provided where required or in special cases where area or height, or number of tenants is excessive, both in manufacturing and mercantile buildings, or where contents are more than ordinarily susceptible to damage. Floor valves shall be located where they are readily accessible. They are to be O.S.&Y. type located ahead of the inlet of any pressure reducing valve.
Add 3-14.2.18 Indicator Posts for Gate Valves.
Add 3-14.2.18.1 Outside control shall be provided.
Add 3-14.2.18.2 Where sprinklers are supplied from a yard main, an approved outside indicator post gate valve shall be placed in the connecting pipe at a safe distance from the building.
Add 3-14.2.18.3 Indicator post valves should be located not less than 40 feet from buildings; but where necessary to place a valve close to a building, it should

be located at a blank part of the wall.
Add 3-14.2.18.4 When a building has no basement and an outside post indicator control cannot be furnished, a short post indicator may be installed in a horizontal position in riser with handwheel projecting outside of wall.
Add 3-14.2.19 Pits for Underground Valves. Pits for underground valves except those located at the base of a tank riser are described in the Standard for Outside Protection (ANSI/NFiPA No. 24). For pits protecting valves located at the base of a tank riser, refer to the Standard for Water Tanks for Private Fire Protection (ANSI/NFiPA No. 22).
Add 3-14.2.20 Securing of Valves. All gate valves in supply pipes to automatic sprinklers, including indicator or post pattern, shall be sealed open in a satisfactory manner.
Add 3-14.2.21 Valves controlling sprinkler supplied from the standpipe system shall be approved for standpipe service in the pressure zone in which it is installed. They shall be O.S.&Y. valves and shall be located ahead of the inlet of any pressure reducing valve installed.

3-15 Hangers
3-15.1.10 Delete this section and substitute the following:
3-15.1.10 Maximum Distance Between Hangers. With Steel Pipe as specified in this chapter, the maximum distance between hangers shall not exceed 12 feet for 1 and 1 1/4 inch sizes nor 15 feet for sizes 1 1/2 inch and larger except as provided in 3-15.6. See Figure A-3-15.1.10.
With copper tube or pipe as specified in this chapter, maximum spacing between hangers shall not exceed the distance indicated on Figure A-3-15.5.4 with steel band and ring hangers confirming therewith.

HANGER SPACE FOR COPPER PIPE AND COPPER TUBE-HORIZONTAL RUN HORIZONTAL RUN HANGER SPACING

Tube Size	Spacing
3/4" to 1"	5-8 feet
1 1/4" and 1 1/2"	8-10 feet
2" and 3"	10-12 feet
4"-8"	12-15 feet

SIZING OF SPS STEEL STRAP AND RING HANGERS FOR USE WITH COPPER TUBE SPS Steel Strap or Ring Hanger**

Copper Tube Size inches	Nominal Outside Diameter, inches	Size, inches	Minimum Inside Diameter, inches
1/4	0.875	1/2 or 3/4	1.050 or 1.315
1	1.125	1/4 or 1	1.315
1 /14	1.375	1	1.660
1 1/2	1.625	1 1/4	0.840
2	2.125	2	2.375

*Above 2-inch, use the same SPS hanger size as the tube size.
**Standard Pipe Size Figure A-3-15.5.4.

3-17.3.2 Delete this Section, and substitute the following: Dry Pipe Valves. The alarm apparatus for a dry-pipe system shall consist of approved flow and low and high air alarm attachments to the dry-pipe valve. When a dry-pipe valve is located on the system side of an alarm valve, the actuating device of the alarms for the dry-pipe valve may be connected to the alarms on the wet-pipe system.
3-17.7 Delete this Section, and substitute the following: Identification Signs. It is essential to provide identification signs for outside alarm devices. The sign should be located near the device in a conspicuous position and shall be worded as follows: **"SPRINKLER FIRE ALARM-WHEN BELL RINGS CALL FIRE DEPARTMENT OR POLICE."**
Add 3-17.8 Drains.
Add 3-17.8.1 Where vents are necessary for satisfactory electric alarm switch operation, such vents should be properly piped to a drain.
Add 3-17.8.2 Drains from alarm devices shall be so arranged that there will be no danger of freezing and so that there will be no overflowing at the alarm apparatus, at domestic connections or elsewhere with the sprinkler drains wide open and under pressure.
Add 3-17.8.3 Drain from retarding chamber and electric alarm switch should preferably discharge through an open cone and be run separate from main system drains to a safe and visible point of free discharge or to sewer or ground drain. Drain from water-motor-operated alarm device may run separately to sewer or ground drain or may be connected to drain from retarding chamber at a point between such sewer and a check valve on this drain, a union or plug being inserted in the drain from the alarm device to permit inspection. Where checks are used they shall be so located as to have the equivalent of at least a four-foot head and shall not be installed in a vertical position.
Add 3-17.8.4 Where drains are conveyed to a sewer, a proper trap shall be provided.
Add 3-17.8.5 Where necessary to drain alarm valves outside the wall, an open discharge cone shall be provided inside to break the pipe line so that cold will not be conducted directly into the retarding chamber. Alternately, all drains shall have at least four foot of pipe beyond the valves in a warm area.

CHAPTER 4-Spacing, Location and Position of Sprinklers
4-1.2 Delete.
4-2.2.1 Delete the first sentence and add the following: "The maximum floor area to be protected by a single riser, from a control and alarm device, on any one floor shall be as follows:"
4-4.7.1 Delete
4-4.7.2.1 Delete
4-4.7.2.2 Delete
4-4.7.2.3 Add to last sentence:
when required by other sections of this code
Delete the Exception
4-4.7.2.4 Delete
4-4.8 Add the following:
Sprinklers shall be provided in chute vestibules on all floors, if no vestibule exists, then sprinklers shall be provided above chute doors and shall be located no

more than 1-foot horizontally from face of chute door.
All building service chute sprinkler systems shall be provided with a local water flow and valve supervisory alarm and be connected to an authorized fire alarm central office.
4-4.8.1 Delete.
4-4.8.2 Delete.
4-4.8.2.4 Delete.
Add 4-4.17.4 Safe deposits or other vaults of fire-resistive construction will not require sprinkler protection when used for the storage of records, files and other documents when stored in metal cabinets.
4-4.8.1 Delete and substitute the following:
In cooking areas protected by automatic sprinklers, sprinklers shall be provided to protect commercial-type cooking equipment and ventilation systems that are designed to carry away grease laden vapors unless otherwise protected (see RS 13-2 and RS 13-3). Sprinklers shall be so located as to give complete coverage of cooking surfaces, within exhaust ducts, within exhaust hood plenum chamber, and under filters, if any.
Add 4-4.16.4 Safe deposits or other vaults of less than 1,000 cubic feet in size of fire-resistive construction may not require sprinkler protection when used for the storage of records, files and other documents, when stored in metal cabinets. These vaults shall be equipped with either a smoke or heat detection system connected to an authorized fire alarm central office.
4-4.17.1 Delete, and substitute the following:
In cooking areas protected by automatic sprinklers, sprinklers shall be provided to protect commercial-type cooking equipment and ventilation systems that are designed to carry away grease laden vapors unless otherwise protected (see RS 13-2 and RS 13-3). Sprinklers shall be so located as to give complete coverage of cooking surfaces, within exhaust ducts, within exhaust hood plenum chamber, and under filters, if any.
4-4.19.2 Add the following:
and provided that hard wired smoke detectors are provided in the sleeping rooms.

* * *

*Add section 4-4.19.4 to follow section 4-4.19.3 as follows:

* * *

*4-4.19.4 In buildings and spaces classified in Occupancy Groups J-2 and J-3, sprinklers may be omitted from bathrooms, water closet compartments, general toilet rooms and shower rooms.
Add section 4-4.19.5 to follow section 4-4.19.4 as follows:
*4-4.19.5 In buildings and spaces classified in Occupancy Groups J-2 and J-3, sprinklers may be omitted from clothes closets, linen closets and pantries.

* * *

DOB 6-25-99

CHAPTER 5-Types of Systems
5-3.4 Delete and substitute the following:
Location and Spacing of Fire Detection Devices. Spacing of fire detection devices shall be in accordance with their listing by nationally recognized testing laboratories or in accordance with manufacturer's specifications, subject to the approval of the Commissioner of Buildings.
5-3.5 Delete and substitute the following:
Location and Spacing of Fire Detection Devices. Spacing of fire detection devices shall be in accordance with their listing by a nationally recognized testing laboratory or in accordance with the manufacturer's specifications, subject to the approval of the Commissioner of Buildings.
Fig. 5-5.4 Delete and substitute the following:
Fig. 5-5.4 See detail of Typical Installation.

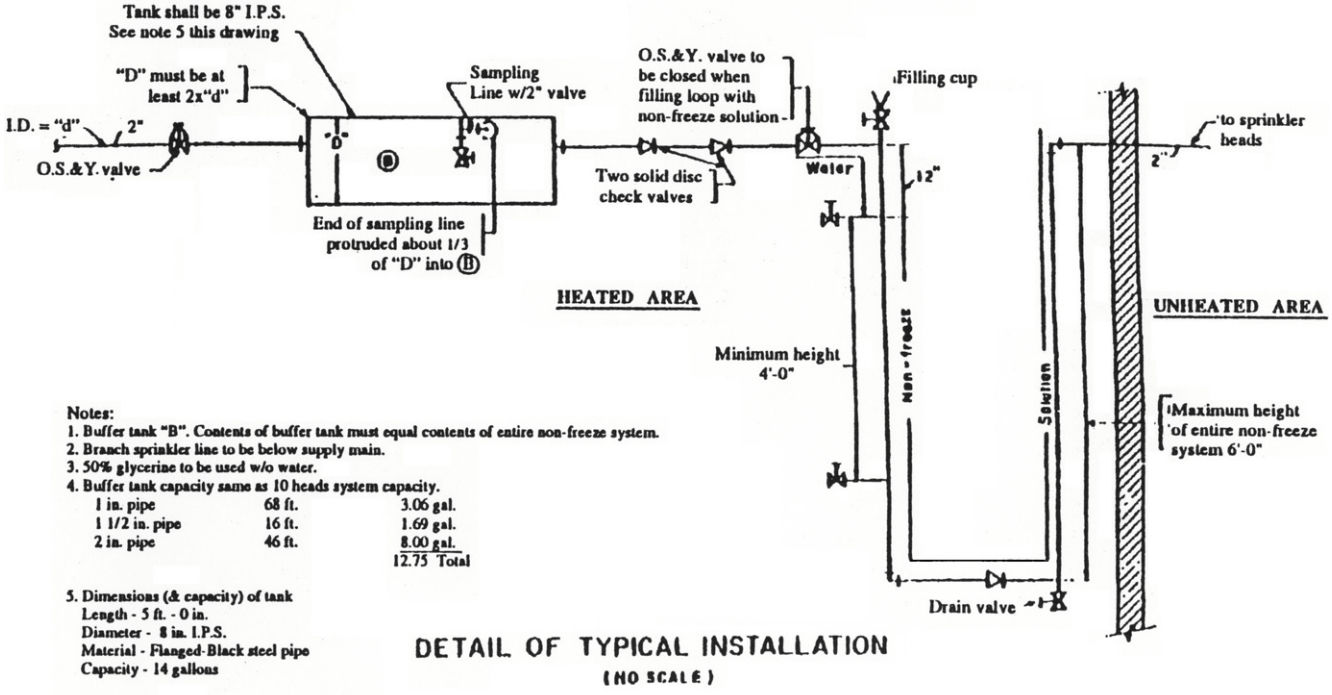

Figure 5-5.4 Arrangement of Supply Piping and Valves

CHAPTER 6-Outside Sprinklers for Protection Against Exposure Fires

6-1 Water Supply and Control. Delete
6-2 System Components. Delete

CHAPTER 7-Hydraulically Designed Sprinkler Systems
7-1.1.2 Delete and substitute the following:
7-1.1.2 The design basis for such a system supersedes the rules in the sprinkler standard governing pipe schedules except that all systems continue to be limited by area, and pipe shall be not less than 1 inch nominal for ferrous piping and 3/4 inch nominal for copper tube and threadless copper pipe. The size of the pipe, number of sprinklers per branch line and number of branch lines per cross main are otherwise limited only by the available water supply.

However, sprinkler spacing and all other rules covered in this and other applicable standards shall be observed.
7-2.1 Delete and substitute the following:
Design criteria and calculations shall be submitted to the Commissioner along with the plans to obtain the necessary approval.
Table 7-4.3.1.4 Delete under column Pipe or Tube, "Plastic (listed)-All "and under C Value, Delete" 150"

CHAPTER 8-Pipe Schedule Systems
8-1 Delete and substitute the following:
The provisions of this Chapter shall apply to buildings of Class 1 construction, predominantly light hazard occupancy, and more than 100 feet high.
Add 8-1.2.1 Combined Systems Risers-Risers providing the water supply for both standpipe and sprinkler systems shall have a minimum diameter of 6-inches, however, a minimum diameter of 4-inches may be authorized in existing buildings if hydraulic calculations indicate that an adequate supply of water can be assured.
Add 8-1.2.2 When a combined riser is fed by a special service fire pump, a minimum diameter of 4-inches is required to feed fire hose stations. Riser size beyond last hose station is to be determined by hydraulic calculations.
Add 8-1.3.1 In buildings having mezzanine floors, large platforms, or large openings between floors which cannot be closed or satisfactorily cut off, the possibility that all or most of the sprinklers might be opened by a single fire should be considered in determining the size of risers. Where occupancy and construction are exceptionally good, and where there is a little likelihood of a fire spreading beyond the vicinity of its origin, the size of the feed main may be based on the total number of sprinklers in the main area plus half the number in the secondary area. A sprinkler water curtain may be considered an acceptable cut off for openings of less than 1000 square feet.
Add 8-1.4 Sizes for Domestic Water Piping. Where permitted by the building code, 10 or less heads, that are connected to the domestic water system shall have the piping sized in accordance with the tables herein, and the domestic water line to which the sprinkler piping is connected shall be at least the size of the sprinkler line connected thereto. Connections may be made directly to cross-connections or headers.
8-3.2 Delete.
8-4.2 Add the following to the first sentence: "or as modified by Table 2-2.1B."
8-4.3 Delete.
8-4.4 Add the following:
8-4.4 Combined Systems. Risers providing the water supply for both standpipe and sprinkler systems shall have a minimum diameter of 6 inches: provided, however, a minimum diameter of 4 inches may be authorized in existing buildings if hydraulic calculations indicate that an adequate supply of water can be assured.

Chapter 10-Delete
Appendix A, B and C and D shall be considered part of this Reference Standard, subject to the following modifications:

A-1-7.2.1 Delete.
A-1-7.3.1 Delete.
A-1-7.3.2 Delete.
A-1-7.3.3 Delete.
A-1-7.4 Delete and substitute the following:
A-1-7.4 New installations protecting extra hazard occupancies may be hydraulically designed or pipe schedule systems may be utilized, provided that a sufficient volume of water is supplied, and the water pressure is adequate. When the pipe schedule is used hydraulic calculations shall be done to prove that adequate water volume and water pressure are available.
A-1-7.4.1 Delete.
A-1-8.1.2 Delete and substitute the following:
A-1-8.1.2 Used equipment shall not be permitted unless completely overhauled by the manufacturers; and shall be subject to the approval of the Commissioner.
A-1-9 Delete.
A-2-2.3.3 Delete.
A-2-6.3 Amend sub-section titled "Location of Pressure Tanks" to read as follows:
Pressure tanks shall be located at or above the top level of sprinklers.
A-2-7.1 Delete.
A-2-7.2 Delete.
A-2-7.3 Delete.
A-3-1.1.5 Delete.
A-3-3.2 Delete.
A-3-3.7 Delete.
A-3-7.4 Delete and substitute the following:
A-3-7.4 The fire hazard of the brazing and welding process should be suitably safeguarded. Fire guards having Certificates of Fitness from the Fire

Department shall be provided as required, and portable fire fighting equipment shall be provided.
Add new sentence:

Self-cleaning fluxes shall not be used. Continued corrosive action after the soldering process is completed could result in leaks from the seats of sprinklers.

A-3-10.2 In second paragraph, delete the words "copper tube" and substitute "brass piping or equivalent."

A-3-12.4 Delete and substitute following:

A-3-12.4 The fire hazard of the brazing and welding process should be suitably safeguarded. Fire guards having Certificates of Fitness from the Fire Department shall be provided as required and portable fire fighting equipment shall be provided.

A-4-4.4.4 Add to end of first sentence:
Subject to the approval of the Commissioner.

A-5-3.3 Delete paragraph(b) and add:
(b) The dry-pipe valve should be adequately pressurized to conform to manufacturer's design and available water pressure.

B-4-2.4.6 Delete.

B-7 Delete.

Appendix C Referenced Publications Delete
**** 310-90 BCR; 633-83 BCR***

*REFERENCE STANDARD RS 17-2A
STANDARD FOR THE INSTALLATION OF SPRINKLER SYSTEMS IN RESIDENTIAL OCCUPANCIES UP TO AND INCLUDING SIX STORIES IN HEIGHT

ANSI/NFPA No. 13R-1994 - Standard for the Installation of Sprinkler Systems in Residential Occupancies up to and Including Four Stories in Height.
Modifications - The provisions of NFPA No. 13R-1994 shall be subject to the following modifications. The section and paragraph numbers are from that standard.

Preface
Change NFPA 72, *National Fire Alarm Code* to Section 27-979 of the Administrative Code.

Chapter 1 - General Information
Section 1-1 – Change four stories to six stories.
Section 1-3 – The definition of Multipurpose Piping shall be deleted.
Section 1-3 – The definition of Residential Occupancies shall be deleted. The definition of such use as stated in Title 27, Chapter 1, subchapter 3 of the Building Code shall be used.
Section 1-5.2 – Delete and substitute the following:
Section 1-5.2 - Other types of pipe or tube may be used, but only those investigated and listed for this service by a nationally recognized testing and inspection agency in accordance with Underwriters Laboratory Standard 1821 and 1887. The use of pipe or tube other than that described above must involve consideration of many factors, e.g.
(a) Pressure rating
(b) Beam strength (hangers)
(c) Corrosion (chemical and electrolytic)
(d) Resistance to failure when exposed to elevated temperatures
(e) Methods of joining (strength, permanence, fire hazard)
(f) Availability of fittings (for sprinkler outlets and proper routings.)
(g) Physical characteristics related to integrity during earthquakes
(h) Toxicity
(i) Combustibility
(j) Movement during sprinkler operation (water distribution).
Nonmetallic pipe and tube shall comply with the portions of the ASTM standards specified in Table 1-5.2 that apply to fire protection service in addition to the provisions of this paragraph. Nonmetallic pipe shall only be used in wet pipe systems. Nonmetallic pipe shall be installed in accordance with the manufacturer's installation instructions, and in accordance with rules promulgated by the Commissioner of Buildings.
Table 1-5.2 Delete Special Listed Polybutylene (PB) Pipe.
Section 1-5.6 - Delete and substitute the following:
Section 1-5.6 - Joints for the connection of copper tube or threadless pipe shall be brazed. Brazing filler metal classed BCuP-5, BAG-2 (ANSI/AWS A5.8-89) or other approved methods may be used. Lead free solder joints may be permitted for wet pipe systems when the temperature classification of the installed sprinklers is Ordinary or Intermediate.
Section 1-5.7 - Delete and substitute the following:
Section 1-5.7 - Other types of fittings may be used, but only those investigated and listed for this service by a nationally recognized testing and inspection agency in accordance with Underwriters Laboratory Standard 1821 and 1887. The use of fittings other than that described above must involve consideration of many factors as described in Section 1-5.2. Nonmetallic pipe and tube fittings shall comply with the portions of the ASTM standards specified in Table 1-5.7 that apply to fire protection service in addition to the provisions of this paragraph. Nonmetallic pipe and tube fittings shall only be used in wet pipe systems. Nonmetallic pipe and tube fittings shall be installed in accordance with the manufacturer's installation instructions, and in accordance with rules promulgated by the Commissioner of Buildings.
Section 1-6.2.1 - Change NFPA 13 to RS 17-2, and add the following: "The use of antifreeze solutions other than glycerine-water in sprinkler systems using plastic pipe shall not be permitted."

Chapter 2 - Working Plans, Design, Installation, Accepted Tests and Maintenance

Section 2-1 - Delete
Section 2-1.1 - Delete
Section 2-1.1.1 - Delete
Section 2-1.1.2 – Delete
Section 2-1.2 - Delete
Section 2-1.2.1 - Delete
Figure 2-1.2.1 - Delete
Section 2-1.2.2 – Delete
Section 2-1.3 – Delete
Section 2-1.3.1 – Delete
Section 2-1.3.1.1 - Delete
Section 2-1.3.1.2 - Delete
Section 2-1.3.1.3 - Delete
Section 2-1.3.2 - Delete
Section 2-3.2 - Add subparagraph (e) as follows:

(e) A common supply main to the building, serving both sprinklers and domestic uses, may be used if provision is made to prevent flow on the domestic water system upon operation of sprinklers, and closure of the main sprinkler control valve, i.e., the house control valve, will shut off the domestic water supply.

Section 2-3.3 - Delete
Section 2-3.3.1 - Delete
Section 2-3.3.2 - Delete
Section 2-4.1.1 - Delete the "exception"
Renumber Sections 2-4.1.2 and 2-4.1.3 to be as follows:
Section 2-4.1.2 to be 2-4.1.3
Section 2-4.1.3 to be 2-4.1.4
Add new Section 2-4.1.2 to read as follows:
Section 2-4.1.2 - Except for the meter set controlling combined domestic water and fire sprinkler systems, sectional control valves and other valves if provided in supply pipes to sprinklers shall be locked open and supervised open by one of the following methods:
(a) Central station, proprietary or remote station signaling service, or
(b) Local signaling service that will cause the sounding of an audible signal at a constantly attended point.
Exception- Underground gate valves with roadway boxes need not be supervised.
Section 2-4.2 - Delete and substitute as follows:
Section 2-4.2 - Except in buildings classified in occupancy group J-1, at least one 3 in. (76 mm) single inlet fire department connection shall be provided and located in accordance with Section 27-940 of the Building Code. Buildings classified in occupancy group J-1 shall be provided with siamese connections in accordance with RS 17-2.
Section 2-6 – *Exception No. 1:* – Delete and substitute the following: *Sprinklers are not required in bathrooms, water closet compartments, general rooms and shower rooms.*
Section 2-6 – *Exception No. 2:* – Delete and substitute the following: *Sprinklers are not required in clothes closets, linen closets and pantries.*
Section 2-6 – At the end of the section add the following:
Location of sprinklers installed in buildings classified in occupancy group J-1 shall be in accordance with the requirements of RS 17-2.
Section 2-7 – Delete and substitute the following:
Section 2-7 – The owner is responsible for the condition of a sprinkler system and shall properly maintain the sprinkler system in accordance with the Fire Department's rules and regulations.

Chapter 3 – Referenced Publications
Delete in its entirety.
Appendix A – Explanatory Material
A-1-1, first paragraph, - Change four to six.
A-1-5.2 – Delete
A-1-5.7 – Delete
A-2-1.3.2 – Delete
A-2-3.3.1 - Delete
Figure A-2-3.2(a), (b) and (c) Delete
Appendix B – Referenced Publications
Delete in its entirety.
NOTE: Subjects that are not covered under this reference standard shall be in accordance with Reference Standard 17-2.
DOB 6-25-99

*REFERENCE STANDARD RS 17-2B
STANDARD FOR THE INSTALLATION OF SPRINKLER SYSTEMS IN ONE- AND TWO-FAMILY DWELLINGS AND MANUFACTURED HOMES

ANSI/NFPA No. 13D-1994 – Standard for the Installation of Sprinkler Systems in One-and Two-Family Dwellings and Manufactured Homes.
Modifications – The provisions of NFPA No. 13D-1994 shall be subject to the following modifications. The section and paragraph numbers are from that standard.

Preface
Change NFPA 72, *National Fire Alarm Code* to Section 27-979 of the Administrative Code.

Chapter 1 – General Information
Section 1-3 –Delete the definition of Multi-purpose Piping System.
Section 1-3 –Delete the definition of Pre-engineered System.
Section 1-5.2 – Revise the exception to read: Listing may be waived for tanks and pumps.
Section 1-5.3 – Delete
Section 1-5.4 – Delete and substitute with the following:
Section 1-5.4 – Testing of a system can be accomplished by pressurizing the system 50 pounds (3.5 bar) above the normal system operating pressure and checking visually for leakage at each joint or coupling.
Fire Department connections are not required for systems covered by this standard, but may be installed

at the discretion of the owner. In these cases, hydrostatic tests in accordance with Reference Standard RS 17-2 are necessary.
Dry systems should also be tested by placing the system under 40 pounds (2.8 bar) air pressure. Any leak that results in a drop in system pressure greater than 2 psi (0.14 bar) in 24 hours should be corrected. Check for leaks using soapy water brushed on each joint or coupling. Leaks will be shown by the presence of bubbles. This test should be made prior to concealing of piping.

Chapter 2 – Water Supply
Section 2-2 – Add subparagraph (e) as follows:
(e) A common supply main to the building serving both sprinkler and domestic uses may be used if provision is made to prevent flow on the domestic water system upon operation of sprinklers, and closure of the main sprinkler control valve, i.e., house control valve, will shut off the domestic water supply.
Section 2-3 - Delete

Chapter 3 - System Components
Section 3-1.1 - Delete the exceptions.
Add new Section 3-1.5 to read as follows:
Section 3-1.5 - Except for the meter set controlling combined domestic water and fire sprinkler systems, sectional control valves and other valves if provided in supply pipes to sprinklers shall be locked open and supervised open by one of the following methods:
(a) Central station, proprietary or remote station signaling service, or
(b) Local signaling service that will cause the sounding of an audible signal.
Exception - Underground gate valves with roadway boxes need not be supervised.
Section 3-3.2 - Delete and substitute the following:
Section 3-3.2 - Other types of pipe or tubes may be used, but only those investigated and listed for this service by a nationally recognized testing and inspection agency in accordance with Underwriters Laboratory Standard 1821 and 1887. The use of pipe or tube other than that described above must involve consideration of many factors, e.g.,
(a) Pressure rating
(b) Beam strength (hangers)
(c) Corrosion (chemical and electrolytic)
(d) Resistance to failure when exposed to elevated temperatures
(e) Methods of joining (strength, permanence, fire hazard)
(f) Availability of fittings (for sprinkler outlets and proper routings)
(g) Physical characteristics related to integrity during earthquakes
(h) Toxicity
(i) Combustibility
(j) Movement during sprinkler operation (water distribution)
Nonmetallic pipe shall comply with the portions of the ASTM standards specified in Table 3-3.2 that apply to fire protection service in addition to the provisions of this paragraph. Nonmetallic pipe shall only be used in wet pipe systems. Nonmetallic pipe shall be installed in accordance with the manufacturer's installation instructions, and in accordance with rules promulgated by the Commissioner of Buildings.
Table 3-3.2 - Delete Specification for Special Listed Polybutylene (PB) Pipe and ASTM D3309.
Section 3-3.6 - Delete and substitute the following:
Section 3-3.6 - Joints for the connection of copper tube or threadless pipe shall be brazed. Brazing filler metal classed BCuP-5, BAG-2 (ANSI/AWS A5.8-89) or other approved methods may be used. Lead free solder joints may be permitted for wet pipe systems when the temperature classification of the installed sprinklers is Ordinary or Intermediate.
Section 3-3.7 - Delete and substitute the following:
Section 3-3.7 - Other types of fittings may be used, but only those investigated and listed for this service by a nationally recognized testing and inspection agency in accordance with Underwriters Laboratory Standard 1821 and 1887. The use of fittings other than that described above must involve consideration of many factors as described in Section 3-3.2. Nonmetallic pipe fittings shall comply with the portions of the ASTM standards specified in Table 3-3.7 that apply to fire protection service in addition to the provisions of this paragraph. Nonmetallic pipe fittings shall only be used in wet pipe systems. Nonmetallic pipe fittings shall be installed in accordance with the manufacturer's installation instructions, and in accordance with rules promulgated by the Commissioner of Buildings.
Section 3-6 – In the *Exception*, change *NFPA 72, National Fire Alarm Code* to *Section 27-979 of the Administrative Code.*

Chapter 4 - System Design
Section 4-3.3.3.1 - Add "The use of antifreeze solutions other than glycerine-water in sprinkler systems using plastic pipe shall not be permitted."
Section 4-3.3.4 shall be modified to read as follows:
Section 4-3.3.4 - Arrangement of supply piping and valves. - All permitted antifreeze solutions shall be installed in accordance with RS 17-2.
Figure 4-3.3.4 - Delete and substitute with:
Figure 5-5.4 - "Detail of Typical Installation" of Reference Standard 17-2.
Section 4-4.1 - Exception No. 1 - Delete NFPA 13, Standard for the installation of sprinkler systems and revise to read "Reference Standard 17-2."
Section 4-4.2 - Revise to read as follows:
Section 4-4.2 - Minimum Pipe Size - Minimum pipe size including copper and any other acceptable piping shall be 3/4 in.(19 mm).
Section 4-4.3 - Delete the exception.

Section 4-6 shall be modified to read as follows: "Sprinklers shall be installed in all areas with the following exceptions:
Exception No. 1. Sprinklers are not required in attics not provided with floors.
Exception No. 2 Sprinklers are not required in clothes closets, linen closets and pantries.
Exception No. 3. Sprinklers are not required in bathrooms, water closet compartments, general toilet rooms and shower rooms.
Exception No. 4. Sprinklers are not required in garages, provided that at least one sprinkler head is located within 3 feet (914mm) of any communicating opening between the garage and the dwelling.
Exception No. 5. Sprinklers are not required in open attached porches, carports and similar structures."

Chapter 5 - Limited Area Dwellings
Delete in its entirety.

Chapter 6 - Referenced Publications
Delete in its entirety.

Appendix A - Explanatory Material
Section A-1-1 - Delete third sentence of first paragraph and revise second sentence to read:
"Residential portions of any other buildings shall be protected with residential sprinklers in accordance with the New York City Building Code."
Revise last paragraph to read "For protection of multiple dwellings, refer to the New York City Building Code."
Section A-1-2 – Delete
Section A-1-3 - Revise to read "System control valves shall be the indicating type and shall be approved/accepted type."
Section A-1.4 – Delete
Section A-1-5.4 – Delete
Section A-2.2 - Delete entire section including all related diagrams, except for the following:
"When a tank is used for both domestic and fire protection purposes, a low water alarm activated when the water level falls below 110 percent of the minimum quantity specified in Section 2-1 should be provided".
Section A-2.3 - Delete all related diagrams.
Section A-2.3(a) – Delete
Section A-3-3.1 – Delete
Section A-3-3.2 - Delete
Section A-3-3.7 – Delete
Section A-3-5.6.1 - Revise to read as follows:
Section A-3-5.6.1 - Decorative painting of residential sprinklers is not to be confused with the temperature identification colors as referenced in Reference Standard 17-2.
Section A-5-5 – Delete
Table A-1.2(a) and (b) – Delete

Appendix B - Referenced Publications
Delete in its entirety.

**** DOB 6-25-99***

****REFERENCE STANDARD RS 17-3**
Standards for the Installation of Fire, Sprinkler, Standpipe, Smoke Detection, Oxygen, Nitrous Oxide, and other Alarm and Extinguishing Systems
*"Installation, source of energy, wiring and other requirements shall comply with the applicable provisions of Sections one through fourteen, inclusive; provided, however, that fire protection pre-signal systems for buildings in Occupancy Group G, of Construction Group 1-A (fireproof) may comply with the provisions, of Section 15 in lieu of sections 1 through 14, when such pre-signal systems are installed or existing systems are modified to provide fire alarm signal service under adverse malicious false alarm conditions, and when permitted by the Fire Commissioner."
****515-75 BCR***

1. A. SOURCES OF ELECTRICAL POWER
Two sources of electrical power shall be provided as follows:
(1) The primary source shall be generated electric power not exceeding 277/480 volts, supplied by utility company power, or isolated plant.
(2) The secondary source shall be an emergency power system (as per 27-396), emergency generator and/or battery power.
One source of power shall be connected to the system at all times. The primary and secondary power sources shall be so arranged and controlled by automatic transfer switches and/or circuitry that when the primary source of power fails, the secondary source will be connected automatically to the fire alarm signal system. Intermediary devices between the system supply and the source of power, other than fused disconnect switches, transformers, fused cutouts and automatic transfer switches, are prohibited. Such disconnect switches, cutouts, transformers and automatic transfer switches shall supply only the fire alarm system and other systems covered by this reference standard. When the utility company requires the installation of metering current transformers, the system supply shall be connected on the load side of the current transformers. All installations shall comply with the applicable sections of the New York City Electrical Code." The primary source of power and the secondary source (if emergency power system or generator) shall each be provided with a means of disconnect from the fire alarm system. For buildings supplied at 120/208 volts, each disconnect shall consist of a fused cutout panel, utilizing cartridge fuses, with provision for interrupting the unfused neutral and all ungrounded conductors. The neutral shall be provided with a removable solid copper bar. The incoming service neutral shall be bonded to the metallic housing of the cutout panel on the line side of the removable bar. The fused cutout panel housing shall

consist of a locked metallic cabinet with hinged door, painted fire department red, and permanently identified as to the system served. For buildings served at 265/460 volts, the primary and secondary service disconnects shall be fused disconnect switches (in lieu of fused cutout panels) in locked, red painted, permanently identified enclosures. The service voltage shall be transformed to 120/208 volts and a fused cutout panel provided within 5 feet of the transformer on the 120/208-volt side. The incoming supply connections shall comply with the NYC Electrical Code, and the fused cutout panel shall comply with the requirements specified herein before.

B. PRIMARY POWER SOURCE

(1) The primary service to the fire alarm system shall be so arranged that the building source of supply can be disconnected without de-energizing the fire alarm supply. To accomplish this, the primary fire alarm supply shall be connected ahead of all building over current protection and/or switching devices.

(2) Partial systems such as strobe light control panels, partial fire alarm, automatic smoke/heat detection, and sprinkler alarm subsystems and/or other associated systems may be connected to an emergency supply riser panel via a tapped connection, and an identified, locked fused cutout box located within 5 feet of the tap.

Where an emergency power system (E.P.S.) is provided in accordance with section 27-396.4, it shall be connected to the emergency supply riser. Where an E.P.S. is not available, the emergency supply riser shall be connected to a tap ahead of the service switch.

C. SECONDARY POWER SOURCE

The secondary service to the fire alarm system shall be provided as follows:

(1) If the building has a required emergency power system, the secondary source shall be the emergency power system, regardless of whether the primary source is utility company power or an isolated plant.

(2) If the building has an emergency generator supplying power to any of the loads listed in 27-396.4, the secondary source shall be the generator.

(3) For all other buildings, the secondary source shall be a battery supply provided in accordance with Reference Standard 17-5 for storage batteries. The battery shall be designed for 24-hour supervisory operation of the system, followed by

(a) 6 hour total system load for systems with voice communication capability (A 45 minute period of voice/alarm operation at maximum connected load shall be considered equivalent to 6 hours of total system operation), or

(b) 15 minutes of total system load for systems without voice capability.

(4) Partial systems and/or associated systems may derive their secondary supply from batteries whether or not the building is equipped with an emergency generator. Batteries shall be designed for 24-hour supervisory operation followed by 5 minutes of total system load.

All alterations to any existing approved fire alarm system involving or consisting of the replacement of the Fire Command Station, Fire Alarm Control Panel, Central Processing Unit, Floor Control Units, Remote Control Units, Data Gathering Panels, Terminal Transmission Board, and other similar or equivalent controls or control panels shall be required to comply with Section C(3) above. For systems in buildings which are in compliance with Sections C(1) or C(2) above, compliance with Section C(3) is optional.

2. Classification of Systems. - Systems shall be classified as follows:

(a) Manual interior fire alarm.

(b) Standpipe fire line telephone and signaling.

(c) Automatic heat, smoke, or products-of-combustion fire detecting and alarm, as follows:

(1) Fixed temperature solder or bimetallic spot type heat detection.

(2) Fixed temperature heat detecting wire.

(3) Rate-of-rise pneumatic tube heat detection.

(4) Photoelectric type smoke detection.

(5) Products-of-combustion ionization detection.

(d) CO_2 extinguishing.

(e) Hood smothering and fan shutdown.

(f) Sprinkler alarm.

(g) Ventilation duct smoke and fire detection and fan shutdown.

(h) Oxygen and nitrous oxide alarm.

(i) Escalator fire door alarm.

Where fire alarm, sprinkler alarm, and/or automatic fire detection systems are installed in the same building, wiring interconnections shall be provided between the control boards of the Systems, and necessary actuating relays and transmitters shall be provided in the control boards, so that actuation of the sprinkler alarm and/or fire detection systems will activate the fire alarm system, and so that actuation of the fire alarm system will de-energize all fans, with the exception of those fans used for the Stair Pressurization System, controlled by the automatic detection system.

3. WIRING

A. Power Conductors (Above 75 volts) shall be:

(1) Copper: THHN, THWN/THHN, TFFN, TFN, FEP, RHH, RHW-2, XHH, or XHHW; minimum 600 volts; 90 C; for installation in rigid metallic conduit (RMC), intermediate metallic conduit (IMC) or electric metallic tubing (EMT).

(2) Cable type MI, M.E.A. approved for 2-hour fire resistance rating.

B. Low Voltage Conductors (75 volts and less) shall be:

(1) Copper; THHN, THWN/THHN, TFFN, TFN, FEP, RHH, RHW-2, XHH, XHHW, minimum 600 volts; 90 C; for installation i n rigid metallic conduit (RMC), intermediate metallic conduit (IMC) or electric metallic tubing (EMT)
(2) Minimum wire size No.18 AWG.
(3) Multiconductor cables run in raceways, or exposed as described hereinafter, shall meet the following additional requirements:
(a) Type FPLP only; minimum insulation thickness 15 mils; minimum temperature 150 C; colored red.
(b) Red colored jacket overall; minimum thickness 25 mils.
(c) Cable printing as per UL1424; must bear additional description "ALSO CLASSIFIED NYC CERT. FIRE ALARM CABLE" legible without removing jacket.
C. Installation of Conductors and Raceway shall be in accordance with the following:
(1) Power conductors shall not be installed in common raceways with low voltage conductors.
(2) Comply with applicable requirements of New York City Electrical Code, except where requirements are exceeded by this Reference Standard.
(3) Conductors other than M.I. cable shall be run in raceway, except as specifically described below.
(4) Multi-conductor cables may be installed without raceway protection where cable is protected by building construction. Where not protected by building construction, cables shall be located 8 feet or more above the finished floor and not subject to physical tampering or hazard. Locations within eight feet of the finished floor that are deemed as "protected by building construction" shall include raised floors, shafts, telephone and communication equipment rooms and closets, and rooms used exclusively for fire alarm system equipment. In any suppression and extinguishing system activated by automatic fire detection, including, but not limited to, pre-action sprinkler, deluge sprinkler, clean air agent, halon, range hood, C02 and dry chemical, multi-conductor cables shall be installed in RMC, IMC, or EMT.
(5) All wiring within mechanical and elevator equipment rooms shall be run in raceway.
(6) Raceways run within 8 feet of finished floor in garage areas, loading docks, mechanical rooms, and elsewhere where subject to mechanical damage, shall be rigid galvanized steel conduit only.
(7) Where wiring is required to be run in raceway, install conductors in rigid metallic conduit (RMC), intermediate metallic conduit (IMC) or electric metallic tubing (EMT), except that multi-conductor cables may also be run in surface metal raceway. Flexible metallic conduit, not exceeding 36" in length, shall be permitted for final connections to initiating and notification devices. Conductors for other electrical systems shall not be installed in raceways containing. REFERENCE STANDARD 17 conductors.
(8) Where allowed to be run without raceway protection, multi-conductor cables shall be installed as follows:
(a) Cables shall not depend on ceiling media, pipes, ducts, conduits, or equipment for support. Support independently from the building structure.
(b) Secure by cable ties, straps or similar fittings, so designed and installed as not to damage the cable. Secure in place at intervals not exceeding 5'-0" on centers and within 12" of every associated cabinet, box or fitting.
(9) Installation of raceways, boxes and cabinets shall comply with the following general requirements.
(a) Covers of boxes and cabinets shall be painted red and permanently identified as to their use.
(b) Penetrations of fire-rated walls, floors or ceilings shall be fire stopped.
(c) Within stairways, raceways within 8 feet of the floor shall not be installed so as to reduce or obstruct the stairway radius.
(d) Raceways or cables shall not penetrate top of any equipment box or cabinet.
(10) All conduits supplying 120-volt power to the fire command station and/or fire alarm control unit and/or to outlying control cabinets, shall contain a green insulated grounding conductor sized in accordance with the New York City Electrical Code (#10 AWG minimum). The grounding conductor shall be connected to the ground bus or other suitable grounding terminal in each box and cabinet in which it enters. At the fuse cutout panel supplying the fire alarm system, provide a grounding electrode conductor sized and installed in accordance with the New York City Electrical Code (#10 AWG minimum).
(11) For cabinets whose 120-volt supply is not derived from the main fire alarm system cutout panel, provide green insulated separate grounding electrode conductors, sized and installed as per New York City Electrical Code (#10 AWG minimum). In steel-framed buildings, a connection to local steel structure will be acceptable.
(12) Splices and terminations of wires and cables shall be as follows:
(a) Permitted only in boxes or cabinets specifically approved for the purpose.
(b) Utilize mechanical connections specifically approved by U.L. 486 A & C for the conductors, or if soldered, first joined so as to be mechanically and electrically secure prior to soldering and insulating. Temperature rating of completed splices shall equal or exceed the temperature rating of the highest rated conductor.
(13) Wiring for audible and visual alarm notification devices shall be arranged so that a loss of a portion of the wiring on a floor will not render more than 60% of the devices of each type inoperative, and the devices shall be so connected to the circuitry (i.e., by means of alternate circuits) as to maintain at least partial audibility/visibility throughout the entire floor.

4. Fire Alarm Sending Stations. -

*(a) In manual fire alarm signal systems, the metal case enclosing exposed or surface alarm boxes shall be of cast iron or cast No. 43 aluminum or approved aluminum-zinc alloy, and shall be drilled and tapped to receive the conduit. Where exposed to moisture, the box shall be closed in a weatherproof outer shell. In new buildings, approved galvanized sheet steel back-boxes embedded in the wall may be used and the conduits shall be secured by lock nuts and bushings.
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(1) A floor warden station with a speaker mechanism having a fire resistant assembly and a manual fire alarm station may be installed in the same housing. A self-restoring push button that will silence an alarm speaker while being held in place, shall be required wherever such speaker is within 8 feet of a floor warden station.

(b) All current-carrying parts shall be insulated from parts carrying current of opposite polarity with approved insulating material.

(c) All coded pull-lever type stations shall be constructed with a door or other approved means to protect the pull lever against accidental injury. The wording "IN CASE OF FIRE - OPEN DOOR AND PULL DOWN LEVER" in raised letters, or equivalent instructions, shall appear on the door.

(d) In systems using break-glass or break-rod type stations, at least one extra glass rod or glass pane for each station in the system shall be kept in the building. Break-glass boxes shall have the glass rod or pane mounted on the surface of the station covers or mounted internally in such a manner that the glass must be broken to actuate the sending station, Suitable hammers on chains attached to the boxes, or other approved means of breaking the glass shall be provided.

(e) The box or station of a coded system shall be so designed that once started, the proper transmission of a complete set of signals cannot be interfered with by manipulation of its starting device.

(f) Each closed circuit coded box or station shall be arranged to send a definite code of signals to indicate the floor or portion of the floor on which it is located.

(g) Not less than 3, nor more than 20, taps or blasts shall be given at each revolution of the code wheel. The code wheel shall revolve at least four times for each operation of its starting device and shall be of metal properly insulated from ground.

(h) Boxes or stations used in systems in which whistles, vibrating bells, or horns are employed shall be so timed that the sounding devices will give the code signals clearly.

(i) Contact points shall be in multiple.

(j) Contact points and contacts of the testing devices shall be of silver or other approved material and of the scraping type. The contact points and contacts shall be secured in a substantial manner to springs of phosphor bronze or other approved material, and shall be so designed as to positively break a circuit carrying 0.10 ampere at 250 volts under actual operating conditions.

(k) Lever boxes shall be so designed as to automatically wind when the lever is pulled for an alarm. Boxes requiring glass replacements shall be so arranged that replacement cannot be made without resetting the mechanism for another alarm.

(l) Where it becomes necessary to install more than one set of contacts operating from code wheel, approval must be obtained from the fire commissioner before the installation. This shall not include pre-signal features. The box shall have its code signal number plainly marked thereon.

(m) Uncoded boxes. -

(1) Uncoded closed circuit fire alarm stations may be operated by a break-glass or break-rod or a pull lever device so arranged that the alarm cannot be interfered with except by resetting or replacement of the glass or rod by an authorized person.

(2) The construction and materials shall be equivalent to that of the standard approved type coded closed circuit station, except that the contacts shall be of sufficient capacity to safely carry out the entire operating current of the gong circuit without excessive heating.

(n) Station testing devices. -

(1) Each fire alarm system shall be provided with an auxiliary device to test the signaling devices. The auxiliary device shall be located in one of the alarm boxes or mounted on the control board. Such testing device shall be arranged so that the test is made without operating the break wheel of the box or interfering with the dual operating feature.

(2) Provisions shall be made for a silent test of coded alarm box mechanisms without operating the signaling devices. Such test device shall be designed to prevent any person, except those in authority, from operating the same and to prevent the possibility of the box being left inoperative after the test.

5. Alarm Sounding Devices. -

*(a) Alarm sounding devices shall be sufficient in number to be clearly audible to all occupants of a building. Approved gongs shall be provided as the sounding devices. Where gongs or bells are not audible, approved horns or whistles may be provided. Chimes and other alarm sounding devices may be installed only with the approval of the commissioner.

(b) Gong shells shall be pinned to prevent turning and then securely fastened to their supports by a machine cap screw at least 3/8 in. in diameter.

(c) Gong shells shall be covered with a rust preventive. The gong support and gong frames shall be cast in one piece.
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6. Fire Alarm System Control Boards. -

(a) Supervising circuit. -

(1) A small current flow shall be maintained to constantly supervise each circuit. A millimeter, or other approved current indicator, shall be provided and connected so as to indicate the supervising current.

(2) The supervising circuit shall be provided with a trouble bell operating an open circuit and arranged to ring continuously in case of failure of the system. The trouble bell shall be so located that it will be within audible range of a responsible person in the building.

(3) Trouble bells may be fitted with silencing switches only when the switch is connected in such a manner that the act of silencing the bell by the operation of the switch automatically transfers the trouble signal to a red lamp on the control board. When the trouble has been repaired, the alarm bell shall ring until the silencing switch has been reset to operate under normal conditions.

(4) The trouble bell shall be of the vibrating type and shall give a distinctive signal.

(b) Protection of sending and sounding devices. -

(1) In fire alarm signal systems, moving parts of sending stations and sounding devices shall be enclosed in metal casings, made dust proof and damp proof when necessary, and clearly marked with instruction for use.

(2) Whenever necessary, hammer rods of gongs shall be suitably protected against mechanical damage by the use of a guard or equivalent means. If subject to possible mechanical damage, the entire device shall also be enclosed in a protecting case made of approved wire netting or perforated metal. All casings shall be insulated from current carrying parts, but shall be grounded to the conduit.

(c) Standards of electric alarm apparatus. -All electrically actuated apparatus used in fire alarm systems shall be so designed and constructed that it will operate satisfactorily at a current flow of 15 per cent above or below the normal operating current.

(d) Insulation. -

(1) Insulating materials used shall be varnished cambric, bakelite, mica, or equivalent insulating material.

(2) The use of fiber or paper as an insulating material for the fire alarm signal systems is prohibited.

(3) The insulating materials used shall be capable of withstanding an insulation breakdown test of 1,000 volts a.c. plus twice operating voltage applied for 1 minute.

(e) Electromagnets. -

(1) Electromagnet windings shall be impregnated with an insulating, moisture repelling compound of the silicone or epoxy type.

(2) Electromagnet coils used on alternating current, when composed of enameled wire, shall have an additional approved insulation on each wire. The coils may be of the form-wound type.

(3) A protective cover to prevent mechanical damage shall be provided over the entire coil.

(4) Electromagnetic coils shall be fastened to prevent floating.

(5) Electromagnet cores shall be of the best grade of ferrous material so as to reduce to a minimum the possibility of failure due to residual magnetism.

(6) Electromagnet cores for use on alternating current shall be of laminated construction or other approved method to prevent heating and promote efficiency.

(7) Electromagnet cores of relays and gongs shall be treated to prevent corrosion. Paint or varnish shall not be used for this purpose.

(8) Nonmagnetic freeze pins shall be used to prevent two magnetic surfaces from making physical contact with each other.

(f) Relays. -

(1) The armatures of all relays shall depend on gravity or magnetic attraction for their operation. However, armature operation may be initiated by flat-type springs when permitted by the commissioner. The use of spiral springs is prohibited.

(2) Adjustments shall be of such a character that they can be securely locked.

(3) Contact points shall be of sufficient area to carry the current used in operation and to insure long life. They shall be of pure silver or other approved material and properly riveted to their support. Contact arms shall be of phosphor bronze, and shall be of the dead beat type. Contact assemblies shall be of such a character that their operation is of a scraping self-cleaning nature. The use of condensers across contacts in order to absorb the arc in any part of a fire alarm circuit is prohibited.

(4) Relays shall be free from objectionable hum when used on alternating current.

(g) Time limit delay device. -

(1) All gong circuit shell and special signal apparatus may be protected by a time limit delay device. This time limit delay device shall consist of a heating coil so designed that the normal operating current will have little or no effect upon a thermostatic bimetallic bar or strip contained therein. Any abnormal increase over operating current or the continued cumulative heating effect thereof after a period of at least 3 minutes, but not more than 20 minutes, shall cause the thermostatic element to expand. The expansion of this element shall automatically open the source of current supply to the gongs or devices protected. The operation of the time limit delay device shall cause the trouble bell to ring.

(2) Time limit delay devices shall be so connected in the fire alarm circuit that their operation will not open the fire alarm box circuits.

(3) Where, due to the extent of the installation, it becomes necessary to install a number of time limit delay devices, the operation of a single time delay device shall not affect other sounding devices similarly protected.

(4) A contactor relay to operate the sounding devices shall be provided on all direct gong circuits exceeding two in number. Gong circuits not requiring contactor

relays shall be operated by contacts properly phased for the armature of the box circuit relay.

(5) A separate time limit delay device, contactor supervisory relay and gong supervisory relay, shall be provided for each four gong circuits or fraction thereof.

(h) Switches. -Triple pole, double throw, broken back knife switches properly supervised, and connected to emergency resistors, shall be provided on all box and gong circuits when the circuits exceed three in number.

(i) Instruments. -A separate approved milliammeter, or other approved current indicator, shall be provided for the box circuit and each four gong circuits on the control board when the gong circuits exceed three in number. A separate milliammeter shall be provided to indicate the supervisory current of contactor relays and emergency switch circuits. This meter shall be known as the "board meter."

(j) Resistors. -

(1) Resistors shall be of the vitreous enameled type and shall be mounted on the front or face of control panels. Wire wound resistors, protected by a suitable metal guard, may be used when permitted by the commissioner. Ferrule or knife contact type resistors shall not be used.

(2) A protective resistor shall be placed in the negative, or live, lead of all box circuits to protect the contacts of the boxes in the event of a ground. This resistor shall have a resistance of at least 300 ohms, hut no more than 750 ohms.

(3) All relays, current indicators, resistors, time limit delay devices, and other apparatus used in connection with the operation and supervision of closed circuit fire alarm signal systems shall be properly mounted on a panel of approved material in a metal cabinet provided with lock and key. The control board shall be located in a place where it will be subject to the least vibration and least chance of mechanical damage. The location shall be free from moisture, flammable gases, and dust. Furthermore, the control panel shall be located so that it can be kept under the frequent view of a responsible occupant of the building delegated by the owner to be in charge.

(4) Control board panels shall be of insulating material such as ebony asbestos, bakelite, or other approved materials at least 1/2 in. thick. Control boards mounted in each cabinet shall be securely fastened in each corner.

(5) Provision shall be made for sufficient wire gutter space around the panel. Gutter space shall be a minimum of 2 in. at sides, top, and bottom. Wire in gutter space shall be properly laced in a neat and workmanlike manner on all control boards.

(6) Conduit knockouts shall not be provided in the top of the control board cabinet.

(7) A wiring diagram of the alarm system approved by the commissioner and the approved card of instruction properly marked and securely fastened shall be provided within the control board cabinet. When it becomes necessary to mount the diagram outside of the cabinet, the diagram shall be framed under glass or equivalent material.

(8) All control board cabinets shall be provided with sight holes and glass panels to make meters on the inside of the cabinets visible from the outside.

*(9) Control boards may be of the solid state circuitry type with modular construction and replacement components. ***Local Law 16-1984***

7. Painting of Equipment. -All enclosing cases for fire alarm, sprinkler alarm, smoke detection, and oxygen and nitrous oxide alarm apparatus shall be painted fire department red, except where approval is given by the commissioner to deviate from this requirement.

8. Closed Circuit Annunciators. -

(a) Annunciators used in connection with unit and general fire alarm systems shall be of an approved closed circuit type. The annunciator shall have approved types of relays equipped with a target shutter or other indicating device. The indicating device shall have marked thereon a description of the purpose it serves. The printed designation on unit or building annunciator's indicators shall be legible. The mechanism shall be so arranged that once operated the indicating device must be reset manually.

(b) A unit annunciator shall be so designed that the operation of any station in the unit causes a visible and audible signal. The unit annunciator shall be actuated by contact on a code wheel of the fire alarm station, or by contact on a relay connected to the fire alarm box circuit. In no case shall the station fire alarm circuit be used for this purpose.

(c) Trouble annunciators shall be so arranged that the indicating device will reset automatically when the cause of the trouble has been removed. The trouble annunciator shall be so designed that it will indicate visible and audible trouble signals in the event of trouble occurring on any circuit panelboard of unit annunciators. The trouble annunciator shall be actuated by the operation of contacts on all supervisory relays. Each relay of this annunciator shall be provided with two sets of contacts so arranged that one set will operate the 110-volt trouble signal, and the other set will actuate the register, if a register is used.

(d) A trouble buzzer switch lamp shall be mounted on the inside of each unit annunciator cabinet on the panel.

(e) A trouble bell, switch, and lamp shall be mounted on the inside of each trouble annunciator cabinet on the panel. Trouble bell may be placed at a distance from the annunciator by approval of the commissioner.

(f) Relay drops of annunciator shall be so designed that vibration from without or that caused by the trouble signal within will not operate the indicating devices.

(g) All annunciators shall be installed in a separate red enameled steel cabinet provided with an approved

lock and key. Annunciators shall be marked in white letters at least 1 in. high with the words: "FIRE ALARM ANNUNCIATOR, ZONE" or "FIRE ALARM TROUBLE ANNUNCIATOR", whichever the case may be.

9. Automatic Heat and Smoke Fire Detection Systems. -

(a) Classifications. -Automatic heat and smoke fire detection systems shall be classified as follows:

(1) Fixed temperature solder or bimetallic spot-type heat detection.

(2) Fixed temperature heat detecting wire.

(3) Rate-of-rise pneumatic-tube heat detection.

(4) Photoelectric-type smoke detection.

(5) Products-of-combustion ionization detection.

(b) Plans.-Floor layouts shall show the automaticfire alarm signal equipment and its location, number of thermostatic heads, transmitters, control board, and sounding apparatus; also, all exits, partitions, and enclosures shall be identified on the layouts. The layouts shall be approved by the commissioner and the fire commissioner before work is started on the installation.

(c) Wiring and electrical apparatus. -

(1) All electrical wiring, signal apparatus, and thermostatic actuating devices shall be connected and operated on closed supervised electric circuits, and conform to the requirements for the installation of interior fire alarm systems.

(2) Approved automatic-type systems shall be installed under the supervision of the commissioner.

(3) When installed in connection with approved interior alarm systems, automatic systems shall have this connection made through an approved combination manual and automatic transmitter.

(4) When installed in connection with dry valves or other fire protective devices, automatic systems shall actuate the dry valve or devices through an approved magnetic trip.

(5) In automatically operated systems, each system shall have at least one manual fire alarm box as an auxiliary means for actuating the alarm system.

(6) Automatic systems shall be arranged to transmit a prescribed code signal as required by the fire commissioner.

(7) Closed circuit annunciators shall be provided in connection with automatic thermostatic systems when required by the fire commissioner.

(8) Transmitters, manual alarm boxes, testing boxes, and annunciators shall be so installed that a considerable jar cannot start their mechanism.

(9) Transmitters that require rewinding after operation shall be provided with a trouble bell to indicate a run-down condition.

(10) The trouble bell shall be arranged to give a distinctive signal different in tone from the trouble bell supervising the thermostatic alarm circuit.

(11) Each automatic thermostatic system shall have one or more combination manual and automatic transmitters located in a natural path of escape for each thermostatic circuit, wherever the thermostatic alarm actuates the interior alarm system.

(12) All thermostatic devices shall operate on a closed supervised electric circuit.

(13) The thermostatic wiring may return to the control board and the end line resistor mounted thereon. This end line resistor may be in the form of a supervising relay.

(d) Control boards. -Thermostatic automatic systems shall be operated from properly supervised approved closed circuit control boards installed in a locked metal cabinet, which shall be painted fire department red and marked in 1 in. high white letters with the words "AUTOMATIC THERMOSTATIC FIRE ALARM".

***(e) Signal apparatus.** -Gongs, horns, or bells, shall be provided, where shown on plans in connection with each thermostatic alarm system, so that the signals will be clearly audible throughout the building or portion of the building requiring a fire alarm system. All thermostatic alarm systems shall be connected to an approved central office for transmission of an early alarm to the fire department.
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(f) Testing. -The thermostatic alarm system shall be so arranged that a periodic test of the entire system can be made by the person in charge of the building.

(g) Thermostat installation. –

(1) Thermostats shall be placed throughout the building, or portion of the building, including the inside of all closets, cellars, basements, lofts, and elevator wells, and under stairs as shown on approved plans.

(2) No portion of the building shall be exempt without written approval of the commissioner.

(3) Approval shall be obtained before the installation of high-temperature thermostats in boiler rooms, heating boxes, skylights, and other extra hazardous locations.

(4) The distribution of thermostatic heads and devices shall be in accordance with the requirements of reference standard RS 17-5 and as required herein.

(5) The distance from a wall or partition to a thermostat shall not exceed 1/2 the distance between thermostats in the same direction.

(6) A line of thermostats shall be run on each side of partitions.

(7) Spot thermostats of the solder type shall be arranged on smooth ceiling not more than 15 ft. apart, and at intervals of 15 ft. on each line.

(8) On irregular ceilings the thermostats shall follow the spacing as required in (7) above as near as possible, except that in no case shall the area protected by any signal head exceed 225 sq. ft.

(9) In ceilings on which there are bays, one or more heads shall be placed in each bay so the area protected does not exceed 225 sq. ft. for any head.

(10) Not more than 65 heads shall be installed on any supervised circuits.

(11) A thermostatic circuit shall not serve or protect more than the area of any one floor or story, except by special permission.

(h) Fire detecting wire systems. -

(1) Thermostatic systems of the fire-detecting-wire type shall have the thermostatic wire so arranged and installed that there is minimum possibility of the wire being damaged.

(2) Where necessary, fire-detecting wire shall be protected against mechanical injury.

a. Each circuit shall consist of a continuous length of fire-detecting wire not exceeding 1,000 ft., and shall not protect an area greater than that of any one floor or story, except by special permission.

*b. Lines of fire detecting wire shall be so located throughout the area protected that they shall not be more than 15 feet apart and so that no point on the ceiling will be more than 7 1/2 feet from the nearest point of fire detecting wire, unless of a type approved for greater coverage.

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c. Fire-detecting wire may be run either directly on ceilings or on side walls if the wire is placed not more than 20 in. below the ceiling, or on lower sides of timbers or projections.

d. Fire-detecting wire shall be securely fastened to its support in a manner that will not cause damage to the insulation or the outer braid.

e. Wiring, circuits, and all devices connected thereto shall comply in all respects with the requirements for manual fire alarms.

(i) Rate-of-rise pneumatic tube systems. -

(1) Thermostatic systems of the rate-of-rise pneumatic tube type shall have the pneumatic tubing so arranged and installed that the possibility of mechanical damage is minimized. Where necessary, copper tubing shall be protected against damage.

a. Each circuit shall consist of a continuous length of tubing not exceeding 1,000 ft. without branches or alternative paths.

b. Tubing shall be enclosed in conduit or otherwise insulated or legged in order to isolate signals.

c. In every enclosed space or separate room, there shall be at least 5 per cent of the total length of the exposed tubing or circuit.

d. In no case shall less than 25 ft. of exposed tubing be used in any enclosed space or separate room.

e. Lines of tubing shall be so disposed throughout the area to be protected that they will not be more than 30 ft. apart, and so that no point on the ceiling will be more than 15 ft. from the nearest point of tubing.

f. Tubing must be run either directly on ceilings, or on side walls if the tubing is placed not more than 20 in. below the ceiling, or on lower sides of timbers or projections.

g. In rooms where timbers or other projections form bays more than 1 ft. deep and 8 ft. wide between beam centers, at least one line of tubing must be run in each bay.

h. Wiring circuits and all devices connected thereto shall comply in all respects with the requirements for the manual fire alarms.

i. The service connection for an automatic thermostatic alarm system shall be taken at the street side of the service switch in a manner approved by the commissioner.

(j) Unusual construction. -Approval of the fire commissioner shall be required to install thermostatic devices under floors or roofs of removable-panel construction.

(k) Existing installations. -Thermostatic alarm systems previously installed and approved by the fire commissioner shall be accepted as long as they are maintained in good working order, and there is not a change in building height or construction. Where alterations interfere with the proper distribution of thermostatic heads, additional heads shall be installed.

(l) Photoelectric smoke detection systems. -These systems shall be installed in accordance with the requirements of reference standard RS 17-5. The requirements of the building code affecting the design and operation of smoke detecting systems in duct systems, shall apply.

(m) Products-of-combustion-type ionization detection systems. -These systems shall be installed in accordance with Underwriters' Laboratory requirements.

(n) Unusual construction. -Approval of the fire commissioner shall be required to install thermostatic, photoelectric, or ionization type detection devices under floors or roofs of removable panel construction.

10. CO2 Extinguishing Systems. -Carbon dioxide extinguishing systems shall be installed in accordance with Underwriters' Laboratory requirements.

11. Hood Smothering and Fan Shutdown Systems. -

(a) General. -The requirements of the building code affecting the design and operation of automatic fire extinguishing systems for installation in hoods and ducts that exhaust fumes from commercial cooking equipment, shall apply.

(b) Source of power. -A local source of electric power for the system shall be utilized. Control wiring shall be of the "fail safe" type so that loss of control power will shut off all equipment.

(c) Test switch. -A test switch shall be provided, and wired so as to permit testing of the control wiring against shorts or open-circuits without actuation of the smothering system.

(d) Alarm sounding device. -A local alarm gong shall be provided, and shall sound upon actuation of the smothering system.

12. Central Oxygen and Nitrous Oxide Alarm Systems. - A closed circuit electrical alarm system shall be provided to give visible and audible signals when the pressure in the system varies 8 lbs. above or below the normal line pressure of 50 lbs. Alarm indicating panels shall be so located in the hospital that they are under 24 hr. observation by a responsible person, or persons, delegated by the owner. Additional indicating panels may be provided in other locations subject to the approval of the fire commissioner.

****13. Licensed Contractors.** -Only a person holding a license, or a special license in accordance with the provisions of the New York City electrical code, shall install, alter or repair electrical wiring or apparatus for fire alarm systems in any building. Upon approval by the commissioner, a manufacturer's designated representative may alter or repair a specific fire alarm system.

14. Used or Rebuilt Apparatus. -Used apparatus shall not be reused for any interior fire alarm system until the same has been reconditioned in the shop of an approved manufacturer of interior fire alarm apparatus. Approval shall be obtained from the commissioner prior to installation. The use of reconditioned apparatus whose manufacturer has discontinued manufacturing equipment is prohibited.
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***15. Fire Protective Pre-Signal Systems for Class "G" Assembly and Educational Occupancy Buildings in Group 1-A (Fireproof) Construction**
****515-75 BCR***

I - SCOPE

When permitted by the Fire Commissioner, new fire signal system characteristics for pre-signal operation and existing manual coded and non-coded fire station signal modifications for pre-signal operation, shall be in accordance with the following schedule in its entirety and in accordance with Reference Standards RS 17-3, RS 17-3A, RS 17-3B and other applicable standards and permitted only in Class "G" educational occupancy buildings of Group 1-A fireproof construction. Interior alarm systems installed or altered in accordance with this standard shall be designated as "Class G Systems".

II - FUNCTION SCHEDULE

A. Introduction of a time delay between the operation of a coded, master coded or non-coded manual interior fire alarm station and the audible evacuation signal shall be limited to an adjustable interval of 0-180 seconds. The specific duration of the time delay shall be determined by the Fire Commissioner for each specific premises where permitted. The time delay, when instituted by a manual station, shall also be effective for fan shutdown and other auxiliary equipment. There shall be no delay on automatic detection.

B. Alphanumeric annunciation of each manual and each automatic initiation for registration of the location of the device producing the alarm with response instructions determined and authorized by the Fire Commissioner. The registration shall indicate in seconds the delay time remaining for the last signal initiation and shall be visible to and in the immediate vicinity of the Chief Building Administrator's office.

C. Means for cancellation of a manual signal initiation within its introduced time delay accessible only to the Chief Building Administrator. Cancellation shall not be possible for fifty (50%) percent of the delay time expiration.

D. Means for by-passing the introduced time delay after a manual device initiation to produce the evacuation sounding and after normal school hours. The means shall be in the immediate vicinities of the Chief Building Administrator's office and the Building Engineer's office.

E. Master coding for the evacuation signal, providing for single stroke gong systems an evacuation signal comprising four rounds of three single stroke gong soundings only, or providing for dedicated loud speaker systems an evacuation signal comprising a rising tone of three seconds duration starting at a frequency of 400 hertz and ending with a frequency of 1000 hertz, repeated twelve times.

F. Automatic notification to the Fire Department via a class 3 manual station located in the vicinity of the Principal Administrator's office.

III - EQUIPMENT REQUIREMENTS

A. The acceptable means to provide the previously defined characteristics and modifications may include digital electronic circuitry with logic in accordance with the reference standard and as approved and with information interchange in accordance with the reference as approved. Where digital electronic circuitry is used, reliability rates shall be equal to or greater than the equivalent reliability rates for the relay circuitry that may be designed for this purpose. The acceptable means shall be uniform for a given installation. Where digital electronic circuitry is chosen as the acceptable means for a given installation the entire circuitry for this installation shall be digital electronic without exception.

B. The digital electronic alphanumeric annunciation may take one of the following three forms:

1. A fixed lettered display with characters a minimum height of one quarter inch, resulting from the conversion of a manual or automatic device initiation to a unique point.

2. A dot matrix display of a duration at least equal to the duration of the systems interrupt mode and originating in the manner of the fixed lettered display. The matrix shall be a minimum of seven by five dots per character.

3. A cathode ray tube display of duration in the manner of the dot matrix display and origination in the manner of the fixed lettered display. The minimum character height shall be one quarter inch.

In addition the following form shall be provided in conjunction with one of the foregoing:

A teletypewriter is to receive only mode with origination in the matter of the fixed lettered display.

C. Other digital electronic alphanumeric annunciation devices such as liquid crystals or light emitting diodes or the like may be installed for this purpose in lieu of one of the above three forms when approved for use and acceptable to the Fire Commissioner.

D. All system events shall be recorded in hard copy along with the date and time of each particular event. These events shall include the following:

1. The manual or automatic device initiation.

2. The elapsed time in seconds from the manual or automatic initiation to the cancellation or the by-pass as above defined.

3. The elapsed time in seconds from the manual or automatic initiation to the evacuation sounding as above defined.

**E. Where a loud speaker system is used for the evacuation sounding, its amplifiers shall be designed for one hundred and fifty (150%) percent of rated load with a minimum of two discrete amplifiers. The loud speaker system may be used for voice communication, provided the evacuation signal use has priority. Speakers used for fire alarm systems shall be rated for 400 degrees F. and approved by the Board of Standards and Appeals, These speakers and amplifier requirements apply to all systems installed under any and all provisions of this code.

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F. All fire protective pre-signal systems shall be operated daily when the building is occupied and a log shall be kept of such operation, accessible to the Commissioner. The hard copy of system events may be considered the required log. All equipment must be approved by Board of Standards and Appeals and acceptable to the Commissioners of Buildings and Fire Department, prior to installation.

IV - DETAILED STANDARDS FOR THE INSTALLATION OF CLASS "G" FIRE SIGNAL SYSTEMS

A. SOURCES OF ELECTRICAL POWER

Two sources of electrical power shall be provided as follows:

(1) The primary source shall be generated electric power not exceeding 277/480 volts, supplied by utility company power, or isolated plant.

(2) The secondary source shall be an emergency power system (as per 27-396), emergency generator and/or battery power.

One source of power shall be connected to the system at all times. The primary and secondary power sources shall be so arranged and controlled by automatic transfer switches and/or circuitry that when the primary source of power fails, the secondary source will be connected automatically to the fire alarm signal system. Intermediary devices between the system supply and the source of power, other than fused disconnect switches, transformers, fused cutouts and automatic transfer switches, are prohibited. Such disconnect switches, cutouts, transformers and automatic transfer switches shall supply only the fire alarm system and other systems covered by this reference standard. When the utility company requires the installation of metering current transformers, the system supply shall be connected on the load side of the current transformers. All installations shall comply with the applicable sections of the New York City Electrical Code. The primary source of power and the secondary source (if emergency power system or generator) shall each be provided with a means of disconnect from the fire alarm system. For buildings supplied at 120/208 volts, each disconnect shall consist of a fused cutout panel, utilizing cartridge fuses, with provision for interrupting the unfused neutral and all ungrounded conductors. The neutral shall be provided with a removable solid copper bar. The incoming service neutral shall be bonded to the metallic housing of the cutout panel on the line side of the removable bar. The fused cutout panel housing shall consist of a locked metallic cabinet with hinged door, painted fire department red, and permanently identified as to the system served. For buildings served at 265/460 volts, the primary and secondary service disconnects shall be fused disconnect switches (in lieu of fused cutout panels) in locked, red painted, permanently identified enclosures. The service voltage shall be transformed to 120/208 volts and a fused cutout panel provided within 5 feet of the transformer on the 120/208-volt side. The incoming supply connections shall comply with the NYC Electrical Code, and the fused cutout panel shall comply with the requirements specified herein before.

B. PRIMARY POWER SOURCE

(1) The primary service to the fire alarm system shall be so arranged that the building source of supply can be disconnected without de-energizing the fire alarm supply. To accomplish this, the primary fire alarm supply shall be connected ahead of all building over current protection and/or switching devices.

(2) Partial systems such as strobe light control panels, partial fire alarm, automatic smoke/heat detection, and sprinkler alarm subsystems and/or other associated systems may be connected to an emergency supply riser panel via a tapped connection, and an identified, locked fused cutout box located within 5 feet of the tap.

Where an emergency power system (E.P.S.) is provided in accordance with section 27-396.4, it shall be connected to the emergency supply riser. Where an E.P.S. is not available, the emergency supply riser shall be connected to a tap ahead of the service switch.

C. SECONDARY POWER SOURCE

The secondary service to the fire alarm system shall be provided as follows:

(1) If the building has a required emergency power system, the secondary source shall be the emergency

power system, regardless of whether the primary source is utility company power or an isolated plant.
(2) If the building has an emergency generator supplying power to any of the loads listed in 27-396.4, the secondary source shall be the generator.
(3) For all other buildings, the secondary source shall be a battery supply provided in accordance with Reference Standard 17-5 for primary batteries. The battery shall be designed for 24-hour supervisory operation of the system, followed by
(a) 6 hour total system load for systems with voice communication capability (A 45 minute period of voice/alarm operation at maximum connected load shall be considered equivalent to 6 hours of total system operation), or
(b) 15 minutes of total system load for systems without voice capability.
(4) Partial systems and/or associated systems may derive their secondary supply from batteries whether or not the building is equipped with an emergency generator. Batteries shall be designed for 24-hour supervisory operation followed by 5 minutes of total system load.
All alterations to any existing approved fire alarm system involving or consisting of the replacement of the Fire Command Station, Fire Alarm Control Panel, Central Processing Unit, Floor Control Units, Remote Control Units, Data Gathering Panels, Terminal Transmission Board, and other similar or equivalent controls or control panels shall be required to comply with Section (C3) above. For systems in buildings which are in compliance with Sections (C)1 or (C2) above, compliance with Section (C3) is optional.

D. ASSOCIATED SYSTEMS

Associated systems listed below shall have their actuation added to the Fire Control Panel:

1. Smoke detection systems.
2. Sprinkler water flow alarms.
3. Thermostatic alarms.
4. Fan shut down for HVAC and automatic smoke exhausters.
5. Stage fire control and deluge systems.
6. Other approved systems.

NOTE: The associated systems listed above shall all be interconnected with the Class “G” fire signal systems and shall have their alarm and common trouble signals indicated at the main control board.

E. WIRING

(1) Power Conductors (Above 75 volts) shall be:
(a) Copper: THHN, THWN/THHN, TFFN, TFN, FEP, RHH, RHW-2, XHH, or XHHW; minimum 600 volts; 90 C; for installation in rigid metallic conduit (RMC), intermediate metallic conduit (IMC) or electric metallic tubing (EMT).
(b) Cable type MI, M.E.A. approved for 2-hour fire resistance rating.
(2) Low Voltage Conductors (75 volts and less) shall be:
(a) Copper; THHN, THWN/THHN, TFFN, TFN, FEP, RHH, RHW-2, XHH, XHHW, minimum 600 volts; 90 C; for installation in rigid metallic conduit (RMC), intermediate metallic conduit (IMC) or electric metallic tubing (EMT)
(b) Minimum wire size No.18 AWG.
(c) Multiconductor cables run in raceways, or exposed as described hereinafter, shall meet the following additional requirements:

- Type FPLP only; minimum insulation thickness 15 mils; minimum temperature 150 C; colored red.
- Red colored jacket overall; minimum thickness 25 mils.
- Cable printing as per UL1424; must bear additional description” ALSO CLASSIFIED NYC CERT. FIRE ALARM CABLE" legible without removing jacket.

(3) Installation of Conductors and Raceway shall be in accordance with the following:
(a) Power conductors shall not be installed in common raceways with low voltage conductors.
(b) Comply with applicable requirements of New York City Electrical Code, except where requirements are exceeded by this Reference Standard.
(c) Conductors other than M.I. cable shall be run in raceway, except as specifically described below.
(d) Multi-conductor cables may be installed without raceway protection where cable is protected by building construction. Where not protected by building construction, cables shall be located 8 feet or more above the finished floor and not subject to physical tampering or hazard. Locations within eight feet of the finished floor that are deemed as "protected by building construction" shall include raised floors, shafts, telephone and communication equipment rooms and closets, and rooms used exclusively for fire alarm system equipment. In any suppression and extinguishing system activated by automatic fire detection, including, but not limited to, pre-action sprinkler, deluge sprinkler, clean air agent, halon, range hood, C02 and dry chemical, multi-conductor cables shall be installed in RMC, IMC, or EMT.
(e) All wiring within mechanical and elevator equipment rooms shall be run in raceway.
(f) Raceways run within 8 feet of finished floor in garage areas, loading docks, mechanical rooms, and elsewhere where subject to mechanical damage, shall be rigid galvanized steel conduit only.
(g) Where wiring is required to be run in raceway, install conductors in rigid metallic conduit (RMC), intermediate metallic conduit (IMC) or electric metallic tubing (EMT), except that multi-conductor cables may also be run in surface metal raceway. Flexible metallic conduit, not exceeding 36" in length, shall be permitted for final connections to initiating and notification devices. Conductors for other electrical systems shall not be installed in raceways containing REFERENCE STANDARD 17 conductors.

(h) Where allowed to be run without raceway protection, multi-conductor cables shall be installed as follows:

- Cables shall not depend on ceiling media, pipes, ducts, conduits, or equipment for support. Support independently from the building structure.
- Secure by cable ties, straps or similar fittings, so designed and installed as not to damage the cable. Secure in place at intervals not exceeding 5'-0" on centers and within 12" of every associated cabinet, box or fitting.

(i) Installation of raceways, boxes and cabinets shall comply with the following general requirements.

- Covers of boxes and cabinets shall be painted red and permanently identified as to their use.
- Penetrations of fire-rated walls, floors or ceilings shall be fire stopped.
- Within stairways, raceways within 8 feet of the floor shall not be installed so as to reduce or obstruct the stairway radius.
- Raceways or cables shall not penetrate top of any equipment box or cabinet.

(j) All conduits supplying 120-volt power to the fire command station and/or fire alarm control unit and/or to outlying control cabinets, shall contain a green insulated grounding conductor sized in accordance with the New York City Electrical Code (#10 AWG minimum). The grounding conductor shall be connected to the ground bus or other suitable grounding terminal in each box and cabinet in which it enters. At the fuse cutout panel supplying the fire alarm system, provide a grounding electrode conductor sized and installed in accordance with the New York City Electrical Code (#10 AWG minimum).

(k) For cabinets whose 120-volt supply is not derived from the main fire alarm system cutout panel, provide green insulated separate grounding electrode conductors, sized and installed as per New York City Electrical Code (#10 AWG minimum). In steel-framed buildings, a connection to local steel structure will be acceptable.

(l) Splices and terminations of wires and cables shall be as follows:

- Permitted only in boxes or cabinets specifically approved for the purpose.
- Utilize mechanical connections specifically approved by U.L. 486 A & C for the conductors, or if soldered, first joined so as to be mechanically and electrically secure prior to soldering and insulating. Temperature rating of completed splices shall equal or exceed the temperature rating of the highest rated conductor.

(m) Wiring for audible and visual alarm notification devices shall be arranged so that a loss of a portion of the wiring on a floor will not render more than 60% of the devices of each type inoperative, and the devices shall be so connected to the circuitry (i.e., by means of alternate circuits) as to maintain at least partial audibility/visibility throughout the entire floor.

F. FIRE SIGNAL SENDING STATIONS, CLASS "G" NON-CODED MANUAL STATION AND THE FIRE SIGNAL CONTROL STATION

1. There shall be at least one (1) fire signal sending station in each story of a building located in each path of escape. Additional stations shall be installed so that no point on any floor shall be more than two hundred feet from the nearest station.

2. Doors of sending stations shall be painted Fire Department "red," and lettered: "Fire Emergency - Open Door to Operate", or words to that effect. The instructions for operating the station shall be prominently displayed on an instruction card or, the dover of the station.

3. All current carrying parts shall be insulated from parts carrying current of opposite polarity with approved insulating material.

4. All pull lever type stations shall be constructed with an outer door and means to protect the pull lever against accidental operations. The wording: "In Case of Fire, Open Door and Pull Down Lever", in raised letters or the equivalent instructions, shall appear on the door.

5. For systems using break-glass or break-rod type stations, at least one extra glass pane or glass rod for each station in the system shall be kept in the building. Break glass stations shall have the glass rod or pane mounted on the surface of the station covers or, mounted internally in such a manner that the glass must be broken to actuate the sending station. Suitable hammers on chains attached to the stations, or other approved means for breaking the glass, shall be provided. Stations accomplishing the "break glass" principle using other approved means shall not be required to provide hammers or spare glass.

6. Non-Coded Stations

a. Non-Coded closed circuit fire signal stations shall be operated by a break-glass or break-rod or pull lever device so arranged that the signal cannot be interfered with except by resetting or replacement of the glass or rod by an authorized person.

b. The construction and materials shall be equivalent to that of the standard approved type coded closed circuit station described in Reference Standard RS 17-3, except that the contacts shall be of sufficient capacity to safely carry the entire operating current of the signal circuit without excessive heating.

7. Stations Testing Devices. Provisions shall be made for a silent test of sending station mechanisms without operating the signalling devices. Such test device shall be designed to prevent any person, except those in authority, from operating the test device and to prevent the possibility of the box being left inoperative after the test.

8. Provisions shall be made to supply an audible as well as visual signal at the fire signal control station from the fire signal station.

G. EVACUATION SOUNDING DEVICES

1. Approved single stroke gongs or dedicated loud speakers shall be provided as the sounding devices. Approved loud speakers shall have heat resistant driven elements and shall conform to Reference Standard RS-17-5. When recessed loud speakers are used, they shall conform to the performance requirements of Reference Standard RS-17-5. The loud speakers, when mounted on walls, shall be mounted upon interior walls in preference to building core walls.

2. Recessed loud speakers, if used, shall be located not more than ten feet from the entrance to each required exit to insure proper evacuation signal reproduction. This spacing is based upon normal eight feet to ten feet ceiling height. Surface mounted loud speakers shall be mounted within ten feet of each egress to insure proper evacuation signal reproduction. For unusual conditions and higher ceilings. the loud speakers shall not be mounted more than twenty feet above the floor.

3. For new fire protective signal systems only, in the entire building when at least twenty-five (25%) percent of the occupants have hearing impairments and in those areas where the ambient noise level exceeds ninety decibels (90 dBA) on the "A" scale, provided in all applicable areas at least one visual evacuation signal. This signal shall be a xenon lamp flasher having a minimum flash intensity of one million candlepower, dissipating for each lamp flash a minimum energy of fifteen joules, and shall be wall mounted at a minimum height of nine feet above the floor. The lamp flasher shall be totally enclosed so that all visible and ultraviolet radiations at or below its center line shall be blocked and so that all visible upward radiation, shall be transmitted. The visual evacuation signal shall flash once every three seconds, repeated twelve times.

4. The evacuation sounding devices may be utilized for other audible purposes, including building security, when means is provided to insure fire evacuation signal priority.

H. FIRE SIGNAL SYSTEM CONTROL STATION

1. Supervising Circuits

a. Class "G" fire protective signal systems shall be supervised, except for the alphanumeric annunciator.

b. The supervising circuit shall be provided with a trouble signal arranged to sound continuously in case of failure of the primary power source or other derangements. The trouble signal shall be so located that it will be within audible range of a responsible person in the building.

c. Trouble signals may be fitted with silencing switches only when the switch is connected in such a manner that the act of silencing the signal by the operation of the switch will automatically transfer the trouble signal to a red lamp on the fire signal control station. When the trouble has been repaired, the alarm signal shall sound until the silencing switch has been reset to operate under normal conditions.

d. The trouble signal shall give a distinctive tone.

2. Protection of Sending and Sounding Devices. In fire protective signal systems, the sending stations and sounding devices shall be enclosed in metal casings, made dust proof and damp proof when necessary, and shall be clearly marked with instructions for use.

3. Standards of Electrical Signal Apparatus. All electricity actuated apparatus used in fire protective signal systems shall be so designed and constructed that it will operate satisfactorily at an input voltage level of twenty (20%) percent below or ten (10%) percent above the normal rated voltage.

4. Insulation

a. Insulating materials used shall be varnished cambric, bakelite, mica or other equivalent insulating material.

b. The use of fiber or paper as an insulating material is prohibited.

c. The insulating materials used shall be capable of withstanding an insulation breakdown test of one thousand volts ac., plus twice the operating voltage applied for one minute.

5. Electromagnets

a. Electromagnetic windings shall be impregnated with an insulating and moisture repelling compound of the sil ence or epoxy type.

b. Electromagnetic coils used on alternating current. when composed of enameled wire, shall have additional approved insulation on each wire. The coils may be of the form wound type.

c. A protective cover to prevent mechanical damage shall be provided over the entire coil.

d. Electromagnetic coils shall be fastened to prevent floating.

e. Electromagnetic cores shall be of the best grade of ferrous material so as to reduce to a minimum the possibility of failure due to residual magnetism.

f. Electromagnetic cores for use on alternating current shall be of laminated construction or other approved method to prevent heating and to promote efficiency.

g. Electromagnetic cores of relays shall be treated to prevent corrosion. Paint or varnish shall not be used for this purpose.

h. Nonmagnetic freeze pins shall be used to prevent two magnetic surfaces from making physical contact with each other.

6. Wiring

a. All connections shall be secure and properly protected and, where subject to motion, shall be of approved flexible wire. All wiring of the fire signal control station, the fire station circuits and the supervisory circuits, shall be approved.

b. Binding posts, when used, shall be of such design that the wire is held between two flat surfaces. Binding posts shall be mounted on an approved terminal block or insulating strip. The spaces between the binding posts shall be at least one half inch, unless they are separated by approved barriers.

c. Digital electronic printed circuit cards, when used, shall be one sixteenth inch thick glass fiber epoxy resin. The cards shall have color coded ejectors used to group cards according to function so that they may be located quickly and shall have plated through holes as feed through on all logic cards. The connection fingers shall be gold, plated over nickel.

7. Overload Protective Devices. The digital electronic circuits shall provide protection of all equipment and circuits by opening up the circuit to the equipment or devices protected. The operation of this overload circuit shall cause the trouble signal to sound at the fire signal control station.

8. The control boards shall operate so that trouble in an individual zone may be shunted out without affecting the operation of the rest of the zones of the system.

9. Provision shall be made for sufficient wire gutter space around the panel. The gutter space shall be a minimum of two inches at the sides, the top and the bottom. The wire in the gutter space shall be properly laced in a neat and workmanlike manner on all control boards.

10. Conduit knockouts shall not be provided in the top of the control board cabinet, unless designed and approved for entry on top.

11. A wiring diagram of the fire protective signal system approved by the Fire Commissioner and the approved card of instruction properly marked, shall be provided and securely fastened within the control board cabinet and at the fire signal control station. When it becomes necessary to mount the diagram outside of the cabinet, the diagram shall be framed under glass or an equivalent material.

12. Control Boards

a. The control boards and amplifiers used for voice communication and alarm shall be located in a safe, moisture and dust free location secure from unauthorized tampering, Otherwise a ventilated cabinet provided with a lock and a key suitably identified, shall be provided.

b. the amplifiers for the Class "G" systems shall have the capacity to deliver sufficient power to operate all evacuation sounding devices and the voice communication systems, and have a fifty (50%) percent reserve power capacity. In addition, the amplifiers shall be wired in such a manner that the imminent failure or actual failure of amplifiers shall shut down the amplifiers and shall indicate a trouble condition. The removal of an amplifier shall be indicated by a trouble signal at the fire signal control station. The opening of the control cabinets shall be supervised by a tamper switch producing a manually resetting trouble alarm at the fire signal control station.

13. Fire Control Station. The Station shall consist of the following equipment:

a. Time delay means in accordance with Section II A. above. At the end of the time delay or, at the time of the by pass, the interior evacuation signal shall sound and all interconnected controls shall operate.

b. Alphanumeric annunciation in accordance with Section II B. above.

c. A key controlled signal cancellation in accordance with Section II C. above.

d. A by-pass means in accordance with Section II D. above.

e. A printer which records system events in accordance with the Equipment Requirements of this standard, located in the Building Engineer's office.

f. Five day week digital electronic clocks to revert the pre-signal operation to normal (zero time delay) operation after normal building hours, and permitting immediate evacuation sounding after signal initiation determined by matching two successive code rounds.

I. PAINTING OF EQUIPMENT

All enclosing cases for fire signal, sprinkler alarm detection and associated systems alarm apparatus shall be painted Fire Department "red", except where approval is given by the Commissioner to deviate from this requirement.

J. INFORMATION DISPLAY SYSTEMS

1. The indicating devices shall describe the purposes they serve. The printed designation on unit or building information display systems indicators shall be legible. All conditions indicated shall remain displayed in accordance with the Equipment Requirements of this standard.

2. A unit information display system shall be so designed that the operation of any station in the unit shall cause a visible and audible signal.

3. Trouble displays shall be so arranged that the indicating device will reset automatically when the cause of the trouble has been removed. The trouble information display system shall be so designed that it will indicate visible and audible trouble signals in the event of trouble occurring on any circuit monitored. The trouble information display system shall be actuated by the operation of supervisory devices.

4. There shall be a silencing means for trouble signals that shall not affect subsequent trouble signals.

5. The information display systems shall be so designed that vibration from without or that caused by a trouble signal within will not operate the indicating devices.

6. All remote information display systems shall be installed in a separate steel cabinet painted Fire Department "red" and provided with approved lock and key. The information display system cabinets shall be marked in white letters at least one inch high with the words: "Fire Signal Information Display System, Zone . . .", or "Fire Signal Trouble Information Display System", whichever the case may be.

7. The information display systems shall be wall mounted and shall have the legend "Fire" in red letters three inches high together with an audible signal, in

addition to the alphanumeric annunciation, and a separate and distinctive trouble signal shall sound. The audible signal accompanying an alarm shall be silenced when the equipment is operated by the Chief Building Administrator or his delegated substitute.

8. The display shall provide a minimum of four simultaneous alarm indications with an overflow memory for additional alarms. Provisions shall be made to distinguish alarm conditions from non alarm conditions. The display shall be updated as new information becomes available. If the same condition exists for more than one point on a floor or, for more than one floor in a building, a separate output entry shall be displayed for each point on the floor or floors.

9. Display Format. Each output entry shall include self identifying memory codes for the type of signal, building or area designation, floor or stair number and point location, and time of day.

10. Maintainability.

a. Manual display of all points of annunciation for test purposes shall be provided.

b. The capability shall be provided for interrogation of any station or sensing element for test purposes, either at the remote device or by interrogation from the office control location. Intervals for testing shall be as approved by the Fire Commissioner.

c. The equipment design shall be modular so that all repairs may be performed at the building site by substitution of duplicate components by authorized repair personnel.

d. On each one of those parts that are of a modular nature shall be included as spares at the control station.

K. LICENSED CONTRACTORS

Only a person holding a license or a special license in accordance with the provisions of the New York City Electrical Code shall install or alter the electrical wiring or apparatus for fire protective signal systems in any building.

L. USED OR REBUILT APPARATUS

Used apparatus shall not be re-used for any interior fire signal system until this used apparatus has been reconditioned in the shop of an approved manufacturer of interior fire alarm apparatus. Approval shall be obtained from the Commissioner prior to installation. The use of reconditioned apparatus whose manufacturer has discontinued manufacturing equipment is prohibited.

****DOB 4-13-03; DOB 1-9-02***

** REFERENCE STANDARD RS 17-3A
STANDARDS FOR THE INSTALLATION OF CLASS E, CLASS C AND CLASS J FIRE ALARM SIGNAL SYSTEMS

(**Note**: References herein to Class E Systems shall be deemed to also include references to Class C and Class J Systems.)

1. (A) SOURCES OF ELECTRICAL POWER

Two sources of electrical power shall be provided as follows:

(1) The primary source shall be generated electric power not exceeding 277/480 volts, supplied by utility company power, or isolated plant.

(2) The secondary source shall be an emergency power system (as per 27-396), emergency generator and/or battery power.

One source of power shall be connected to the system at all times. The primary and secondary power sources shall be so arranged and controlled by automatic transfer switches and/or circuitry that when the primary source of power fails, the secondary source will be connected automatically to the fire alarm signal system. Intermediary devices between the system supply and the source of power, other than fused disconnect switches, transformers, fused cutouts and automatic transfer switches, are prohibited. Such disconnect switches, cutouts, transformers and automatic transfer switches shall supply only the fire alarm system and other Systems covered by this reference standard. When the utility company requires the installation of metering current transformers, the system supply shall be connected on the load side of the current transformers. All installations shall comply with the applicable sections of the New York City Electrical Code.

The primary source of power and the secondary source (if emergency power system or generator) shall each be provided with a means of disconnect from the fire alarm system. For buildings supplied at 120/208 volts, each disconnect shall consist of a fused cutout panel, utilizing cartridge fuses, with provision for interrupting the unfused neutral and all ungrounded conductors. The neutral shall be provided with a removable solid copper bar. The incoming service neutral shall be bonded to the metallic housing of the cutout panel on the line side of the removable bar. The fused cutout panel housing shall consist of a locked metallic cabinet with a hinged door, painted fire department red, and permanently identified as to the system served. For buildings served at 265/460 volts, the primary and secondary service disconnects shall be fused disconnect switches (in lieu of fused cutout panels) in locked, red painted, permanently identified enclosures. The service voltage shall be transformed to 120/208 volts and a fused cutout panel provided within 5 feet of the transformer on the 120/208 volt side. The incoming supply connections shall comply with the NYC Electrical Code, and the fused cutout panel shall comply with the requirements specified hereinbefore.

(B) PRIMARY POWER SOURCE

1. The primary service to the fire alarm system shall be so arranged that the building source of supply can be disconnected without de-energizing the fire alarm supply. To accomplish this, the primary fire alarm supply shall be connected ahead of all building over current protection and/or switching devices.

2. Partial systems such as strobe light control panels, fire alarm, automatic smoke/heat detection, and sprinkler

alarm subsystems and/or other associated systems may be connected to an emergency supply riser panel via a tapped connection, and identified, locked fused cutout box located within 5 feet of the tap.

Where an emergency power system is provided in accordance with section 27-396.4, it shall be connected to the emergency supply riser. Where an E.P.S. is not available, the emergency supply riser shall be connected to a tap ahead of the service switch.

(C) SECONDARY POWER SOURCE

The secondary service to the fire alarm system shall be provided as follows:

1. If the building has a required emergency power system, the secondary source shall be the emergency power system, regardless of whether the primary source is utility company power or an isolated plant.

2 If the building has an emergency generator supplying power to any of the loads listed in 27-396.4, the secondary source shall be the generator.

3. For all other buildings, the secondary source shall be a battery supply provided in accordance with Reference Standard 17-5 for storage batteries. The battery shall be designed for 24-hour supervisory operation of the system, followed by:

a. 6 hour total system load for systems with voice communication capability (A 45 minute period of voice/alarm operation at maximum connected load shall be considered equivalent to 6 hours of total systems operation), or

b. 15 minutes of total system load for systems without voice capability.

4. Partial systems and/or associated systems may derive their secondary supply from batteries whether or not the building is equipped with an emergency generator. Batteries shall be designed for 24-hour supervisory operation followed by 5 minutes of total system load.

All alterations to any existing approved fire alarm system involving or consisting of the replacement of the Fire Command Station, Fire Alarm Control Panel, Central Processing Unit, Floor Control Units, Remote Control Units, Data Gathering Panels, Terminal Transmission Board, and other similar or equivalent controls or control panels shall be required to comply with Section C3 above. For systems in buildings, which are in compliance with Sections (C)1 or(C)2 above, compliance with Section (C)3 is optional.

2. Associated Systems. –

Associated systems listed below shall have their actuation added to the Fire Command Station.

(a) Smoke detection systems.
(b) Sprinkler waterflow alarms.
(c) Thermostatic alarms.
(d) Locked door-fail safe release systems.
(e) Elevator communication and interconnection.
(f) Stair pressurization fan(s) and associated damper(s)

3. Wiring. -

a. Power Conductors (Above 75 volts) shall be:

(1) Copper: THHN, THWN/THHN, TFFN, TFN, FEP, RHH, RHW-2, XHH, or XHHW; minimum 600 volts; 90 C; for installation in rigid metallic conduit (RMC), intermediate metallic conduit (IMC) or electric metallic tubing (EMT).

(2) Cable type MI, M.E.A. approved for fire alarm service.

b. Low Voltage Conductors (75 volts and less)

(1) Copper; THHN, THWN/THHN, TFFN, TFN, FEP, RHH, RHW-2, XHH, XHHW, minimum 600 volts; 90 C; for installation in rigid metallic conduit (RMC), intermediate metallic conduit (IMC), electric metallic tubing (EMT)

(2) Minimum wire size No. 18 AWG.

(3) Multi-conductor cables run in raceways, or exposed as described hereinafter, shall meet the following additional requirements:

a. Type FPLP only; minimum insulation thickness 15 mils; minimum temperature 150C; colored red.

b. Red colored jacket overall; minimum thickness 25 mils.

c. Cable printing as per UL1424; must bear additional description "ALSO CLASSIFIED NYC CERT. FIRE ALARM CABLE," legible without removing jacket.

c. Installation of Conductors and Raceway shall be in accordance with the following:

(1) Power conductors shall not be installed in common raceways with low voltage conductors.

(2) Shall comply with applicable requirements of New York City Electrical Code, except where requirements are exceeded by this Reference Standard.

(3) Conductors other than M.I. cable shall be run in raceway, except as specifically described below.

(4) Multi-conductor cables may be installed without raceway protection where cable is protected by building construction. Where not protected by building construction, cables shall be located 8 feet or more above the finished floor and not subject to physical tampering or hazard. Locations within eight feet of the finished floor that are deemed as "protected by building construction" shall include raised floors, shafts, telephone and communication equipment rooms and closets, and rooms used exclusively for fire alarm system equipment. In any suppression and extinguishing system activated by automatic fire detection, including, but not limited to, pre-action sprinkler, deluge sprinkler, clean air agent, halon, range hood, C02 and dry chemical, multi-conductor cables shall be installed in RMC, IMC, or EMT.

(5) All wiring within mechanical and elevator equipment rooms shall be run in raceway.

(6) Where wiring is required to be run in raceway, install conductors in rigid metallic conduit (RMC), intermediate metallic conduit (IMC) or electric metallic tubing (EMT); except that multi-conductor cables may also be run in surface metal raceway. Flexible metallic conduit, not exceeding 36" in length, shall be permitted

for final connections to initiating and notification devices. Conductors for other electrical systems shall not be installed in raceways containing REFERENCE STANDARD 17 conductors.
(7) Where allowed to be run without raceway protection, multi-conductor cables shall be installed as follows:
a. Cables shall not depend on ceiling media, pipes, ducts, conduits, or equipment for support. Support independently from the building structure.
b. Secure by cable ties, straps or similar fittings, so designed and installed as not to damage the cable. Secure in place at intervals not exceeding 5'0" on centers and within 12" of every associated cabinet, box or fitting.
(8) Raceways run within 8 feet of finished floor in garage areas, loading docks, mechanical rooms, and elsewhere where subject to mechanical damage, shall be rigid galvanized steel conduit only.
(9) Installation of raceways, boxes and cabinets shall comply with the following general requirements.
a. Covers of boxes and cabinets shall be painted red and permanently identified as to their use.
b. Penetrations of fire-rated walls, floors or ceilings shall be fire stopped.
c. Within stairways, raceways within 8 feet of the floor shall not be installed so as to reduce or obstruct the stairway radius.
d. Raceways or cables shall not penetrate top of any equipment box or cabinet.
(10) All conduits supplying 120-volt power to the fire command station and/or fire alarm control unit and/or to outlying control cabinets, shall contain a green insulated grounding conductor sized in accordance with the New York City Electrical Code (#10 AWG minimum). The grounding conductor shall be connected to the ground bus or other suitable grounding terminal in each box and cabinet in which it enters. At the fuse cutout panel supplying the fire alarm system, provide a grounding electrode conductor sized and installed in accordance with the New York City Electrical Code (#10 AWG minimum).
(11) For cabinets whose 120-volt supply is not derived from the main fire alarm system cutout panel, provide green insulated separate grounding electrode conductors, sized and installed as per New York City Electrical Code (#10 AWG minimum). In steel„framed buildings, a connection to local steel structure will be acceptable.
(12) Splices and terminations of wires and cables shall be as follows:
a. Permitted only in boxes or cabinets specifically approved for the purpose.
b. Utilize mechanical connections specifically approved by U.L. 486 A & C for the conductors, or if soldered, first joined so as to be mechanically and electrically secure prior to soldering and insulating. Temperature rating of completed splices shall equal or exceed the temperature rating of the highest rated conductor.
(13) Wiring for audible and visual alarm notification devices shall be arranged so that a loss of a portion of the wiring on a floor will not render more than 60% of the devices of each type inoperative, and the devices shall be so connected to the circuitry (i.e., by means of alternate circuits) as to maintain at least partial audibility/visibility throughout the entire floor.

4. Fire Alarm Sending Stations, Class "E" - Non-Coded Manual Station, and Floor Warden Station. -

(a) There shall be at least one (1) fire alarm sending station in each story of a building located in each path of escape. Additional stations shall be installed so that no point on any floor shall be more than 200 feet from the nearest station.

(b) A floor warden station on each floor shall be located between required stairways, required vertical exits or other required exits. All types of systems shall include a telephone type handset at the floor warden station with integral signaling to the fire command station and may be a part of the speaker system. The handset shall be red and equipped with armor over the wiring between the hand set and its housing which may be installed flush, semi-flush or surface mounted. The housing shall be painted red and identify its function. Equipment shall be installed with a box recessed or surface mounted large enough to include the hand set and test facility, by means of a key, to test the floor automatic and manual alarm device wiring. A pilot light shall indicate the live condition of the floor warden station.

Doors of sending stations shall be painted red and lettered "FIRE EMERGENCY - OPEN DOOR TO OPERATE" or words to this effect. Instructions for operating the station shall be permanently affixed or be an integral part of the station. Instruction cards shall be provided at each station protected by glass or plastic. Designation number of station shall be prominently displayed on instruction card or on cover of station.

(c) All current-carrying parts shall be insulated from parts carrying current of opposite polarity with approved insulating material.

(d) All pull-lever type stations shall be constructed with a door or other approved means to protect the "pull lever" against accidental injury. The wording "IN CASE OF FIRE - OPEN DOOR AND PULL DOWN LEVER" in raised letters or equivalent instructions, shall appear on the door.

(e) For systems using break-glass or break-rod type stations, at least one extra glass rod or glass pane for each station in the system shall be kept in the building. Break glass stations shall have the glass rod or pane mounted on the surface of the station covers or mounted internally in such a manner that the glass must be broken to actuate the sending station. Suitable hammers

on chains attached to the stations or other approved means of breaking the glass, shall be provided. Stations accomplishing the "break glass" principle using other approved means shall not be required to provide hammers or spare glasses.

(f) Non Coded Stations:

(1) Non-coded closed circuit fire alarm stations may be operated by a break-glass or break-rod or a pull lever device so arranged that the alarm cannot be interfered with except by resetting or replacement of the glass or rod by an authorized person.

(2) The construction and materials shall be equivalent to that of the standard approved type coded closed circuit station described in reference standard RS 17-3 except that the contacts shall be of sufficient capacity to safely carry the entire operating current of the alarm circuit without excessive heating.

(g) Station Testing Devices - Provisions shall be made for a silent test of sending station mechanisms without operating the signaling devices. Such test device shall be designed to prevent any person, except those in authority, from operating the same and to prevent the possibility of the box being left inoperative after the test.

(h) Provision shall be made to supply an audible and visual signal at the fire command station from the floor warden station.

(i) A designated station on each floor shall have the capability of operating the loud speakers for that floor.

5. Alarm Sounding Devices. -

(a) Approved speakers shall be provided as the sounding devices. The alarm sound shall be a generated gong, bell, horn, whistle or other acceptable signal. Chime sounds may be installed only with the approval of the commissioner. Approved speakers shall have heat resistant driven elements and shall conform to reference standard RS 17-5.

When recessed speakers are used they shall conform to the performance requirements of reference standard RS 17-5. Speakers when mounted on walls shall be mounted upon tenant walls in preference to building core walls.

(b) Recessed speakers if used shall be located not more than 10 feet from the entrance to each required exit to insure proper alarm signal reproduction. This spacing is based upon normal 8 feet - 10 feet ceiling height. Surface mounted type speakers shall be mounted within 10 feet of each egress to insure proper alarm signal reproduction. For unusual conditions and higher ceilings, speakers shall not be mounted more than 20 feet above floor.

(c) The alarm sounding devices may be utilized for other audio purposes including building security if means is provided to insure fire alarm priority.

6. Fire Alarm System Control Boards and Command Stations. -

(a) Supervising Circuit. -

(1) Class "E" fire alarm systems shall be supervised.

(2) The supervising circuit shall be provided with a trouble signal arranged to sound continuously in case of failure of the primary power source. The trouble signal shall be so located that it will be within audible range of a responsible person in the building.

(3) Trouble signals may be fitted with silencing switches only when the switch is connected in such a manner that the act of silencing the signal by the operation of the switch automatically transfers the trouble signal to a red lamp on the fire command station. When the trouble has been repaired, the alarm signal shall sound until the silencing switch has been reset to operate under normal conditions.

(4) The trouble signal shall give a distinctive signal.

(b) Protection of Sending and Sounding Devices. -In fire alarm signal systems, sending stations and sounding devices shall be enclosed in metal casings, made dust proof and damp proof when necessary, and clearly marked with instructions for use.

(c) Standards of Electric Alarm Apparatus. -All electrically actuated apparatus used in fire alarm systems shall be so designed and constructed that it will operate satisfactorily at an input voltage level 15 per cent below or 10 per cent above normal rated voltage.

(d) Insulation. -

(1) Insulating materials used shall be varnished cambric, bakelite, mica, or equivalent insulating material.

(2) The use of fiber or paper as an insulating material is prohibited.

(3) The insulating materials used shall be capable of withstanding an insulation breakdown test of 1,000 volts a.c. plus twice operating voltage applied for 1 minute.

(e) Electromagnets. -

(1) Electromagnet windings shall be impregnated with an insulating, moisture repelling compound of the silicone or epoxy type.

(2) Electromagnet coils used on alternating current, when composed of enameled wire shall have additional approved insulation on each wire. The coils may be of the form-wound type.

(3) A protective cover to prevent mechanical damage shall be provided over the entire coil.

(4) Electromagnetic coils shall be fastened to prevent floating.

(5) Electromagnet cores shall be of the best grade of ferrous material so as to reduce to a minimum the possibility of failure due to residual magnetism.

(6) Electromagnet cores for use on alternating current shall be of laminated construction or other approved method to prevent heating and promote efficiency.

(7) Electromagnetic cores of relays shall be treated to prevent corrosion. Paint or varnish shall not be used for this purpose.

(8) Non-magnetic freeze pins shall be used to prevent two magnetic surfaces from making physical contact with each other.

(f) Relays. -

(1) The armatures of all relays shall depend on gravity or magnetic attraction for their operation and may be assisted by a spring.

(2) Adjustments shall be of such a character that they can be securely locked.

(g) Overload protective devices. -Electronic circuits shall provide protection of all equipment and circuits by opening up the circuit to the equipment or devices protected. The operation of this "overload circuit" shall cause the trouble signal to sound at the fire command station.

(h) Control boards shall operate so that troubles in individual zones may be shunted out without affecting the rest of the system.

(i) Provision shall be made for sufficient wire gutter space around the panel. Gutter space shall be a minimum of 2 inches at sides, top, and bottom. Wire in gutter space shall be properly laced in a neat and workmanlike manner on all control boards.

(j) Conduit knockouts shall not be provided in the top of the control board cabinet, unless designed and approved for entry on top.

(k) A wiring diagram of the alarm system approved by the commissioner and the approved card of instruction properly marked and securely fastened shall be provided within the control board cabinet and at the fire command station. When it becomes necessary to mount the diagram outside of the cabinet, the diagram shall be framed under glass or equivalent material.

(l) Control Boards. -

(1) Control boards and amplifiers used for voice communication and alarms shall be located in a safe, moisture and dust free location secure from unauthorized tampering. Otherwise a ventilated cabinet provided with a lock and key, suitably identified, shall be provided.

(2) Amplifiers for class E systems shall have the capacity to deliver sufficient power to operate all alarm sounding devices and voice communication system and have a 50 per cent reserve power capacity. In addition the amplifiers shall be wired in such a manner that the imminent failure or actual failure of amplifiers shall shut down the amplifier and indicate a trouble condition. Removal of an amplifier shall be indicated by a trouble signal at the fire command station. Opening of the control cabinets shall be supervised by a tamper switch producing a manually resettable trouble alarm at the fire command station.

(m) Fire Command Station . -The fire command station shall contain all the components described in the building code and shall have the capability of overriding floor warden stations. The command station console shall be provided with a hinged cover which permits the flashing "FIRE" visible signal to be seen. The cover shall be provided with an approved lock and key. The fire command station shall be provided with an information display system so located as to provide minimum distortion due to an angular line-of-sight and ambient lighting conditions. This display shall have the capability to monitor the following systems in order of listed priority:

(1) Manual Fire Alarm
(2) Smoke Detection
(3) Sprinkler Waterflow
(4) Elevator Lobby Detector
(5) Fire Signal Activation
(6) Central Office Notification
(7) Fan System on - Fan System off
(8) Fail Safe Locked Door
(9) Fire Systems Trouble
(10) Fire Signal Trouble
(11) Tamper Switch Alarm
(12) Power Source
(13) Test/Normal Mode
(14) Other Information as Desired
(15) Stair pressurization fan(s) and associated damper(s).

7. Painting of Equipment. -All enclosing cases for fire alarm sprinkler alarm, smoke detection, and associated systems alarm apparatus shall be painted fire department red, except where approval is given by the commissioner to deviate from this requirement. The lobby information display system may be painted or finished to suit the owner of the building.

8. Information Display Systems. -

*(a) Information display systems used in connection with Class E Fire Alarm Signal Systems shall be of an approved electrically supervised type. The indicating devices shall describe the purpose they serve. The printed designation on unit or building information display system indicators shall be legible. The mechanism shall be so arranged that once operated, the indicating device must be reset manually. All conditions indicated shall remain displayed until manually cleared at the Fire Command Station. Fire Command Stations shall provide alarm information in a direct manner; no references to numeric codes shall be permitted. Where a CRT display is provided, a specially marked control shall be provided that will enable the system operator to determine the alarm source and other related pertinent information.

Local Law 16-1984

(b) A unit information display system shall be so designed that the operation of any station in the unit causes a visible and audible signal.

(c) Trouble displays shall be so arranged that the indicating device will reset automatically when the

cause of trouble has been removed. The trouble information display system shall be so designed that it will indicate visible and audible trouble signals in the event of trouble occurring on any circuit monitored. The trouble information display system shall be actuated by the operation of supervisory devices.

(d) A silencing switch shall be provided for trouble signals, but shall not affect subsequent trouble signals.

(e) Information display systems shall be so designed that vibration from without or that caused by a trouble signal within will not operate the indicating devices.

(f) All remote information display systems shall be installed in a separate steel cabinet painted red, provided with approval lock and key. Information display system cabinets shall be marked in white letters at least one inch high with the words "FIRE ALARM INFORMATION DISPLAY SYSTEM, ZONE ------ " or "FIRE ALARM TROUBLE INFORMATION DISPLAY SYSTEM", whichever the case may be.

(g) Information display systems located in the lobby of a building whether an integral part of the fire command station or wall mounted shall have the legend "FIRE" in red letters three inches high together with an audible signal in addition to the lamp, target drop, cathode ray tube, light emitting diode, nixie, etc. and a separate or distinctive trouble signal shall sound. The audible signal accompanying an alarm shall be automatically silenced when the fire command station is operated by the fire safety director or his delegated substitute. Remote information display systems shall operate in the same manner.

(h) The display shall provide a minimum of four simultaneous alarm indicators with an overflow indication for additional alarms. Provisions shall be made to distinguish alarm conditions from non-alarm conditions. The display shall be updated as new information becomes available. If the same condition exists for more than one point on a floor or for more than one floor in a building, such as a fire gong actuation or public address, a separate output entry shall be displayed for each point or floor.

(i) Display format. - Each output entry shall include self-identifying mnemonic codes for the type of signal, building or area designation, floor or stair number and point location, and time of day. Systems utilizing gravity drops or lamps as point identification, may provide a hard copy print out.

(j) Maintainability. -

(1) Manual display of all points of annunciation for test purposes shall be provided.

(2) Capability shall be provided for interrogating any station or sensing element for test purposes, either at the remote device or by interrogation from the fire command station. Intervals of testing shall be as approved.

(3) Equipment designed shall be modular so that all repairs may be performed on-site by substitution of duplicate components by authorized personnel.

(4) One each of these parts that are of a modular nature shall be included as spares at the fire command station.

9. Licensed Contractors. -Only a person holding a license or a special license in accordance with the provisions of the New York city electrical code, shall install, alter, or repair electrical wiring or apparatus for fire alarm systems in any building.

10. Used or Rebuilt Apparatus. -Used apparatus shall not be re-used for any interior fire alarm system until the same has been reconditioned in the shop of any approved manufacturer of interior fire alarm apparatus. Approval shall be obtained from the commissioner prior to installation. The use of reconditioned apparatus whose manufacturer has discontinued manufacturing equipment is prohibited.

11. Standpipe Fireline Telephone and Signal System. - Where the standpipe telephone and signal system is arranged to be used as a modified class E fire alarm signal system as provided in the building code, retractable telephone handsets shall be provided in pump rooms. The telephone in pump rooms shall be equipped with a loudspeaking receiver so that a voice can be distinctly heard at least 15 feet from the receiver.

12. Locked Door Fail Safe Systems. -

(a) Stairway reentry doors which are locked from the stairway side as permitted in section C26-604.4 of the administrative code shall be provided with an electrical fail safe strike release mechanism that will permit the door to be opened without a key when any automatic fire detecting device operates, elevator "Fireman Service" operates or power failure shall occur. In addition, provisions shall be made to permit these doors to be opened from the command station or mechanical control center. This system shall be manually reset.

(b) Wiring for these systems shall comply with rule 6(a), (b), (c) and (d) of this reference standard and be electrically supervised for open and shorted or grounded circuits.

(c) Transformers for release mechanisms shall be rated for the proper use load, identified and located in proximity of the power supply for other fire alarm systems.

(d) The release mechanisms shall be operated from a separate control relay having the capability of indicating trouble on a separate trouble signal and at the information display system on the command console and at the mechanical control center. The mechanism shall also indicate a "failed" and "open" status on the command console and at the mechanical control center.

*(e) Where a fail-safe reentry door has been converted to conform to the requirements of this code by means of an electric strike release, provision shall be made to

insure that the door will remain "Latched" even if "Unlocked".
Local Law 16-1984

13. Radio System. -A radio or radio/wire system shall comply with the following requirements:

(a) The emergency notification portion of the system equipment shall be capable of the following:

(1) Have the capability of individual, group or entire building notification of an alarm tone and voice intelligibility.

(2) Receivers and wire extension speakers shall be permanently mounted to a wall or pillar.

(3) There shall be automatic switch over to emergency battery power supply.

(b) Two way communication shall be accomplished by fixed transmitters and receivers.

(c) Equipment shall be Federal Communications Commission (FCC) approved, FM type, solid state, above 150.8 MHz. Selective signaling shall be accomplished by a minimum of 2 tone code operation.

(d) The antenna shall be designed and installed for use at the fire command station transmitter and be capable of transmitting to all fixed stations.

(e) The fire command station unit shall have the capability of locking out all other remote control points.

14. Sprinkler Waterflow Alarms. -A sprinkler waterflow alarm may be arranged to be used as part of a modified class E fire alarm signal system provided: the alarm signal system shall be an approved electrically supervised closed circuit information display system capable of indicating the floor where the sprinkler was activated.

15. Elevator communication:

Elevator intercommunication shall be acceptable for communications with the Fire Command Station if there is a means of communication proximate to the Fire Command Station.
DOB 4-13-03; Local Law 16-1987; Local Law 16-1984; Local Law-5-1973

** REFERENCE STANDARD RS 17-3B

STANDARDS FOR THE INSTALLATION OF MODIFIED CLASS E, AND MODIFIED CLASS J FIRE ALARM SIGNAL SYSTEMS

(Note: References herein shall be deemed to also include references to Modified Class J Systems.)

1. (A) SOURCES OF ELECTRICAL POWER

Two sources of electrical power shall be provided as follows:

(1) The primary source shall be generated electric power not exceeding 277/480 volts, supplied by utility company power, or isolated plant.

(2) The secondary source shall be an emergency power system (as per 27-396), emergency generator and/or battery power.

One source of power shall be connected to the system at all times. The primary and secondary power sources shall be so arranged and controlled by automatic transfer switches and/or circuitry that when the primary source of power fails, the secondary source will be connected automatically to the fire alarm signal system. Intermediary devices between the system supply and the source of power, other than fused disconnect switches, transformers, fused cutouts and automatic transfer switches, are prohibited. Such disconnect switches, cutouts, transformers and automatic transfer switches shall supply only the fire alarm system and other Systems covered by this reference standard. When the utility company requires the installation of metering current transformers, the system supply shall be connected on the load side of the current transformers. All installations shall comply with the applicable sections of the New York City Electrical Code.

The primary source of power and the secondary source (if emergency power system or generator) shall each be provided with a means of disconnect from the fire alarm system. For buildings supplied at 120/208 volts, each disconnect shall consist of a fused cutout panel, utilizing cartridge fuses, with provision for interrupting the unfused neutral and all ungrounded conductors. The neutral shall be provided with a removable solid copper bar. The incoming service neutral shall be bonded to the metallic housing of the cutout panel on the line side of the removable bar. The fused cutout panel housing shall consist of a locked metallic cabinet with a hinged door, painted fire department red, and permanently identified as to the system served. For buildings served at 265/460 volts, the primary and secondary service disconnects shall be fused disconnect switches (in lieu of fused cutout panels) in locked, red painted, permanently identified enclosures. The service voltage shall be transformed to 120/208 volts and a fused cutout panel provided within 5 feet of the transformer on the 120/208 volt side. The incoming supply connections shall comply with the NYC Electrical Code, and the fused cutout panel shall comply with the requirements specified hereinbefore.

(B) PRIMARY POWER SOURCE

1. The primary service to the fire alarm system shall be so arranged that the building source of supply can be disconnected without de-energizing the fire alarm supply. To accomplish this, the primary fire alarm supply shall be connected ahead of all building over current protection and/or switching devices.

2. Partial systems such as strobe light control panels, partial fire alarm, automatic smoke/heat detection, and sprinkler alarm subsystems and/or other associated systems may be connected to an emergency supply riser panel via a tapped connection, and identified, locked fused cutout box located within 5 feet of the tap.

Where an emergency power system is provided in accordance with section 27-396.4, it shall be connected to the emergency supply riser. Where an E.P.S. is not available, the emergency supply riser shall be connected to a tap ahead of the service switch.

(C) SECONDARY POWER SOURCE

The secondary service to the fire alarm system shall be provided as follows:

1. If the building has a required emergency power system, the secondary source shall be the emergency power system, regardless of whether the primary source is utility company power or an isolated plant.

2 If the building has an emergency generator supplying power to any of the loads listed in 27-396.4, the secondary source shall be the generator.

3. For all other buildings, the secondary source shall be a battery supply provided in accordance with Reference Standard 17-5 for storage batteries. The battery shall be designed for 24-hour supervisory operation of the system, followed by:

a. 6 hour total system load for systems with voice communication capability (A 45 minute period of voice/alarm operation at maximum connected load shall be considered equivalent to 6 hours of total systems operation), or

b. 15 minutes of total system load for systems without voice capability.

4. Partial systems and/or associated systems may derive their secondary supply from batteries whether or not the building is equipped with an emergency generator. Batteries shall be designed for 24-hour supervisory operation followed by 5 minutes of total system load.

All alterations to any existing approved fire alarm system involving or consisting of the replacement of the Fire Command Station, Fire Alarm Control Panel, Central Processing Unit, Floor Control Units, Remote Control Units, Data Gathering Panels, Terminal Transmission Board, and other similar or equivalent controls or control panels shall be required to comply with Section C3 above. For systems in buildings, which are in compliance with Sections (C)1 or (C)2 above, compliance with Section (C)3 is optional.

2. Associated Systems. –

Associated systems listed below shall have their actuation added to the Fire Command Station.

(a) Smoke detection systems
(b) Sprinkler waterflow alarms
(c) Thermostatic alarms
(d) Locked door-fail safe release systems
(e) Elevator communication and interconnection.

3. Wiring. –

a. Power Conductors (Above 75 volts) shall be:

(1) Copper: THHN, THWN/THHN, TFFN, TFN, FEP, RHH, RHW-2, XHH, or XHHW; minimum 600 volts; 90 C; for installation in rigid metallic conduit (RMC), intermediate metallic conduit (IMC) or electric metallic tubing (EMT).

(2) Cable type MI, M.E.A. approved for 2-hour fire resistance rating.

b. Low Voltage Conductors (75 volts and less)

(1) Copper; THHN, THWN/THHN, TFFN, TFN, FEP, RHH, RHW-2, XHH, XHHW, minimum 600 volts; 90 C; for installation in rigid metallic conduit (RMC), intermediate metallic conduit (IMC), electric metallic tubing (EMT), and

(2) Minimum wire size No. 18 AWG.

(3) Multi-conductor cables run in raceways, or exposed as described hereinafter, shall meet the following additional requirements:

a. Type FPLP only; minimum insulation thickness 15 mils; minimum temperature 150C; colored red.

b. Red colored jacket overall; minimum thickness 25 mils.

c. Cable printing as per UL1424; must bear additional description "ALSO CLASSIFIED NYC CERT. FIRE ALARM CABLE," legible without removing jacket.

c. Installation of Conductors and Raceway shall be in accordance with the following:

(1) Power conductors shall not be installed in common raceways with low voltage conductors.

(2) Shall comply with applicable requirements of New York City Electrical Code, except where requirements are exceeded by this Reference Standard.

(3) Conductors other than M.I. cable shall be run in raceway, except as specifically described below.

(4) Multi-conductor cables may be installed without raceway protection where cable is protected by building construction. Where not protected by building construction, cables shall be located 8 feet or more above the finished floor and not subject to physical tampering or hazard. Locations within eight feet of the finished floor that are deemed as "protected by building construction" shall include raised floors, shafts, telephone and communication equipment rooms and closets, and rooms used exclusively for fire alarm system equipment. In any suppression and extinguishing system activated by automatic fire detection, including, but not limited to, pre-action sprinkler, deluge sprinkler, clean air agent, halon, range hood, C02 and dry chemical, multi-conductor cables shall be installed in RMC, IMC, or EMT.

(5) All wiring within mechanical and elevator equipment rooms shall be run in raceway.

(6) Raceways run within 8 feet of finished floor in garage areas, loading docks, mechanical rooms, and elsewhere where subject to mechanical damage, shall be rigid galvanized steel conduit only.

(7) Where wiring is required to be run in raceway, install conductors in rigid metallic conduit (RMC), intermediate metallic conduit (IMC) or electric metallic tubing (EMT); except that multi-conductor cables may also be run in surface metal raceway. Flexible metallic

conduit, not exceeding 36" in length, shall be permitted for final connections to initiating and notification devices. Conductors for other electrical systems shall not be installed in raceways containing REFERENCE STANDARD 17 conductors.

(8) Where allowed to be run without raceway protection, multi-conductor cables shall be installed as follows:

a. Cables shall not depend on ceiling media, pipes, ducts, conduits, or equipment for support. Support independently from the building structure.

b. Secure by cable ties, straps or similar fittings, so designed and installed as not to damage the cable. Secure in place at intervals not exceeding 5'0" on centers and within 12" of every associated cabinet, box or fitting.

(9) Installation of raceways, boxes and cabinets shall comply with the following general requirements.

a. Covers of boxes and cabinets shall be painted red and permanently identified as to their use.

b. Penetrations of fire-rated walls, floors or ceilings shall be fire stopped.

c. Within stairways, raceways within 8 feet of the floor shall not be installed so as to reduce or obstruct the stairway radius.

d. Raceways or cables shall not penetrate top of any equipment box or cabinet.

(10) All conduits supplying 120-volt power to the fire command station and/or fire alarm control unit and/or to outlying control cabinets, shall contain a green insulated grounding conductor sized in accordance with the New York City Electrical Code (#10 AWG minimum). The grounding conductor shall be connected to the ground bus or other suitable grounding terminal in each box and cabinet in which it enters. At the fuse cutout panel supplying the fire alarm system, provide a grounding electrode conductor sized and installed in accordance with the New York City Electrical Code (#10 AWG minimum).

(11) For cabinets whose 120-volt supply is not derived from the main fire alarm system cutout panel, provide green insulated separate grounding electrode conductors, sized and installed as per New York City Electrical Code (#10 AWG minimum). In steel,,framed buildings, a connection to local steel structure will be acceptable.

(12) Splices and terminations of wires and cables shall be as follows:

a. Permitted only in boxes or cabinets specifically approved for the purpose.

b. Utilize mechanical connections specifically approved by U.L. 486 A & C for the conductors, or if soldered d, first joined so as to be mechanically and electrically secure prior to soldering and insulating. Temperature rating of completed splices shall equal or exceed the temperature rating of the highest rated conductor.

(13) Wiring for audible and visual alarm notification devices shall be arranged so that a loss of a portion of the wiring on a floor will not render more than 60% of the devices of each type inoperative, and the devices shall be so connected to the circuitry (i.e., by means of alternate circuits) as to maintain at least partial audibility/visibility throughout the entire floor.

4. Fire Alarm Sending Stations, Modified Class "E" - Non-Coded Manual Station and Floor Warden Station. -

(a) There shall be at least one (1) fire alarm sending station in each story of a building located in each path of escape. Additional stations shall be installed so that no point on any floor shall be more than 200 feet from the nearest station.

(b) A floor warden station on each floor shall be located between required stairways, required vertical exits or other required exits. All types of systems shall include a telephone type handset at the floor warden station with integral signaling to the fire command station and may be a part of the speaker system. The hand set shall be red and equipped with armor over the wiring between the hand set and its housing which may be installed flush, semi-flush or surface mounted. The housing shall be painted red and identify its function. Equipment shall be installed within a box recessed or surface mounted, large enough to include the hand set and test facility, by means of a key, to test the floor automatic and manual alarm device wiring. A pilot light shall indicate the live condition of the floor warden station.

Doors of sending stations shall be painted red and lettered "FIRE EMERGENCY - OPEN DOOR TO OPERATE" or words to this effect. Instructions for operating the station shall be permanently affixed or be an integral part of the station. Instruction cards shall be provided at each station protected by glass or plastic. Designation number of station shall be prominently displayed on instruction card or on cover of station.

(c) All current-carrying parts shall be insulated from parts carrying current of opposite polarity with approved insulating material.

(d) All pull-lever type stations shall be constructed with a door or other approved means to protect the "pull lever" against accidental injury. The wording "IN CASE OF FIRE - OPEN DOOR AND PULL DOWN LEVER" in raised letters or equivalent instructions, shall appear on the door.

(e) For systems using break-glass or break-rod type stations, at least one extra glass rod or glass pane for each station the system shall be kept in the building. Break glass stations shall have the glass rod or pane mounted on the surface of the station covers or mounted internally in such manner that the glass must be broken to actuate the sending station. Suitable hammers on chains attached to the stations or other approved means of breaking the glass, shall be provided. Stations accomplishing the "break glass" principle using other approved means shall not be required to provide hammers or spare glasses.

(f) Non-coded stations. -

(1) Non-coded closed circuit fire alarm stations may be operated by a break-glass or break-rod or a pull lever device so arranged that the alarm cannot be interfered with except by resetting or replacement of the glass or rod by an authorized person.

(2) The construction and materials shall be equivalent to that of the standard approved type coded closed circuit station described in reference standard RS 17-3 except that the contacts shall be of sufficient capacity to safely carry the entire operating current of the alarm circuit without excessive heating.

(g) Station testing devices. - Provisions shall be made for a silent test of sending station mechanisms without operating the signaling devices. Such test device shall be designed to prevent any person, except those in authority, from operating the same and to prevent the possibility of the box being left inoperative after the test.

(h) Provision shall be made to supply an audible and visual signal at the fire command station from the floor warden station.

5. Alarm Sounding Devices. -

(a) Approved speakers shall be provided as the sounding devices. The alarm sound shall be a generated gong, bell, horn, whistle or other acceptable signal. Chime sounds may be installed only with the approval of the commissioner. Approved speakers shall have heat resistant driven elements and shall conform to reference standard RS 17-5.

When recessed speakers are used they shall conform to the performance requirements of reference standard RS 17-5. Speakers when mounted on walls shall be mounted upon tenant walls in preference to building core walls.

(b) Recessed speakers if used shall be located not more than 10 feet from the entrance to each required exit to insure proper alarm signal reproduction. This spacing is based upon normal 8 feet-10 feet ceiling height. Surface mounted type speakers shall be mounted within 10 feet of each egress to insure proper alarm signal reproduction. For unusual conditions and higher ceilings, speakers shall not be mounted more than 20 feet above floor.

(c) The alarm sounding devices may be utilized for other audio purposes including building security if means is provided to insure fire alarm priority.

6. Fire Alarm System Control Boards and Command Stations. -

(a) Supervising circuit. -

(1) Modified class "E" fire alarm systems shall be supervised.

(2) The supervising circuit shall be provided with a trouble signal arranged to sound continuously in case of failure of the power source. The trouble signal shall be so located that it will be within audible range of a responsible person in the building.

(3) Trouble signals may be fitted with silencing switches only when the switch is connected in such a manner that the act of silencing the signal by the operation of the switch automatically transfers the trouble signal to a red lamp on the fire command station. When the trouble has been repaired, the alarm signal shall sound until the silencing switch has been reset to operate under normal conditions.

(4) The trouble signal shall give a distinctive signal.

(b) Protection of sending and sounding devices. -In fire alarm signal systems, sending stations and sounding devices shall be enclosed in metal casings. made dust proof and damp proof when necessary, and clearly marked with instructions for use.

(c) Standards of electric alarm apparatus. -All electrically actuated apparatus used in fire alarm systems shall be so designed and constructed that it will operate satisfactorily at an input voltage level 15 per cent below or 10 per cent above normal rated voltage.

(d) Insulation. -

(1) Insulating materials used shall be varnish cambric, bakelite, mica, or equivalent insulating material.

(2) The use of fiber or paper as an insulating material is prohibited.

(3) The insulating materials used shall be capable of withstanding an insulation breakdown test of 1,000 volts a.c. plus twice operating voltage applied for 1 minute.

(e) Electromagnets. -

(1) Electromagnet windings shall be impregnated with an insulating, moisture repelling compound of the silicone or epoxy type.

(2) Electromagnet coils used on alternating current, when composed of enameled wire shall have additional approved insulation on each wire. The coils may be of the form-wound type.

(3) A protective cover to prevent mechanical damage shall be provided over the entire coil.

(4) Electromagnetic coils shall be fastened to prevent floating.

(5) Electromagnet cores shall be of the best grade of ferrous material so as to reduce to a minimum the possibility of failure due to residual magnetism.

(6) Electromagnet cores for use on alternating current shall be of laminated construction or other approved method to prevent heating and promote efficiency.

(7) Electromagnetic cores of relays shall be treated to prevent corrosion. Paint or varnish shall not be used for this purpose.

(8) Non-magnetic freeze pins shall be used to prevent two magnetic surfaces from making physical contact with each other.

(f) Relays. -

(1) The armatures of all relays shall depend on gravity or magnetic attraction for their operation and may be assisted by a spring.

(2) Adjustments shall be of such a character that they can be securely locked.

(g) Overload protective devices. -Electronic circuits shall provide protection of all equipment and circuits by opening up the circuit to the equipment or devices protected. The operation of this "overload circuit" shall cause the trouble signal to sound at the fire command station.

(h) Control boards shall operate so that troubles in individual zones may be shunted out without affecting the rest of the system.

(i) Provision shall be made for sufficient wire gutter space around the panel. Gutter space shall be a minimum of 2 inches at sides, top, and bottom. Wire in gutter space shall be properly laced in a neat and workmanlike manner on all control boards.

(j) Conduit knockouts shall not be provided in the top of the control board cabinet unless designed and approved for entry on top.

(k) A wiring diagram of the alarm system approved by the commissioner and the approved card of instruction properly marked and securely fastened shall be provided within the control board cabinet and at the fire command station. When it becomes necessary to mount the diagram outside of the cabinet, the diagram shall be framed under glass or equivalent material.

(l) Control boards. -

(1) Control boards and amplifiers used for voice communication and alarms shall be located in a safe, moisture and dust free location secure from unauthorized tampering. Otherwise a ventilated cabinet provided with a lock and key, suitably identified, shall be provided.

(2) Amplifiers for modified class "E" systems shall have the capacity to deliver sufficient power to operate all alarm sounding devices and voice communication system and have a 50 per cent reserve power capacity. In addition the amplifiers shall be wired in such a manner that the imminent failure or actual failure of amplifiers shall shut down the amplifier and indicate a trouble condition. Removal of an amplifier shall be indicated by a trouble signal at the fire command station. Opening of the control cabinets shall be supervised by a tamper switch producing a manually resettable trouble alarm at the fire command station.

(m) Fire command station. -The fire command station shall contain all the components described in the building code and shall have the capability of overriding floor warden stations, The command station console shall be provided with a hinged cover which permits the flashing "FIRE" visible signal to be seen, The cover shall be provided with an approved lock and key. The fire command station shall be provided with an information display system so located as to provide minimum distortion due to an angular line-of-sight and ambient lighting conditions. This display shall have the capability to monitor the following systems in order of listed priority:

(1) Manual Fire Alarm
(2) Smoke Detection
(3) Sprinkler Waterflow
(4) Elevator Lobby Detector
(5) Fire Signal Activation
(6) Central Office Notification
(7) Fan System On - Fan System Off
(8) Fail Safe Locked Door
(9) Fire Systems Trouble
(10) Fire Signal Trouble
(11) Tamper Switch Alarm
(12) Power Source
(13) Test/Normal Mode
(14) Other Information as Desired

7. Painting of Equipment. -All enclosing cases for fire alarm, sprinkler alarm, smoke detection, and associated systems alarm apparatus shall be painted fire department red, except where approval is given by the commissioner to deviate from this requirement, The lobby information display system may be painted or finished to suit the owner of the building.

8. Information Display Systems. -

(a) Information display systems used in connection with modified class E fire alarm signal systems shall be of an approved electrically supervised type. The indicating devices shall describe the purpose they serve. The printed designation on unit or building information display system indicators shall be legible. The mechanism shall be so arranged that once operated, the indicating device must be reset manually. All conditions indicated shall remain displayed until manually cleared at the fire command station.

(b) A unit information display system shall be so designed that the operation of any station in the unit causes a visible and audible signal.

(c) Trouble displays shall be so arranged that the indicating device will reset automatically when the cause of trouble has been removed. The trouble information display system shall be so designed that it will indicate visible and audible trouble signals in the event of trouble occurring on any circuit monitored. The trouble information display system shall be actuated l y the operation of supervisory devices.

(d) A silencing switch shall be provided for trouble signals, but shall not affect subsequent trouble signals.

(e) Information display systems shall be so designed that vibration from without or that caused by a trouble signal within will not operate the indicating devices.

(f) All remote information display systems shall be installed in a separate steel cabinet painted red, provided with approved lock and key. Information display system cabinets shall be marked in white letters at least one inch high with the words: "FIRE ALARM

INFORMATION DISPLAY SYSTEM, ZONE ------" or "FIRE ALARM TROUBLE INFORMATION DISPLAY SYSTEM", whichever the case may be.

(g) Information display systems located in the lobby of a building whether an integral part of the fire command station or wall mounted shall have the legend "FIRE" in red letters three inches high together with an audible signal in addition to the lamp, target drop, cathode ray tube, light emitting diode, nixie, etc. and a separate or distinctive trouble signal shall sound. The audible signal accompanying an alarm shall be automatically silenced when the fire command station is operated by the fire safety director or his delegated substitute. Remote information display systems shall operate in the same manner.

(h) The display shall provide a minimum of four simultaneous alarm indicators with an overflow indication for additional alarms. Provisions shall be made to distinguish alarm conditions from non-alarm conditions. The display shall be updated as new information becomes available. If the same condition exists for more than one point on a floor or for more than one floor in a building, such as a fire gong actuation or public address, a separate output entry shall be displayed for each point or floor.

(i) Display format. - Each output entry shall include self-identifying mnemonic codes for the type of signal, building or area designation, floor or stair number and point location, and time of day. Systems utilizing gravity drops or lamps as point identification, may provide a hard copy print out.

(j) Maintainability. -

(1) Manual display of all points of annunciation for test purposes shall be provided.

(2) Capability shall be provided for interrogating any station or sensing element for test purposes, either at the remote device or by interrogation from the fire command station. Intervals of testing shall be as approved.

(3) Equipment design shall be modular so that all repairs may be performed on-site by substitution of duplicate components by authorized personnel.

(4) One each of these parts that are of a modular nature shall be included as spares at the fire command station.

9. Licensed Contractors. -Only a person holding a license or a special license in accordance with the provisions of the New York city electrical code, shall install, alter, or repair electrical wiring or apparatus for fire alarm systems in any building.

10. Used or Rebuilt Apparatus. -Used apparatus shall not be re-used for any interior fire alarm system until the same has been reconditioned in the shop of any approved manufacturer of interior fire alarm apparatus. Approval shall be obtained from the commissioner prior to installation. The use of reconditioned apparatus whose manufacturer has discontinued manufacturing equipment is prohibited.

11. Standpipe Fireline Telephone and Signal System. - Where the standpipe telephone and signal system is arranged to be used as a modified class E fire alarm signal system as provided in the building code, retractable telephone handsets shall be provided in pump rooms. The telephone in pump rooms shall be equipped with a loudspeaking receiver so that a voice can be distinctly heard at least 15 feet from the receiver.

12. Locked Door Fail Safe Systems. -

(a) Stairway reentry doors which are locked from the stairway side as permitted in section 27-371 of the administrative code shall be provided with an electrical fail safe strike release mechanism that will permit the door to be opened without a key when any automatic fire detecting device operates, elevator "Fireman Service" operates or power failure shall occur. In addition, provisions shall be made to permit these doors to be opened from the command station or mechanical control center. This system shall be manually reset.

(b) Wiring for these systems shall be electrically supervised for open and shorted or grounded circuits.

(c) Transformers for release mechanisms shall be rated for the proper use load, identified and located in proximity of the power supply for other fire alarm systems.

(d) The release mechanisms shall be operated from a separate control relay having the capability of indicating trouble on a separate trouble signal and at the information display system on the command console and at the mechanical control center. The mechanism shall also indicate a "failed" and "open" status on the command console and at the mechanical control center.

13. Radio System. -A radio or radio/wire system shall comply with the following requirements:

(a) The emergency notification portion of the system equipment shall be capable of the following:

(1) Have the capability of individual, group or entire building notification of an alarm tone and voice intelligibility.

(2) Receivers and wire extension speakers shall be permanently mounted to a wall or pillar.

(3) There shall be automatic switch over to emergency battery power supply.

(b) Two-way communication shall be accomplished by fixed transmitters and receivers.

(c) Equipment shall be Federal Communications Commission (FCC) approved, FM type, solid state, above 150.8 MHz. Selective signaling shall be accomplished by a minimum of 2 tone code operation.

(d) The antenna shall be designed and installed for use at the fire command station transmitter and be capable of transmitting to all fixed stations.

(e) The fire command station unit shall have the capability of locking out all other remote control points.

14. Sprinkler Waterflow Alarms. -A sprinkler waterflow alarm may be arranged to be used as part of a modified class E fire alarm signal system provided: the alarm signal system shall be an approved electrically supervised closed circuit information display system capable of indicating the floor where the sprinkler was activated.

15. Elevator communication:
Elevator intercommunication shall be acceptable for communications with the Fire Command Station if there is a means of communication proximate to the Fire Command Station.
Local Law 16-1984
****DOB 4-13-03; DOB 1-9-02; Local Law 16-1987; Local Law 5-1973; 49-74 BCR***

** REFERENCE STANDARD RS 17-3C
STANDARDS FOR THE INSTALLATION OF VISUAL AND AUXILIARY ALARMS REQUIRED BY SECTION 27-292.15

1. Definitions.
(a) Visual Alarms (Strobe): Visual alerting device which when activated by either an integral or an external initiating device provides an alarm signal in the form of a flashing high intensity light source (usually xenon) with frequency approximately of one (1) Hz.
(1) System Type Strobe: A strobe connected by direct wiring to an overall fire alarm system and upon which it depends for its actuating signal.
(2) Extension Type Strobe: A strobe connected by direct wiring to a single station smoke detector and upon which it depends for its actuating signal.
(b) Auxiliary Alarms. -
(1) Portable System Type Strobe: Strobe equipped with cord and plug (power supply), and a receiver arranged to detect the presence of the alarm tone, emitted by the fire alarm system thereby causing it to operate (flash).

2. General Requirements. -
(a) An installation of a new fire alarm and signal system incorporating audible devices intended to evacuate building occupants shall require strobes to be installed as part of the system.
(b) Installation of strobes in existing buildings may either be installed as part of an interior fire alarm and signal system or be connected to an approved strobe control panel.

3. Power Supply. -
(a) Except as noted in (b) below, strobes that are subject to the requirements of section two above, shall derive power from the interior fire alarm and signal system.
(b) When not powered by the interior fire alarm and signal system, independent strobe control panels shall supply power to strobes. Such control panels shall derive their power from a normal or emergency 120 volt source supplying the floor, via a separately installed locked fire alarm cutout connected to electrical supply in accordance with the requirements of the Electrical Code.

4. Strobe Control Panel. -
(a) A strobe control panel shall be approved by the Bureau of Electrical Control or approved by the Board of Standards and Appeals.
(b) The panel shall cause fire alarm signal received from interior fire alarm system to activate strobes.
(c) The panel shall have a battery and charger capable of providing at least fifteen (15) minutes of full system alarm operation following twenty four (24) hours of supervisory operation.
(d) Strobes may be reset from the fire command station by an identified reset device. When strobes cannot be turned off from the fire command station, a timer to shut off the strobes and reset the panel five (5) minutes after they are activated shall be provided in the panel.
(e) The panel shall incorporate electrical supervision of
(1) Alarm circuitry for strobes,
(2) Initiating circuitry from the building fire alarm system.
(3) The 120 VAC power source, and battery.
(f) The panel shall have a trouble contact for reporting to the interior fire alarm and signal system and shall have remote trouble bell.
(g) The panel shall be capable of disconnecting any flashing or in-motion lighting that may make strobes ineffective.
(5) Wiring. -The flashing strobes powered either through an interior fire alarm and signal system or independently through a control panel shall operate in conjunction with the audible signals and shall:
(a) Meet the requirements of Reference Standard RS 17-3A when required in a Class E, Class C and Class J fire alarm signal and signal system.
(b) Meet the requirements of Reference Standard RS 17-3B when required in a Modified Class E and Modified Class J fire alarm and signal system and
(c) Meet the requirements of Reference Standard RS 17-3 when required in any other fire alarm and signal system.

6. Portable System Type Strobe. -
(a) The strobe shall have a battery and charger capable of providing at least five (5) minutes of strobe operation following twenty-four (24) hours or supervisory operations.
(b) The strobe shall have a visual trouble indication when power is lost.

7. Location of Strobes. -

(a) When strobes are installed on walls, they shall be a minimum of 80 inches above the floor or a maximum of 6 inches below the ceiling.

(b) When strobes are installed in ceilings, there shall be no other devices (such as exit lights) or building appurtenances (such as beams or smoke curtains) within 5 feet of the strobe.
DOB 4-13-03; 886-89 BCR

**** REFERENCE STANDARD RS 17-3D**
Repealed
Local Law 16-1987

† REFERENCE STANDARD RS 17-4
ANSI/NFiPA No. 214-1988-Standard on Water Cooling Towers.
†310-90 BCR; 633-83 BCR

**** REFERENCE STANDARD RS 17-5**
ANSI/NFPA No. 72-1993 - National Fire Alarm Code.
The provisions of NFPA 72-1993 with the exception of Chapter 2 shall apply subject to the following modifications. The section and paragraph numbers are from that standard.
Note: Chapter 2 of NFPA 72-1993 entitled "Household Fire Warning Equipment" shall not be part of this reference standard.
The requirement of NICET Certification as outlined under Section 7-1.2.3 shall be applicable beginning on January 14, 2006.

CHAPTER 1 - FUNDAMENTALS OF FIRE ALARM SYSTEMS
Add the definition of Evacuation Zone between Evacuation Signal and Exit Plan in Section 1-4.
Evacuation Zone. – An evacuation zone is an area of a floor, an entire floor, several floors or the entire building that is always intended to be evacuated simultaneously.
Amend the following definitions:
Section 1-5.2.3 – Delete exceptions No. 1 and No. 2.
Section 1-5.2.6 – Delete sub-paragraph (c).
Section 1-5.2.8.4 B Delete
Section 1-5.2.9.2(c) B Delete
Section 1-5.2.10 - Delete in its entirety.
Section 1-5.2.11 - Delete in its entirety.
Section 1-5.4.1 - Delete
Section 1-5.4.2.1 is modified as follows:
Section 1-5.4.2.1 Coded Alarm Signal - A coded alarm signal shall consist of not less than [three] four complete rounds of the number transmitted, and each round shall consist of not less than three impulses.
Section 1-5.4.3 - Delete in its entirety.
Section 1-5.4.7 - Delete the exception.
Section 1-5.4.8 Delete and substitute the following:
Section 1-5.4.8 Alarm Signal *(Silence).* – A means of silencing the alarm notification appliances shall be located within a locked F.A. Control Cabinet. Such a means shall be permitted only if a visible zone alarm indication or equivalent has been provided, as specified in 1-5.7, and subsequent alarms on other initiating device circuits will cause the notification appliances to reactivate. A means that is left in the "off" position when there is no alarm shall operate an audible visible trouble signal until the means is restored to normal.
Section 1-5.4.10 - Delete
Section 1-5.5.4 - Delete
Section 1-5.6 - Delete
Section 1-5.7.1.1 - Delete the first paragraph up to . . . *"in a fire situation."*
Section 1-5.8.1 - Delete *"within 200 seconds"* from the end of the paragraph. Also delete *"Exception #10."*
Section 1-5.8.4 - Delete "exception #3."
Section 1-5.8.5.1 - Delete the exception of Subsection (b).
Section 1-5.8.6.1 - Delete exceptions #3 and #4.
Section 1-5.8.6.2 - Delete
Section 1-5.8.6.3 - Delete
Section 1-7 - Delete in its entirety.

CHAPTER 3 - PROTECTED PREMISES FIRE ALARM SYSTEMS
Section 3-2.1 - Delete
Section 3-3 - Delete subdivisions (h), (i) & (k)
Section 3-4.2 - Delete exceptions #3 and #5
Section 3-5.2 - Delete
Section 3-5.3 - Delete
Section 3-7.2(a) - Delete the effective date of the requirements.
Section 3-8.1.2 - Amended to read as follows:
Section 3-8.1.2 – For fire alarm systems employing automatic fire detectors or waterflow detection devices, at least one fire alarm box shall be provided to initiate [a] the same fire alarm signal as required by automatic fire detectors or waterflow detection devices. This fire alarm box shall be located where required by the authority having jurisdiction.
Section 3-8.3 - Delete
Section 3-8.6.2 shall be modified to read as follows:
Section 3-8.6.2 – A dry-pipe or preaction sprinkler system that is supplied with water by a connection beyond (downstream from) the alarm initiating device of a wet-pipe system shall be equipped with a separate waterflow alarm initiating pressure switch or other approved means to initiate a waterflow alarm.
Section 3-8.9.1 – Modify to read as follows: The operation of an automatic fire suppression system installed within the protected premises shall be indicated as an alarm on the protected premises fire alarm system.
Section 3-8.10.1 - Delete last paragraph starting from *"all phases . . . "*
Section 3-8.10.2 - Delete
Section 3-8.14 - Delete in its entirety.
Section 3-8.15.4 - Modify second sentence to read as follows: The operation of the elevators shall be in accordance with [ANSI/ASME A17.1, *Safety Code for Elevators and Escalators*, Rules 211.3 through 211.8] RS 18-1. Delete the third sentence.
Section 3-8.15.4 (a) - Delete
Section 3-8.15.4 (b) - Delete

Section 3-8.16 - Delete.
Section 3-9.2.3 Modify to read as follows: When permitted by the authority having jurisdiction. Transfer of data over listed communication ports shall be an acceptable means of interfacing between the fire alarm control unit and fire safety function control devices.
Section 3-9.3.3 B Delete and substitute the following:
Section 3-9.3.3 – Connections between fire alarm systems and the HVAC system for the purpose of monitoring and control shall be arranged such that primary control (the control that all other controls are secondary or subservient to) capability rests with the fire alarm control unit(s) under all circumstances, and in addition, shall operate and be monitored in accordance with Reference Standards RS 13-1, RS 17 and the authority having jurisdiction.
Add Section 3-9.3.4 as follows:
Section 3-9.3.4 – Those HVAC fans or fan systems which have been automatically shut-down by virtue of the activation of any fire alarm control unit or device shall be arranged and equipped not to automatically restart when the fire alarm control unit or device is reset. At least two manual means of restarting the fans or fan systems shall be required, such as manually resetting the fire alarm control unit or device and the manually resetting the fan or fan system controls.
Add Section 3-9.3.5 as follows:
Section 3-9.3.5 – Fans or fan systems that were automatically shut down by the fire alarm control unit or device in Class 'E', 'J' and 'C' systems shall be manually enabled to start by a means of overriding the fan shutdown through use of a city-wide standard key switch (#2642) located at the Fire Command Station. The actual start of the fan(s) shall be accomplished manually through HVAC controls at the Fire Command Station, or at the Mechanical Control Center or locally at the fan room(s).
Add Section 3-9.3.6 as follows:
Section 3-9.3.6 – Smoke exhaust control means shall be enabled through the use of a city-wide standard key (#2462) located at the Fire Command Station or fire alarm control unit, or when neither is provided, in the entrance lobby of the building.
Section 3-10.4 - Delete
Section 3-11 - Delete in its entirety.
Section 3-12.3 - Delete in its entirety.
Section 3-12.4.1 - Delete the exception.
Section 3-12.4.2 - Delete
Section 3-12.4.3.1 - Delete
Section 3-12.4.3.2 - Delete
Section 3-12.4.4 - Delete
Section 3-12.4.5.1 - Delete the third sentence starting from "The fire command station shall be permitted . . ."
Section 3-12.4.6.2 B Delete
Section 3-12.4.6.3 - Delete
Section 3-12.5.1-Delete
Section 3-12.6.6 B Delete
Section 3-12.6.7 - Delete

CHAPTER 4
Deleted in its entirety (this chapter is for fire alarm central offices, which falls under the Fire Department's jurisdiction).

CHAPTER 5 - INITIATING DEVICES
Section 5-1.3.4 - Delete "*appropriate NFPA standard or"* from the first sentence.
Section 5-1.3.5 - Delete
Section 5-2.2 - Delete *"either by the appropriate NFPA standard or"* from the sentence.
Section 5-3.2- Delete "*either by the appropriate NFPA standard or "* from the sentence.
Section 5-3.5.9 - Add, *"Where required by the authority having jurisdiction"* at the beginning of the paragraph.
Section 5-3.6.2 - Add, *"Where required by the authority having jurisdiction"* at the beginning of the paragraph.
Section 5-5.2 - Delete *"either by the appropriate NFPA standard or"* from the paragraph.
Section 5-6.1 - Delete *"either by the appropriate NFPA standard or"* from the second sentence.
Section 5-8.1 - Substitute the words *"approvals/acceptances" for "listings"*.
Add Section 5-8.2 to read as follows:
Section 5-8.2 – Appropriate means may involve:
(a) Foam Systems: Flow of Water
(b) Pump Activation
(c) Differential Pressure Detector
(d) Halon: Pressure Detector
(e) Carbon Dioxide: Pressure Detector
In any case, an alarm that activates the extinguishing system may be initiated from the detection system.
Section 5-9.1.1 - Change the second sentence to read as follows: *"The operable part of each manual fire alarm box shall be 4 feet above finished floor level."*
Section 5-9.1.2 - Delete
Section 5-9.1.3 - Change the number of repetitions produced from three to four.
Sections 5-9.2 to 5-9.2.11 - Delete
Sections 5-9.2.12 to 5-9.2.12.6 - Delete
Sections 5-9.2.13 to 5-9.2.14.2 - Delete
Section 5-10.5 – Delete and substitute the following:
Section 5-10.5 – Room Temperature Supervisory Signal-Initiating. B When temperature supervisory devices are provided to indicate a low temperature condition, they shall indicate the decrease in room temperature to 40^{o} F (4.4^{o} C) and its restoration to above 40^{o} F (4.4^{o} C).
Section 5-11.4.2 - Delete *"NFPA 90A, Standard for the installation of Air Conditioning and Ventilating Systems"* and substitute with *"Reference Standard RS 13-1."*
Section 5-11.5.2.1 - Delete *"other NFPA standards"* and substitute with *"Reference Standard RS 13-1."*
Figure 5-11.7.4.1.1.(D) to read *"One detector mounted on the higher side"*

CHAPTER 6 - NOTIFICATION APPLIANCES FOR FIRE ALARM SYSTEMS

Section 6-3.7 – Amend to read as follows:

Section 6-3.7 – Location of Audible Signal Appliances. Where ceiling heights permit, wall mounted appliances shall have their [tops] centerline at heights above the finished floors of [not less than 90 in. (2.30m)] 8 ft. (2.45m) and [below the finished ceilings of not less than 6 in. (0.15 m)] where ceiling heights prevent installation at this height installation shall be not greater than 6 in. (0.15m) below. This shall not preclude ceiling-mounted or recessed appliances.

Exception: Combination audible/visible appliances [installed in sleeping areas shall comply with 6-4.4.3].

Section 6-4.2 - Delete

Section 6-4.4 is modified to read as follows:

Section 6-4.4 Appliance Location. – Wall-mounted appliances shall have their bottoms at heights above the finished floor of no less than 80 in. (2-m) nor less than 6 in. (13.5 cm) below the ceiling, whichever is lower. [and no greater than 96 in. (2.4 m).] Ceiling-mounted appliances [shall] may be installed [per Table 6-4.4.1(b)].

Exception: Appliances installed in sleeping areas shall comply with 6-4.4.3.

Figure 6-4.4.1 - Delete

Section 6-4.4.1.1 is modified to read as follows:

Section 6-4.4.1.1 – Spacing shall be in accordance with [Figure 6-4.4.1 and] Table[s] 6-4.4.1(a) [and (b)]. A maximum separation between appliances shall not exceed 100-ft. (30 m). Visible notification appliances shall be installed in accordance with Table 6-4.4.1 (a), using one of the following:

(a) A single visible notification appliance, or

(b) Two visible notification appliances located on opposite walls, or

(c) In rooms 80 ft. by 80 ft. or greater, where there are more than two appliances in any field of view, they shall be spaced a minimum of 55 ft. from each other, or

(d) More than two visible notification appliances that flash in synchronization.

Section 6-4.4.2.1 is modified to read as follows:

Table 6-4.4.2 applies to corridors not exceeding 20 ft. (6.1 m) wide. For corridors greater than 20 ft. (6.1 m) wide, refer to [Figure 6-4.4.1 and] Table[s] 6-4.4.1(a) [and (b)]. In a corridor application, visible appliances shall be UL 1971 rated not less than 15 cd, and shall have an on-axis intensity of not less than 75 cd.

Table 6-4.4.1 (a) is modified as follows:

Table 6-4.4.1(a) Room Spacing Allocation for Wall-Mounted Visible Appliances Minimum Required Light Output, Candela (cd) (Effective Intensity)

(see note below)

Maximum Room Size	One Light Per Room(cd)	Two Lights per Room (Located on Opposite Walls) (cd)	Four Lights per Room - One Light per Wall (cd)
20' x 20'	15	N/A	N/A
30' x 30'	30	15	N/A
40' x 40'	60	30	[15] N/A
45' x 45'	75	60	N/A
50' x 50'	95	60	[30] N/A
55' x 55'	110	75	N/A
60' x 60'	135	95	[30] N/A
70' x 70'	185	110	[60] N/A
80' x 80'	240	140	60
90' x 90'	305	180	95
100' x 100'	325	240	95
110' x 110'	455	240	135
120' x 120'	540	305	160
130' x 130'	635	375	185

NOTE: *Candela (cd) ratings, as indicated, are based on UL 1971 listings. On-axis ratings shall in no case be less that 75 cd.*

Table 6.4.4.1(b) - Delete

Section 6-6 - Delete

Section 6-6.1 - Delete

Section 6-6.2 - Delete

Section 6-8 - Delete in its entirety.

Section 6-9 - Delete in its entirety.

CHAPTER 7

Section 7-1.1.1 is modified to read as follows:

Section 7-1.1.1 – Inspection, testing and maintenance programs shall satisfy the requirements of [this code] the Fire Commissioner, the New York City Building Code and the equipment manufacturer's instructions.

Section 7-1.2 - Delete the second sentence starting from "Delegation."
Section 7-1.2.1 - Delete
Section 7-1.2.2 - Delete and enact three new sections as follows:
Section 7-1.2.2 – Personnel shall be qualified and experienced in the inspection and testing of fire alarm systems and shall meet the following requirements:
(a) Certified by the Buildings and/or Fire Commissioners, or
(b) Trained and qualified personnel of a NYC licensed electrical contracting firm, or
(c) Personnel with National Institute for Certification in Engineering Technologies (NICET) Certification of Level II in fire alarm technology, or
(d) Trained and qualified personnel of firm listed by a national testing laboratory for servicing of fire alarm systems.
Section 7-1.2.3 – Personnel shall be qualified and experienced in the maintenance of fire alarm systems and shall meet the following requirements:
(a) Factory trained and certified, or
(b) Trained and qualified personnel of NYC licensed electrical contracting firm, or
(c) Trained and qualified personnel of firm listed by a national testing laboratory for servicing of fire alarm systems.
(d) Service personnel employed pursuant to (a), (b), and (c) above shall either have a valid NICET Certification of Level II in fire alarm technology or work under the direct supervision of a person having such certification.
Exception: The following are exempt from the above requirements:
(1) Person(s) exclusively performing smoke detector cleaning, having a Certificate of Fitness from the Fire Department and working under the supervision of, or employed by a person(s) having NICET Level II certification.
(2) Person(s) exclusively performing maintenance of fire alarm systems installed and approved prior to 1987, and working under the supervision of, or employed by a person(s) having NICET Level II certification.
(e) If during the course of maintenance either:
(1) total system replacement, or
(2) wiring repair, or
(3) replacement of wiring is (are) indicated, such repair(s) or replacement(s) shall be performed by a person holding a license or a special license in accordance with the provisions of the NYC Electrical Code.
Section 7-1.4 is modified to read as follows:
Section 7-1.4 – Prior to system maintenance or testing, [the system certificate and the] all information regarding the system and Y to the service personnel.
Section 7-1.5.1 - Delete and substitute the following:
Section 7-1.5.1 – The special hazard system and main building system shall be tested concurrently.
Section 7-1.6 B Amend the last sentence to read as follows:
In addition, except for Class "E", "J" and "C" systems, 10 percent of initiating devices that are not directly affected by the change, up to a maximum of 50 devices, shall also be tested and proper system operation verified.
Section 7-2.1 B Delete
Section 7-2.2 – Delete and substitute the following:
Section 7-2.2 – Testing, which involves the disconnection of circuits of 50 volts or more with the exception of audio circuits up to 75 volts, shall be performed in accordance with the New York City Electrical Code by licensed electrical contracting firms meeting the requirements of Sections 7-1.2.3 and 7-1.2.3.1.
Sections 7-3.1 to 7.3.1.2 - Delete
Section 7-3.2 shall be deleted and substitute the following:
Section 7-3.2 Testing – Testing shall be performed in accordance with the requirements of the Fire Prevention Code.
Sections 7-3.2.1 to 7-3.4 - Delete
Section 7-4.1 shall be deleted and substitute the following:
Section 7-4.1 – Fire alarm system equipment shall be periodically maintained in accordance with manufacturers' instructions and the Fire Prevention Code.
Sections 7-4.2 to 7-4.4 - Delete
Sections 7-4.4.1 to 7-4.4.3.2 - Delete
Section 7-5.1 - Delete
Sections 7-5.3 to 7-5.4 - Delete

CHAPTER 8 - REFERENCED PUBLICATIONS
Delete in its entirety.

APPENDIX A - EXPLANATORY MATERIAL
This appendix is not part of Reference Standard RS 17-5, but is included for information purposes only with the exception of the following:
Section A-6-4.4.1 - Delete in its entirety and substitute the following:
Section A-6-4.4.1 – A design which delivers 0.0375 lumens per sq. ft. effective intensity to all occupied spaces where visible notification is required, is considered to meet minimum light intensity requirements of this section. The field of view is based on the focusing capability of the human eye, specified as 120 degrees in the IES Handbook. The apex of this angle is the viewer's eye. In order to ensure compliance with the requirements of Section 6-4.4.1, it has been accepted that this angle be increased to approximately 135 degrees.
Figure A-6-4.4.1 (a) - Delete
Figure A-6.4.4.1 (b) - Delete
Figure A-6.4.4.1 (c) - Delete
Figure A-6.4.4.1 (d) - Delete
Figure A-6.4.4.2 - Delete

APPENDIX B - ENGINEERING GUIDE FOR AUTOMATIC FIRE DETECTOR SPACING
This appendix is not part of Reference Standard RS 17-5, but is included for information purposes only.
***** DOB 1-9-02; 310-90 BCR***

* **REFERENCE STANDARD 17-5A**
Repealed
****310-90 BCR; 1014-80 BCR***

[*] **REFERENCE STANDARD RS 17-5B**
Repealed
310-90 BCR; 1014-80 BCR

[†]**REFERENCE STANDARD RS 17-5C**
Repealed
†310-90-BCR; 633-83 BCR

[*] **REFERENCE STANDARD RS 17-5D**
Repealed
310-90 BCR; 1014-80 BCR

[*] **REFERENCE STANDARD RS 17-5E**
ANSI/NFiPA No. 72E-1990-Standard for Automatic Fire Detectors.
310-90 BCR; 1014-80 BCR

[*] **REFERENCE STANDARD RS 17-6**
ANSI B16.4-1985-Cast-Iron Threaded Fittings, Class 125 and 250.
310-90 BCR; 1014-80 BCR

[**] **REFERENCE STANDARD RS 17-6A**
Valves and Related Products for Fire Protection Service.
UL193-1988-Alarm Valves for Fire-Protection Service (Revision 9/88).
UL260-1988-Dry Pipe and Deluge Valves for Fire-Protection Service.
UL262-1988-Gate Valves for Fire-Protection Service.
UL312-1988-Gate Valves for Fire-Protection Service (Revision 10/89).
UL668-1988-Hose Valves for Fire-Protection Service.
UL753-1989-Alarm Accessories for Automatic Water Supply Control Valves For Fire-Protection Service (Revision 8/89).
UL789-1987-Indicator Posts for Fire-Protection Service (Revision 3/89).
UL1091-1986-Butterfly Valves for Fire-Protection Service.
UL1468-1985-Direct-Acting Pressure-Reducing and Pressure-Control Valves for Fire-Protection Service.
UL 1486-1979-Quick Opening Devices for Dry Pipe Valves for Fire-Protection Service (Revision 7/85).
UL1726-1985-Automatic Drain Valves for Standpipe Systems (Revision 9/88).
UL1739-1988-Pilot-Operated Pressure Control Valves for Fire-Protection Service.
310-90 BCR

[**] **REFERENCE STANDARD RS 17-7**
ANSI/AWWA C110-1987-Ductile-Iron and Grey-Iron Fittings, 3-Inch through 48-Inch for Water and Other Liquids.
310-90 BCR; 1014-80 BCR

[†] **REFERENCE STANDARD RS 17-8**
ANSI/ASTM C111-1985-Rubber-Gasket Joints for Ductile-Iron and Grey-Iron Pressure Pipe and Fittings.
†310-90 BCR; 633-83 BCR

[†] **REFERENCE STANDARD RS 17-9**
ANSI/ASTM A234-1988b-Specification for Pipe Fittings for Wrought Carbon Steel and Alloy Steel for Moderate and Elevated Temperatures.
†310-90 BCR; 633-83 BCR

[†] **REFERENCE STANDARD RS 17-10**
ANSI/NFiPA No. 221-987-Standard for Water Tanks for Private Fire Protection.
†310-90 BCR; 633-83 BCR

[†] **REFERENCE STANDARD RS 17-11**
UL No. 217-1985-Single and Multiple Station Smoke Detectors including Revision of February 19, 1989.
†310-90 BCR; 633-83 BCR

[***] **REFERENCE STANDARD RS 17-12**
ANSI/NFiPA No. 74-1989-Standard for the Installation, Maintenance and Use of Household Fire Warning Equipment, as Modified. The following Sections of this standard are modified to read as follows:
1-1 Scope. Covers the requirements for the proper selection, installation, operation and maintenance of fire warning equipment for use within dwelling units or rooming units.
1.2.6 The installation of wiring and equipment shall be in accordance with the New York City Electrical Code.
2-1.1.1 Smoke detectors shall be installed outside of each separate sleeping area in the immediate vicinity of the bedrooms in dwelling units, in Occupancy Groups J-2 and J-3, and in Basements and Basement Recreation Rooms in Occupancy Group J-3.
Smoke detectors shall be installed within the sleeping area of hotel or motel units, rooming units or studio dwelling units in Occupancy Group J-1.
4-5.5 Each smoke detector shall have an integral test means to permit the occupant to check that it is operational. A continuous power display indicator light is recommended.
4-2.1.4 A smoke detector installed to protect a sleeping area in accordance with 2-1.1.1, shall be located outside the bedroom but in the immediate vicinity of the sleeping area, except as set forth for rooming units.
5-2.1.6 Smoke detectors shall be located on or near the ceiling, and within fifteen feet of all rooms used for sleeping purposes in J-2 or J-3 occupancies. In all dwelling units, with multiple levels, when any level has only one means of egress, the dwelling unit shall be provided with smoke detectors on all levels.
5-2.1.6.1 If ceiling mounted, the closest edge of the detector shall be a minimum of four inches from any wall.
5-2.1.6.2 If wall mounted, the closest edge of the detector shall be a minimum of four inches and a maximum of twelve inches from the ceiling.
310-90 BCR; 798-81 BCR

††Reference Standard 17-13
UL No. 2034, Standard for Single and Multiple Station Carbon Monoxide Detectors, October 29, 1996, with revisions through June 28, 2002.
††DOB 10-26-04

††Reference Standard 17-14
NFPA No. 720, Recommended Practice for the Installation of Household Carbon Monoxide (CO) Warning Equipment, 2003 Edition, as modified. The following sections of this standard are modified to read as follows (deleted text is in brackets; new text is italicized):
Title on page 720-4: "NFPA 720 Recommended Practice for the Installation of [Household] Carbon Monoxide (CO) Warning Equipment, 2003 Edition"

1.1.2 This document is limited to carbon monoxide warning equipment for use in *J-1, J-2, J-3, G and H-2 occupancies* [family living units] that contain fuel-burning *equipment*, appliances or fireplaces or have attached garages.

1.1.3 This document contains recommendations for the selection, installation, operation, and maintenance of equipment that detects concentrations of carbon monoxide that could pose a risk to the health of most occupants [in family living units].

2.3.1 UL Publication. Underwriters Laboratories, Inc., 333 Pfingsten Road, Northbrook, IL 60062. UL 2034. Standard for Single and Multiple Station Carbon Monoxide Detectors, October 29, 1996, *as revised through June 28, 2002*.

3.2.2* Authority Having Jurisdiction (AHJ). *The New York City Department of Buildings, New York City Fire Department, New York City Department of Housing Preservation and Development, and New York City Department of Health and Mental Hygiene.* [The organization, office, or individual responsible for approving equipment, materials, an installation, or a procedure.]

3.3.3 *Dwelling* [Family Living] Unit. *One or more rooms in a building occupied in whole or in part as the temporary or permanent home or residence of one or more families, where such room or rooms are arranged, designed, used or intended for use by one or more families, including such units in occupancy groups J-1 (hotels, motels, lodging houses, rooming houses, etc.), J-2 (apartment houses, apartment hotels, school dormitory buildings, etc.), and J-3 (one- and two-family dwellings, rectories, convents, group homes, etc.).* [One or more rooms in a single family detached dwelling, single family attached dwelling, multifamily dwelling, or mobile home for the use of one or more persons as a housekeeping unit with space for eating, living, and sleeping and permanent provisions for cooking and sanitation.]

3.3.9 Separate Sleeping Area. The area of a *dwelling* [family living unit] where the bedrooms or sleeping rooms are located.

3.3.10.1 Alarm Signal. A signal indicating a concentration of carbon monoxide that could pose a risk to the life safety of the occupants [in the family dwelling unit] and requiring immediate attention.

4.2 Supplemental Functions. Supplemental functions, including the transmission of an alarm beyond the *premises* [household] should be permitted and should not interfere with the performance recommendations of this document.

4.3 Total System. Where the AHJ requires both the alarm and transmission beyond the *premises* [household] and the total system to comply with the applicable sections of [NFPA 72, National Fire Alarm Code] *RS 17-3, 17-3A, or 17-3B*, the recommendation of Section 5.1 and 5.4.2 of this document *shall* [should] be followed.
Title of Chapter 5: Chapter 5 [Household] Carbon Monoxide Warning Equipment

5.1 *Required* [Recommended] Protection.
5.1.1.1 A carbon monoxide detecting alarm or detector *shall* [should] be centrally located *as provided for in § 5.1.2 and 1 R.C.N.Y. § 28-02* [outside of each sleeping area in the immediate vicinity of the bedrooms.].

5.1.1.3 Each alarm or detector *shall* [should] be located on the wall, ceiling, or other location as specified in the installation instructions accompanying the unit. *To help prevent false alarms, such alarm or detector should be located away from sources of humidity such as bathrooms and should be located away from a range or other fossil fuel burning equipment. To prevent damage by occupants, such alarm or detector should be located out of reach of children and pets.*

5.1.2 Alarm notification appliances. Each alarm or detector *shall* [should] cause the operation of an alarm notification appliance that *shall* [should] be clearly audible in all bedrooms over background noise with all intervening doors closed, *in accordance with Annex A, § A.5.1.1.1.*

5.2.1.1 All power supplies *shall* [should] have sufficient capacity to operate the signal(s) for at least 12 continuous hours.

5.2.1.2 For electrically powered household carbon monoxide warning equipment, the primary (main) power source *shall* [should] be ac, unless otherwise permitted by the following:
(1) Detectors and alarms are permitted to be powered by a monitored dc circuit of a control unit when power for the control unit meets the recommendations of section 5.2 and the circuit remains operable upon the loss of primary (main) ac power.
(2) A detector and a wireless transmitter that serves only that detector are permitted to be powered from a monitored batter (main) source where part of a listed, monitored, low-power radio (wireless) system.
[(3) In existing construction, a monitored battery primary (main) power source, as described in 5.2.3, is permitted.]

5.2.2.1 An ac primary (main) power source *shall* [should] be a commercial light and power supply or other dependable source *and shall be provided with a secondary (standby) power supply complying with § 5.2.4.*

5.2.2.2 A visible "power on" indicator *shall* [should] be provided.

5.2.2.3 Primary (main) ac power *shall* [should] be supplied from either a dedicated branch circuit or the unswitched portion of a branch circuit also used for power and lighting.

5.2.2.4 All electrical systems *shall comply with the New York City Electrical Code* [designed to be installed by other than a qualified electrician should be powered from a source not in excess of 30 volts that meets the requirements for Class 2 circuits as defined in Article 725 of NFPA 70, National Electrical Code®].

5.2.2.7 The recommendation of 5.2.2.6 does not apply *in J-1, J-2, and J-3 occupancies* where a ground fault circuit interrupter serves all electrical circuits within the household.

5.2.2.9 [Where a secondary (standby) battery is provided, the] *The* primary (main) power supply should be of sufficient capacity to operate the system under all conditions of loading with *the* [any] secondary (standby) battery disconnected or fully discharged.

5.2.3 Primary Power Supply – Monitored Battery. [Household] [c]*C*arbon monoxide warning equipment *may* [should] be [permitted to be] powered by a battery *only where permitted by 1 R.C.N.Y. 28-02 and*[,] provided that the battery is monitored to ensure that the following conditions are met:

(1) All power recommendations are met for at least one year of battery life, including monthly testing.

(2) A distinctive audible trouble signal sounds before the battery is incapable of operating the device(s) (from causes such as aging or terminal corrosion) for alarm purposes.

(3) Automatic transfer is proved from alarm to a trouble condition for a unit employing a lock-in alarm feature.

(4) The unit is capable of producing an alarm signal for at least 12 hours at the battery voltage at which a trouble signal is normally obtained, followed by not less than 7 days of trouble signal operation.

(5) After the initial 4 minutes of alarm, the 5-second "off" time of the alarm signal should be permitted to be changed to 60 seconds ± 10 percent.

5.2.4.1 When provided, a secondary (standby) power supply *shall* [should] have sufficient capacity to power the unit for 8 hours, followed by not less than 12 hours of alarm, followed by not less than 7 consecutive days of trouble signals.

5.2.4.2 After the initial 4 minutes of alarm, the 5-second "off" time of the alarm signal *shall* [should] be permitted to be changed to 60 seconds ± 10 percent.

5.2.4.3 Removal or disconnection of a battery used as a secondary (standby) power source *shall* [should] cause [an] audible [or]*and* visible trouble signal*s*.

The word should which indicates recommendation shall be replaced with the word shall which indicates mandated compliance in the following sections:

5.2.4.6
5.3.1.3
5.3.2.1 through 5.3.2.4
5.3.3.1
5.3.4.1 and 5.3.4.2
5.3.5.1 through 5.3.5.3
5.3.6.1 through 5.3.6.4

5.3.6.5 Each electrical carbon monoxide system *shall* [should] have an integral test means to allow the *occupants* [householder] to test the system operation.

The word should which indicates recommendation shall be replaced with the word shall which indicates mandated compliance in the following sections:

5.3.7.1 and 5.3.7.2

5.3.8.1 Where carbon monoxide alarms or detectors are interconnected to fire alarm or combination control units, connections *shall* [should] be via *alarm* [supervisory] circuits only, *and all alarms and/or detectors and control units shall be certified as compatible by the manufacturer(s) and shall be approved by the Materials Equipment Acceptance Division of the Department of Buildings.*

The word should which indicates recommendation shall be replaced with the word shall which indicates mandated compliance in the following sections:

5.3.8.2 and 5.3.8.3

5.3.9.1 Supervising station systems requiring transmission of signals to continually staffed locations providing supervising station services (for example, *c*entral station service, proprietary stations, or remote stations) *shall* [should] also comply with the applicable requirements of [Chapter 8 of NFPA 72®, National Fire Alarm Code.®] *3 R.C.N.Y 17-01, Rules of the Fire Department of New York.*

5.3.9.2 Where carbon monoxide alarms, detectors, multipurpose detectors, or combination or multiple station alarms or systems are connected to supervising station fire alarm systems, receipt of alarm signals *shall* [should] be distinctively indicated as "*alarm* [supervisory] signal carbon monoxide" or other non-fire alarm signal designation acceptable to the AHJ.

5.3.9.3 Signals received by the supervising station *shall* [should] be processed by the supervising station personnel in accordance with the *rules of the Fire Department of New York.* [following recommendations:

(1) They should retransmit the supervisory signal to public fire service communications center.

(2) They should notify the subscriber by the quickest available method.

(3) When the signal results from a pre-arranged test, action recommended by 5.3.9.3 (1) and (2) is not necessary.]

5.3.10.1 Carbon monoxide warning systems utilizing low-power wireless transmission of signals within the protected [household should] *premises shall* comply with the *applicable* requirements of [NFPA 72®, National Fire Alarm Code®] *RS 17-3, 17-3A, or 17-3B, and must be approved by the Material Equipment Acceptance Division (MEA).*

The word should which indicates recommendation shall be replaced with the word shall which indicates mandated compliance in the following sections:

5.4.1.1 through 5.4.1.6
5.6.1 through 5.6.3

††DOB 10-26-04

REFERENCE STANDARD RS-18
ELEVATORS AND CONVEYORS

*LIST OF REFERENCED NATIONAL STANDARDS

ANSI/ASME A17.1	Safety Code for Elevators and Escalators and Supplements A17.1a-1997 as Modified…..	1996
ANSI A117.1	American National Standard for Buildings and Facilities Providing Accessibility and Usability for Physically Handicapped People as Modified……	1986
ANSI B153.1	Safety Requirements for the Construction, Care and Use of Automobile Lifts……	1981
	FS00-L-360D Motor Vehicle Lifts.....	1987
ANSI/ASME MH14.1	Loading Dock Levelers and Dockboards.....	1987
]ANSI/ASME B20.1	Safety Standards for Conveyors and Related Equipment……..	1987
ANSI A10.4	Safety Requirements for Personal Hoists.....	1981
ANSI/ASME A90.1	Safety Standard for Belt Manlifts.....	1985
ANSI B77.1	Safety Requirements for Aerial Passenger Tramways and Supplements B77.1a-86 and B77.1b-88.....	1982
ANSI/ASTM F698	Standard Specification for Physical Information to be Provided for Amusement Rides and Devices as modified……	1988
**ASNT/SNT-TC-1A	American Society for Nondestructive Testing Certification/ Qualification Recommended Practice in NDT.....	1992
**ASTM 3.03	Standards for Non-destructive Testing …….	1995
**ASTM F770	Practice for Operation Procedures for Amusement Rides and Devices…….	1988
**ASTM F846	Guide for Testing Performance of Amusement Rides and Devices ……..	1992
**ASTM F853	Practice for Maintenance Procedures for Amusement Devices.....	1991

DOB 1-16-03; 5-22-95; 11-91 BCR; 678-85 BCR; 98-83 BCR
****DOB 3-8-96***

†REFERENCE STANDARD RS 18-1

ANSI/ASME A17.1-1996 Safety Code for Elevators and Escalators and Supplement A17.1a-1997 as Modified.

Wherever in such Code reference is made to the National Electrical Code ANSI/NFPA NO. 70, substitute New York City Electrical code, Rules and Regulations of the Bureau of Electrical Control of the Department of Buildings and its Advisory Board
Wherever in such Code reference is made to the local Building Code, or model building code, substitute New York City Building Code.
Wherever in such Code reference is made to ASME A17.3, Safety Code for Existing Elevators and Escalators, substitute Article 2 of Subchapter 18 of such chapter.

Modifications.- The provisions of ANSI/ASME A17.1-1996 and Supplement A17.1a-1997 shall be subject to the following modifications. The section numbers are from that standard.
§1. Add or amend the following definitions to
Introduction-Section 3 - Definitions:
(i) Amend the definition designated level to read as follows:
Designated level.-The [main] street floor or other level that best serves the needs of emergency personnel for fire fighting or rescue purposes (applicable to Rule 211.3).
(ii) Add the definition elevator classification between elevator and freight elevator to read as follows:
Elevator Classification.- Elevator is classified as freight or passenger.
(iii) Add the definition elevator, service car between elevator, rooftop and elevator, shipboard to read as follows:
Elevator, Service Car.- A passenger or freight elevator located in an Interim Multiple Dwelling registered with the Loft Board, in accordance with Article 7-C of the Multiple Dwelling Law.
(iv) Add the definition hospital emergency service between hoistway gate and hydraulic elevator to read as follows:
Hospital Emergency Service.- A special operating control function that may be provided for elevators in a building classified in occupancy group H-2 (Hospital) or other applicable medical facility used to transport patient in a life or death situation.
(v) Amend subdivisions a and b of the definition "installation placed out of service" to read as follows:
Installation placed out of service.- An installation whose power feed lines have been disconnected from the mainline disconnect switch and;
(a) an electric elevator, dumbwaiter, sidewalk elevator or material lift whose suspension ropes have been removed, whose car and counterweight rest at the bottom of the hoistway, and whose hoistway doors have been permanently barricaded or sealed in the closed position on the hoistway side;
(b) a hydraulic elevator, dumbwaiter, sidewalk elevator or material lift whose car rests at the bottom of the hoistway; whose pressure piping has been disassembled and a section removed from the premises; whose hoistway doors have been permanently barricaded or sealed in the closed position on the hoistway side; suspension ropes removed and

counterweights, if provided, landed at the bottom of the hoistway
(c) an escalator or moving walk whose entrances have been permanently barricaded.
(vi) Add the definition patient elevator between passenger elevator and penetrate a floor to read as follows:
Patient Elevator.- An elevator located in a building classified in occupancy group H-2 (hospital) reserved for the "sole" use of vertical transportation of non-ambulatory patients who are incapable of self-preservation because of age, physical or mental disability. Hospital staff or other passengers transporting patient are permitted to ride with the patient. Such elevators must be operated by a designated attendant and shall meet the requirements of rules 211.4 and 211.5(c) of this reference standard.
(vii) Add the definition platform guard (toe guard or apron) between pit elevator and plunger (ram) to read as follows:
Platform Guard (Toe Guard or Apron).- A section of sheet metal the full width of the door opening, securely attached to the car sill and extending downward, protecting the landing zone.
(viii) Delete the definition of private residence and substitute the following:
Private Residence.- A building in occupancy group J-3 except group home as defined in Section 27-266 of article eleven of subchapter three of this chapter.
(ix) Add the definition sky lobby between skirt, escalator and slack-rope switch to read as follows:
Sky Lobby.- The lowest landing of an elevator or a group of elevators located above the street level.
(x) Add the definition smoke hole between slope, moving walk and solid state device to read as follows:
Smoke Hole.- An opening for an elevator hoistway venting in the elevator machine room floor at the top of the elevator hoistway(s).
(xi) Add the definition zero clearance vestibule after yield strength to read as follows:
Zero Clearance Vestibule.- A space on the elevator lobby between the exterior of hoistway door and the security door attached to the elevator hoistway.
§2 Delete and replace subdivision d of rule 100.1 to read as follows:
100.1d Multiple Hoistways.
(1) Not more than three (3) elevators shall be located in buildings with a single hoistway.
(2) Not more than four (4) elevators shall be located in a single hoistway in buildings with more than one (1) hoistway.
(3) Low rise, mid rise and high rise elevators shall be located in separate hoistways.
§3 Amend sub division d of rule 100.3 to read as follows:
100.3d Construction of Floors.- Floors [may] shall be either of concrete, or [may be] of metal construction [with or] without perforations. [Metal floors shall conform to the following:
(1) If of bar-type grating, the openings between bars shall reject a ball ¾ in. (19mm) in diameter.
(2) If of perforated sheet metal or of fabricated openwork construction, the openings shall reject a ball 1in. (25mm) in diameter.]
§4. Delete and replace rule 100.4 to read as follows:
Rule 100.4 Control of Smoke and Hot Gases.
Hoistways of elevators shall be provided with means to prevent the accumulation of smoke and hot gases in case of fire by any one of the following:
100.4a Vents in the hoistway enclosures.
(1) Location of Vents:
(a) In the side of the hoistway enclosure below the elevator machine room floor or in the roof of the hoistway, and shall be open either directly to the outer air or through non-combustible ducts to the outer air.
(b) In the wall or roof of an overhead elevator machine room through the smoke hole in the top of the elevator hoistway and shall be vented to the outer air through non-combustible ducts.
(2) Area of Vents.- The area of vents in hoistway or elevator machine room and area of smoke hole shall be not less than three and one-half (3½) percent of the area of the hoistway nor less than three (3) square feet for each elevator car, whichever is greater, with the following vent types:
(a) Open Vents.- of the total required vent area, not less than one-third ($^1/_3$) shall be permanently open or with openable hinged damper. Smoke hole shall be permanently open.
(b) Closed Vents.- The two-third ($^2/_3$) closed portion of the required vent area either in the hoistway enclosure or in the elevator machine room may consist of windows or skylights glazed with plain glass not more than one-eighth ($^1/_8$) inch thick. A closed damper that will open upon the activation of a smoke detector placed at the top of the hoistway shall be considered closed vents.
100.4b Mechanical ventilation of the hoistway enclosure.- In all elevator and dumbwaiter hoistways where the venting of elevator and dumbwaiter hoistway is by mechanical means, there shall be provided a system of a mechanical ventilation of sufficient capacity to exhaust at least twelve (12) air changes per hour of the volume of such hoistways through a roof or an approved location on an exterior wall other than the lot line wall, and shall be subject to the following:
(1) The smoke detector shall be placed at the top of these hoistways to activate mechanical ventilation system.
(2) A mechanical ventilation system serving these hoistways shall not pass through the overnight sleeping areas of hotel, apartment house, hospital, or similar building.
(3) A manual control to shut down the mechanical ventilation system shall be provided in or near the elevator control panel at the designated level.
100.4c Air pressurization of hoistway enclosure.- where air pressurization of the hoistway is utilized as a means of smoke and hot gas control, the air shall not be introduced into the hoistway in such a manner as to cause erratic operation by impingement on landing or car door equipment, traveling cables, selector tapes, governor

ropes, compensating ropes, and other components sensitive to excess movement or deflection.

100.4d The Commissioner may accept alternate means to prevent the accumulation of smoke and hot gases in the hoistways of elevators in case of fire.

§5. Amend first paragraph of rule 100.5 to read as follows:

Rule 100.5 Windows and Skylights.

Windows in the walls and skylights at the top of hoistway enclosures are prohibited.

§6 Add subparagraph e to paragraph 1 of subdivision d of rule 101.3 to read as follows:

e. Machine room doors shall be labeled "**ELEVATOR MACHINE ROOM"** with letters not less than two (2) inches (51 mm) high.

§7 Amend subdivision a of rule 101.5 to read as follows:

101.5a control switch shall be located on the lock-jamb side of the access door.

§8. Amend subdivision c of rule 101.5 to read as follows:

101.5c Receptacle.- A duplex receptacle rated at not less than 15A, 120V with ground fault interrupt shall be provided in each machine room and machinery space.

§9. Amend the second paragraph of rule 102.1 to read as follows:

Rule 102.1 Installation of Electrical Equipment and Wiring In Hoistways and Machine Rooms.

Only such electrical wiring, raceways, and cables used directly in connection with the elevator, including wiring for signs, for communication with the car, for lighting, heating, air conditioning, and ventilating the car, for fire detecting systems, for pit sump pumps, and for heating and lighting the hoistway and/or the machine room and electrical wiring permitted by article one of subchapter eighteen of chapter 1 of title 27 of the administrative code, may be installed inside the hoistway and/or the machine room.

§10. Amend rule 103.1 to read as follows:

Rule 103.1 Location of Counterweights.

Counterweights shall be located in the hoistway of the elevator that they serve [or in a remote hoistway, subject to the limitations and requirements of Rule 103.3].

§11. Amend the title of rule 103.3 to read as follows:

Rule 103.3 Existing Remote Counterweight Hoistways.

§12. Add new paragraph 5 to subdivision b of rule 106.1 to read as follows:

(5) Walk-in pits with floors located at the same elevation as the adjacent floor, access landing will not require separate drainage or sump pumps.

§13. Amend paragraph 1 of subdivision d of rule 106.1 to read as follows:

(1) Access shall be by means of the lowest hoistway door or by means of a separate access door located at the level of pit floor.

§14. Add new subparagraphs d and e to paragraph 4 of such subdivision of such rule to read as follows:

(d) If at any point of travel including the car under full compressed buffer, any equipment attached to the car extends within the hoistway space in the pit, the pit door shall be equipped with door electric contact which shall cause the electric power to be removed from the elevator driving-machine motor and brake.

(e) If the door electric contact is installed a sign **"WARNING- Opening of the Pit Door will Stop Elevator"** is attached on the outside of the door.

§15. Amend paragraph 4 of subdivision e of rule 106.1 to read as follows:

(4) A GFI duplex receptacle rated at not less than 15A, 120V shall be provided.

§16. Amend the first paragraph of rule 110.1 to read as follows:

Rule 110.1 Entrances and Emergency Doors Required

All elevator hoistway-landing openings shall be provided with entrances that shall guard the full height and width of the openings. Entrances for passenger elevators shall not be less than 6 ft 8 in. (2032mm) in height and [32 in. (813 mm)] 36 in. (914 mm) in width.

§17. Delete subdivision a of rule 110.1 and replace it with the following:

(a) The clear door opening shall be at least thirty-six (36) inches (914 mm) wide and six (6) feet six (6) inches (1981 mm) high. For floor plan of elevator cars, see subsection 4.10.9 of Section 216.

§18 Delete subparagraph c of paragraph 1 of subdivision a, and paragraph 3 of subdivision b of rule 110.2.

§19. Amend rule 110.6 to read as follows:

Rule 110.6 Opening of Hoistway Doors From Hoistway Side

Passenger elevator hoistway doors shall be so arranged that they may be opened by hand from within the elevator car only when the car is within the unlocking zone{see Rule 111.[12] 5 (c)}, except at an entrance locked out of service.

Means shall not be provided for locking out of service the doors by padlocks or any other physical locking devices at the following landings:

(a) top terminal landing;

(b) bottom terminal landing;

(c) for elevators equipped with Phase I firefighters' service, the designated and [alternate] sky lobby landings shall not be locked out of service when Phase I is effective;

(d) for elevators equipped with Phase II firefighters' service, no landing shall be locked out of service when Phase II is effective;

(e) consecutive vacant floors;

(f) main lobby street floor.

Locking devices electrically inter-connected into the firemen's service key are permitted.

Automatic fire doors, the functioning of which is dependent on the action of heat, shall not lock any elevator hoistway door so that it cannot be opened manually from inside the hoistway, nor shall such doors lock any exit leading from any elevator hoistway door to the outside of the building.

Handles or other means provided for operation of manually operated doors shall be so located that it is not necessary to reach the back of any panel, jamb, or sash to operate them.

§20. Add new subdivisions a, b and c to such rule to read as follows:

110.6a Elevator Landings Provided with Zero Clearance Vestibule.- Elevator landings provided with zero clearance vestibule (not to exceed six(6) inches from the elevator hoistway door) are permissible only when locking devices accessible from the car are installed exclusively on the door that separates the zero clearance vestibule from the occupied floor space.

110.6b Elevator Landing on Floors Other than Designated Level Provided with a Vestibule.- Locking devices at the vestibule will be permitted under any one of the following:

(1) A red telephone is installed in the vestibule near the elevator doors in the elevator lobby to communicate with the main lobby fire command station or building manager's office or to central service station when the building is not attended. A sign shall be posted near the telephone. The sign shall read **"In Case of Fire or Other Emergency, Use This Phone to Contact Lobby or Building Manager or Central Service Station".**

(2) The locking devices on the vestibule door leading to an exit are released upon the activation of any detection or signaling devices or power failure and are approved as fail-safe meeting the requirements of RS17-3A and RS17-3B of such appendix.

(3) At least one exit stair is located within the vestibule.

110.6c Elevator Door Locking on Consecutive Vacant Floors If elevator doors on consecutive vacant floors are to be locked, the locking devices shall be exclusively on vestibule doors meeting the requirements of Rule 110.6a.

§21. Amend paragraphs 1 and 2 of subdivision a of rule 110.7 to read as follows:

(1) The area of any single vision panel shall not be less than [24 in² (0.016 m²)] twelve (12) in² (0.008 m²), and the total area of one or more panels in any hoistway door shall be not more than [80 in² (0.051 m²)] forty (40) in² (0.026 m²).

(2) Each clear panel opening shall reject a ball [6 in (152mm)] four (4) inches (102 mm) in diameter.

§22. Delete subparagraph b of paragraph 4 of such subdivision of such rule.

§23 Add word tools at the end of subparagraph b of paragraph 8 of, and new paragraph 9 to such subdivision of such rule to read as follows:

(9) Vision panels shall be protected in accordance with the provisions of Rule 204.2e(6).

§24. Delete subdivision f of rule 110.11 and re-adopt to read as follows:

(1) Bottom Guides.- Bottom guides shall conform to the following:

(a) The bottom of each panel shall be guided by two or more members.

(b) Guide members shall be securely fastened.

(c) The guide members and any reinforcements or guards shall engage the corresponding member by no less than one forth (¼) inch (6.3mm).

§25. Delete paragraph 6 of subdivision c and subdivision e of rule 110.13.

§26 Add paragraph 6 to subdivision a of rule 110.15 to read a s follows

(6) BS&A or MEA label shall be provided for the entire entrance assembly where required by this rule.

§27 Amend title of section 111 to read as follows:

SECTION 111
HOISTWAY-DOOR LOCKING DEVICES AND ELECTRIC CONTACTS, [AND] HOISTWAY ACCESS SWITCHES AND ELEVATOR PARKING DEVICES

§28. Amend the first sentence of subdivision d of rule 111.2 to read as follows: new and replacement Interlocks shall conform to the following:

111.2 dGeneral Design Requirements.- Both new and replacement Interlocks shall conform to the following requirements:

§29 Delete subparagraphs d and e of paragraph 4 of and add new paragraph 8 to such subdivision of such rule to read as follows:

(8) Interlocks shall be MEA accepted or BS&A approved.

§30 Delete rule 111.3 in its entirety.

§31. Amend paragraph 2 of subdivision c of rule 111.4 to read as follows:

The certifying agency's name, [or] date of approval and identifying number or symbol;

§32. Add rule 111.8 to read as follows:

Rule 111.8 Elevator Parking Device

111.8a Where Required and Location

(1) An elevator parking device shall be provided at one landing if:

(a) the doors are not automatically unlocked when the car is within the unlocking zone; or

(b) the doors are not openable from the landing by a door-open button or floor button.

(2) Parking devices may be provided at other landings.

(3) This device shall be located at a height not greater than 6ft. 11 in.(2108 mm) above floor

111.8b General Design Requirements.- Parking devices shall conform to the following requirements:

(1) They shall be mechanically or electrically operated.

(2) They shall be designed and installed so that friction or sticking or breaking of any spring used in the device will not permit opening or unlocking a door when the car is outside the landing zone of that floor.

(3) Springs, where used, shall be of the restrained compression type which will prevent separation of the parts in case the spring breaks.

§33. Add rule 111.9 to read as follows:

Rule 111.9 Access to Hoistway for Inspection, Maintenance or Repairs

Access means conforming to the requirements of either Rule 111.6a or 111.7a shall be provided at one upper landing to permit access to top of car, and at the lowest landing if this landing is the normal point of access to the pit.

§34. Add rule 111.10 to read as follows:

Rule 111.10 Devices for Making Inoperative Hoistway-

Door Interlocks or Car-Door or Gate Contacts

Devices other than those specified in Rule 111.7 and Rule 210,1e shall not be installed to render inoperative hoistway-door interlocks or car-door or gate electric contacts (also see Rule 1203.4). Both new and existing elevators shall comply with the provisions of this rule.

§35. Add rule 112.7 to read as follows:

Rule 112.7 Power Operated Horizontal Opening Gates

Horizontal power operated gates shall not be permitted on automatic passenger elevators except in private residence elevators.

§36. Add new paragraphs 1 and 2 to subdivision f of rule 201.4 to read as follows:

(1) A fixed inclined ladder shall be provided where the top of the buffer cylinder is over five (5) feet in height above the pit floor.

(2) A fixed vertical or inclined ladder fitted with an inspection and maintenance platform with guard rails as necessary shall be provided where the top the car buffer cylinder is over seven (7) feet from the pit floor.

§37. Add the new sentence to the first paragraph of rule 202.4 to read as follows:

Rule 202.4 Compensating Chain or Rope Fastenings

In suspending chains from the frames, provision shall be made for overtravel by looping the chains on "S" hooks fastened to the frames. Compensating chains or ropes shall be fastened to the counterweight frame directly or to a bracket fastened to the frame and shall not be fastened to the tie rods.

§38. Add rule 202.5 to read as follows:

Rule 202.5 Counterweight Material

Counterweight material shall be only steel, iron or lead having a minimum melting temperature of 620 degrees F.

§39. Add new paragraph to subdivision f of rule 204.1 to read as follows:

A guardrail shall be provided where the space between the car enclosure and the nearest wall surface exceeds eight (8) inches. This rail shall be level with the top of the crosshead in the area of the enclosure roof where the top emergency exits are located. In no case shall the guardrail be less than twenty four (24) inches above the car top.

§40. Amend paragraph 1 and subparagraph d of such paragraph and add new subparagraphs e, f and g to such paragraph of subdivision i of such rule to read as follows:

(1) Apparatus or equipment not used in conjunction with the function or use of the elevator shall not be installed inside of any elevator car and permanently installed freight handling equipment in residential passenger elevators shall be prohibited except as follows:

(d) picture frames, graphic display boards, plaques, and other similar visual displays including one (1) advertising sign in commercial buildings limited to three and one half (3½) square feet in area shall be mounted to withstand the required elevator tests without damage. All edges shall be beveled or rounded. The material shall conform to the requirements of Rule 204.1b and 204.2a. When attached to the car wall less than 7 ft above the floor, projections from the car wall, excluding support rails, shall not be greater than 1½ in (38 mm).

(e) small directories and signs relating to building operation including "No Smoking" signs are permitted.

(f) mirrors in cars in multiple dwellings shall be located to permit a view of the inside by persons entering the car as per Section 27-987(e) of article one of subchapter eighteen of such chapter.

(g) an inspection certificate issued by the commissioner shall be posted as per Section 27-1004 of article four of such subchapter of this chapter.

§41 Add the following new paragraph to subparagraph f of paragraph 2 of subdivision j of such rule to read as follows:

Automatic operation elevators with side emergency exit located in multiple dwelling shall be provided with a tumbler type lock of at least 5-pin type in addition to the lock specified in this rule.

§42. Amend subdivision a of rule 204.2 to read as follows:

204.2a Material for Car Enclosures, Enclosure Linings, and Floor Coverings.- All materials exposed to the car interior and the hoistway shall be metal, laminated glass {Rule 204.1h(3)(a)}, or shall conform to the following.

(1) Materials in their end use configuration, other than those covered by Rules 204.2a(2), and (3), and (4), shall conform to the following requirements, based on the tests conducted in accordance with the requirements of ASTM E 84, UL 723,or NFPA 255:

(a) flame spread [index] rating of 0 to [75] 50;

(b) smoke development of 0 to [450.] 100;

(c) toxicity shall meet the requirements of Section 27-348(e) of the Building Code.

(2) [Napped, tufted, woven, looped, and similar materials in their end use configuration on car enclosure walls shall conform to the requirements of Section 1104. The enclosure walls to which this material is attached shall conform to the requirements of Rule 204.2a(1).] Materials for insulating, sound deadening or decorative purposes may be used for lining enclosures if firmly bonded flat to the enclosure without intervening air spaces. Such materials shall not be padded or tufted, shall be Class A interior finish pursuant to Section 27-348(b) of the Building Code and shall have a smoke development rating of 0 to 25 pursuant to Section 27-348(d) of the Building Code.

(3) Padded protective linings, for temporary use in passenger cars during the handling of freight, shall be of materials conforming to [either] Rule 204.2a(1) [or (2)]. The protective lining shall clear the floor by not less than 4 in. (102 mm).

(4) Floor covering, underlayment, and its adhesive shall [have a critical radiant flux of not less than 0.45 W/cm2 as measured by ASTM E 648.] meet the requirements of section 27-351(d) of the Building Code.

(5) Handrails, operating devices, ventilating devices, signal fixtures, audio and visual communication devices, and their housings are not required to conform to the requirements of Rule 204.2a(1) through (4).

§43. Amend paragraph 1 and add new paragraph 6 to subdivision e of rule 204.2 to read as follows:

(1) be of a total area of not more than [144 in² (0.093 m²),] 72 in² (0.047 m²), and contain no single glass panel having a width exceeding [6 in. (152 mm)] 4 in. (101 mm);

* * *

(6) be protected by protective grills made of number 16 gage stainless or galvanized steel in accordance with the following specifications:

(a) Grills shall be sized to fit within or over the vision panel frame and completely cover the vision panel opening in both the elevator car doors and hoistway doors.

(b) Grills and vision panel frames shall be secured by means of non-reversible screws or other tamper proof fasteners.

(c) Grills shall contain openings that shall not be larger than ¾ inch by ¾ inch or ¾ inch in diameter. Such openings shall be spaced at one (1) inch center to center.

(d) All cut edges shall be deburred.

(e) The provisions of subparagraph (6) shall apply to both new and existing passenger cars. Requirements for such grills may be waived if certification is submitted that said elevator is operated manually or twenty-four (24) hour doorman service is provided. A security guard shall not be considered doorman service.

(f) For the purposes of this subparagraph, a vandal resistant one-quarter (¼) inch polycarbonate sheet, such as Lexan, in two (2) layers, one (1) on each side of the required wire glass, may be used in lieu of the metal protective.

§44. Amend paragraph 2 of subdivision h of rule 204.4 to read as follows:

(2) Gates shall be constructed of wood only for private residence elevators [or] and of metal, and shall be of a design which shall reject a ball 2 in. (51 mm) in diameter.

§45 Amend paragraphs 1,2 and 3 of subdivision m of such rule to read as follows:

(1) for horizontally sliding doors or gates, when the clear open space between the leading edge of the door or gate and the nearest of the jamb does not exceed [2 in. (51 mm)] 1 in. (25 mm)[, except as specified in Rule 204.4m(4)];

(2) for vertically sliding counterweighted doors or gates, when the clear open space between the leading edge of the door or gate and the car platform sill does not exceed [2 in. (51 mm) 1 in. (25 mm);

(3) for horizontally sliding center-opening doors, or vertically sliding biparting counterbalanced doors, or when the door panels are within [2 in. (51) mm] 1 in. (25 mm) of contact with each other[, except as specified in Rule 204.4m(4).].

§46. Delete paragraph 4 of such subdivision of such rule.

§47. Amend the title of subdivision c of rule 204.5 to read as follows:

204.5c Vertically Sliding Doors [or Gates].

§48. Amend paragraph 4 of such subdivision of such rule to read as follows:

(4) Each elevator shall be provided with [an] a guarded electric light and convenience outlet fixture on the car top and under each elevator car platform for inspection and maintenance purposes.

§49. Amend the opening paragraph of rule 205.14 to read as follows

A metal plate shall be securely attached to each safety device so as to be readily visible, and shall be marked in a legible and permanent manner with letters and figures not less than ¼ in. (6.3 mm) in height indicating the following:

§50 Amend rule 208.10 to read as follows:

Rule 208.10 Numbering of Driving Machines

A New York City designated elevator device number is assigned by the Elevator Division of the New York City Department of Buildings to each driving machine in every machine room. Such numbers shall be engraved into the metal tag in block type with a minimum of ¼ in. height and securely attached in a permanent manner to the driving machine, controller, MG set or drive unit and the disconnecting means. In addition, [W] when the machinery of more than one elevator is in a machine room, each driving machine shall be assigned a different number which shall be painted on or securely attached to the driving machine. (See also Rule 211.9.)

§51. Amend rule 208.11 to read as follows:

Rule 208.11 Means for Inspection of Gears

Each gear case of geared machines shall have access to permit inspection of the contact surfaces of the gears. [Such access need not provide a direct view of all gears, but shall be located and sized adequately to allow access by fiber optic or similar visual inspection instrumentation.]

§52 Add paragraph 3 to subdivision b of rule 209.3 to read as follows:

(3) Final limit switches and bracket shall be permanently secured.

§53 Amend first paragraph of subdivision e of rule 210.2 and add new paragraph 5 to such subdivision of such rule to read as follows:

(e) Emergency Stop Switch.- [An emergency stop switch is prohibited in the car on passenger elevators.] On all [freight] elevators, an emergency stop switch shall be provided in the car, and located in or adjacent to each car operating panel. When opened, this switch shall cause the electric power to be removed from the elevator driving machine motor and brake.

* * *

(5) cause the alarm bells to sound as required by Rule 211.1 when activated in elevators that are operated at any time without a designated in-car operator.

§54 Amend subdivision b of rule 210.4 to read as follows:

(b) Electrical equipment shall [be certified to] meet the requirements of CSA B44.1/ASME A17.5.

§55. Add new subdivision d to rule 210.8 to read as follows:

(d) the power supply line disconnect switch of direct current elevators having rheostat control is opened.

§56. Delete rule 210.14.

§57 Delete rule 210.15.

§58. Add the following sentence to the end of first

paragraph of subdivision b of rule 211.1.
In the event that this service is disconnected, the emergency service shall notify the Commissioner promptly of the date of such discontinuance. In institutional buildings, the required telephone shall provide communication with building personnel.
§59. Delete subdivision c of such rule.
§60. Amend subdivision a of rule 211.3 to read as follows:

211.3a Phase I Emergency Recall Operation.- A [three] two-position key-operated switch shall be provided [only] at the designated level and at the sky lobby level when provided for each single elevator or for each group of elevators. The [three] two-position switch shall be marked ["BYPASS," "OFF," and "ON"] "NORMAL," and "FIREMAN SERVICE" [(in that order) with the "OFF" position at the center position]. The [three] two-position switch shall be located in the lobby [within sight of the elevator or all elevators in that group] call button fixture or in a separate fixture which shall be located within four (4) feet from the lobby call button fixture and not exceeding six (6) feet above the floor level and shall not be located behind a locked door or cover. The commissioner with concurrence of the fire commissioner may allow [A] an additional two-position [("OFF" and "ON" in that order)] ("NORMAL" and "FIREMAN SERVICE" key-operated switch [shall be permitted at a central control station for fire department operations] at another location. [The switches shall be rotated clockwise to go from the "OFF" to "ON" position.] All keys shall be removable [only in the "OFF" and "ON"] from any position[s].
No device, other than Phase I switch(es) [or the fire alarm initiating device at the elevator floors] , the smoke detectors in the elevator lobbies, machine room, or hoistway (Rule 211.3b1), or the waterflow alarm (Rule 211.b2), shall initiate Phase I operation [(see ANSI/NFPA 72, definition for initiating device)].
Normal elevator service shall be provided and the operation from the smoke detectors required by Rule 211.3b(1) or the waterflow alarm Rule 211.3b(2) shall be functional when Phase I switches are in the ["OFF"] "NORMAL" position [, except as specified in Rule 211.3a(10)].
[When the designated level three-position switch is in the "BYPASS" position, normal elevator service shall be restored regardless of the status of the smoke detectors required by Rule 211.3b.]
When [three-position switch or two-position] a switch [, when provided,] is in the ["ON"] "FIREMAN SERVICE" position:
(1) All cars controlled by this switch that are on automatic service shall return nonstop to the designated or sky lobby level and power-operated doors shall open and remain open. On cars with two entrances, if both entrances can be opened at the designated or sky lobby level, the doors serving the lobby where the [three] two-position Phase I switch is located shall open and remain open.
(2) A car traveling away from the designated or sky lobby level shall reverse at or before the next available landing without opening its doors.
(3) A car stopped at a landing shall have the in-car emergency stop switch [or in-car stop switch] rendered inoperative as soon as the car moves away from the landing. A moving car shall have the in-car emergency stop switch [or in-car stop switch] rendered inoperative without delay. Once the in-car emergency stop switch [or in-car stop switch] has been rendered inoperative, it shall remain inoperative while the car is on Phase I operation. All other stop switches required by Rule 210.2 shall remain operative.
(4) A car standing at a landing other than the designated or sky lobby level, with the doors open and the in-car emergency stop switch [or in-car stop switch] in the run position, shall conform to the following:
(a) Elevators having automatic power-operated horizontally sliding doors shall close the doors without delay and proceed to the designated or sky lobby level.
(b) Elevators having automatic power-operated vertically sliding doors provided with automatic or momentary pressure closing operation per Rule 112.3d shall have the closing sequence initiated without delay in accordance with Rules 112.3d(1), (2), (3), and (5), and the car shall proceed to the designated or sky lobby level.
(c) Elevators having power-operated doors provided with continuous pressure closing operation per Rule 112.3b or elevators having manual doors, shall be provided with a visual and audible signal system to alert an operator to close the doors and shall, when the doors are closed, conform to the requirements of Rule 211.3a. Sequence operation, if provided, shall remain effective.
(5) Door reopening devices, for power-operated doors, which are sensitive to smoke or flame shall be rendered inoperative without delay. Door reopening devices not sensitive to smoke or flame (e. g., mechanically actuated devices) are permitted to remain operative. Door closing for power-operated doors shall conform to the requirements of Rule 112.5.
(6) All car and corridor call buttons shall be rendered inoperative. All call registered lights and directional lanterns shall be extinguished and remain inoperative. Car position indicators, where provided, shall remain in service. Hall position indicators, where provided, shall be extinguished and remain inoperative except at the designated or sky lobby level and the central control station, where they shall remain in service for fire department operations.
[(7) Where provided on installations with vertical slide doors, corridor door open and corridor door close buttons shall remain operative.]
[(8)](7) All cars shall be provided with an illuminated visual and audible signal system which shall be activated to alert the passengers that the car is returning nonstop to the designated or sky lobby level. [The visual graphic shall be shown in Fig. 211.3a.] The signals shall remain activated until the car has returned to the designated or sky lobby level.
[(9)](8) A car stopped at a landing shall have the in-car door open button rendered inoperative as soon as the car moves away from the landing. A moving car shall have the

in-car door open button rendered inoperative without delay. Once the in-car door open button has been rendered inoperative, it shall remain inoperative until the car has returned to the designated or sky lobby level.
[(10) If an additional two-position Phase I switch is provided, it shall not affect Phase I operation if the designated-level smoke detector [Rule 211.3b(2)] has been activated
(11) The "BYPASS" position on the three-position Phase I switch shall not restore the elevator to normal service if the two-position Phase I switch is in the "ON" position.]
§61 Delete subdivision b of rule 211.3 and re-adopt it to read as follows:

211.3b Phase I Fire Alarm Activation

(1) Smoke Detectors.- Except as set forth in subparagraph k of this paragraph, smoke detectors installed in accordance with subparagraphs a,b,c or d shall initiate Phase I emergency recall operation.

(a) In buildings where fire command station is not required or provided, a single smoke detector shall be installed in the ceiling of each elevator landing over the call button on each floor.

(b) In buildings where fire command station is required or provided, either of the following shall apply:

(1) An analog addressable smoke detector employing alarm verification shall be installed in the ceiling of each elevator landing over the call button on each floor or

(2) Two (2) smoke detectors for cross-zoning shall be installed in the ceiling of each elevator landing on each floor and spaced as follows:

(i) in elevator landing containing one (1) or two (2) elevators, the distance between smoke detectors shall be the width of the hoistway(s) but not greater than ten (10) feet.

(ii) in elevator landing containing three (3) or more elevators, the distance between smoke detectors shall be the distance between the centerlines of the end elevators but not greater than twenty (20) feet.

(c)(1) In associated elevator machine rooms of the buildings of subparagraph a above, a smoke detector shall be installed.

(2) In associated elevator machine rooms of the buildings of paragraph b above, either of the following shall be installed:

(i) An analog addressable smoke detector employing alarm verification or

(ii) At least two (2) smoke detectors for cross zoning, spaced twenty (20) feet apart but not closure to the hoistway enclosure walls ¼ distance of the width of the machine room.

(d) A smoke detector shall be installed at top of the hoistway(s) of the buildings classified in occupancy group J-2. Smoke detectors may be installed in any other hoistway and shall be installed in hoistways, which are sprinklered (see Rule 102.2).

(e) Smoke detectors are not required in elevator landings at unenclosed landing which are open to the outside air.

(f)(1) In the buildings of subparagraph a above, where a single smoke detector is installed in the elevator landing, the activation of a smoke detector in any elevator landing, other than the sky lobby shall cause all automatic elevators servicing floor on which the sensing device is activated to return nonstop to the designated or sky lobby level, except as modified by the commissioner.

(2) In the buildings of subparagraph b above, where either an analog addressable smoke detector or two (2) smoke detectors for cross-zoning are installed, the activation of either an analog addressable smoke detector or any one of two smoke detectors for cross-zoning in any elevator lobby shall only annunciate at the fire command station with floor identification. After verification of an alarm condition either from the analog addressable smoke detector or from the first detector of cross-zoning detectors, the completion of delayed time period of an analog addressable smoke detector or the activation of both smoke detectors for cross-zoning in any elevator lobby other than the sky lobby shall cause all automatic elevators servicing floor on which the sensing device is activated to return nonstop to the designated or sky lobby level, except as modified by the commissioner.

(3) In associated machine rooms of item 1 of subparagraph c above, the activation of smoke detector in the elevator machine room shall cause all automatic elevators having any equipment located in that machine room, and any associated elevators of a group automatic operation to return nonstop to the designated or sky lobby level, except as modified by the commissioner.

(4) In associated machine rooms of item 2 of such subparagraph above, where either an analog addressable smoke detector or two (2) smoke detectors for cross-zoning are installed, the activation of either an analog addressable smoke detector or any one of two smoke detectors for cross-zoning in any elevator machine room shall only annunciate at the fire command station with floor identification. After verification of an alarm condition either from the analog addressable smoke detector or from the first detector of cross-zoning detectors, the completion of delayed time period of an analog addressable smoke detector or the activation of both smoke detectors for cross-zoning in any elevator machine room shall cause all automatic elevators having any equipment located in that machine room, and any associated elevators of a group automatic operation to return nonstop to the designated or sky lobby level, except as modified by the commissioner.

(5) The activation of a smoke detector in any elevator hoistway shall cause, in addition to the activation of mechanical ventilation if provided (see Rule 100.4) all automatic elevators having any equipment located in the hoistway and any associated elevators of a group automatic operation, to return nonstop to the designated or sky lobby level.

The operation of this subparagraph shall conform to the requirements of Rule 211.3a.

(g) When the lowest landing of elevators is above the designated level, such as the sky lobby level, the activation of smoke detectors {Rule 211.3b(1)} in the sky lobby level or the activation of the waterflow alarm {Rule 211.3b(2)} on the sky lobby floor shall cause such elevators to return nonstop to a floor two (2) stories above the sky lobby level

or in the absence of a stop at that floor, to the nearest landing above the sky lobby level.

(h) Elevators shall only react to the first smoke detector zone that is activated for that group.

(i)Smoke detectors and/or smoke detector systems shall not be self-resetting.

(j) Activation of smoke detectors to initiate elevator recall shall override any automatic programming for car stops but shall not affect the other elevator safety circuits.

(k) The following buildings shall be exempt from the requirements of this rule:

(1) Buildings classified in occupancy group J-2, except they shall comply with the requirements of Rule 211.3b(1)d.

(2) Buildings classified in occupancy group J-3.

(3) Existing buildings less than 75' in height classified in occupancy group G which have at least one (1) elevator available at all times for immediate use by the fire department and which are in compliance with the fire department 's regulations governing "life safety requirements for schools with students having physical disabilities".

(4) Existing office buildings, one hundred feet or more in height and existing high buildings as defined by Section 27-232 of the Building Code equipped throughout with an automatic sprinkler system including a waterflow alarm.

(2) Sprinkler Waterflow Alarm.- A building equipped throughout with an automatic sprinkler system, a waterflow alarm when activated shall initiate Phase I (Rule 211.3a) emergency recall operation.

§62 Amend subdivision c of rule 211.3 to read as follows:

211.3c Phase II Emergency In-Car Operation.- A three-position (["OFF"] "NORMAL", "HOLD", and ["ON"] "FIREMAN SERVICE" in that order) key-operated switch shall be provided in an operating panel in each car. The switch shall be rotated clockwise to go from the ["OFF"] "NORMAL" to "HOLD" to ["ON"] "FIREMAN SERVICE" position. It shall become effective only when the designated or sky lobby level Phase I switch (Rule 211.3a) is in the ["ON"] "FIREMAN SERVICE" position or a smoke detector (Rule 211.3b(1)) or waterflow alarm (Rule 211.3b(2)) has been activated, and the car has returned to the designated or [alternate] sky lobby level by Phase I operation.

The key shall be removable in [each] "NORMAL" or "HOLD" position. The ["OFF,"] "NORMAL," "HOLD," and ["ON"] "FIREMAN SERVICE" positions shall not change the operation until the car is at a landing with the doors in the normal open position.

(1) When the Phase II switch is in the ["ON"] "FIREMAN SERVICE" position, the elevator shall be on Phase II operation, [for use by trained emergency service personnel only,] and the elevator shall operate as follows:

(a) The elevator shall be operable only by a designated person in the car.

(b) All corridor call buttons and directional lanterns shall remain inoperative. Car position indicators, where provided, shall remain in service. Hall position indicators, where provided, shall remain inoperative except at the designated level, sky lobby level and the central control station, where they shall remain in service for fire department operations.

(c) The opening of power-operated doors shall be controlled only by a continuous pressure door open button. If the button is released prior to the door reaching the normal open position, the doors shall automatically re-close. Rules 112.4(a), 112.3c, and 112.3d do not apply. On cars with two entrances, if both entrances can be opened at the same landing, separate door-open buttons shall be provided for each entrance.

(d) Open power-operated doors shall be closed only by [continuous] momentary pressure on the door close button. [If the button is released prior to the doors reaching the fully closed position, horizontally sliding doors shall automatically reopen and vertically sliding doors shall automatically stop or stop and reopen.] On cars with two entrances, if both entrances can be opened at the same landing, a separate door-close button shall be provided for each entrance.

(e) Opening and closing of power operated car doors or gates which are opposite manual swing or manual slide hoistway doors shall conform to the requirements of Rules 211.3c(1)(c) and (d). Door opening and closing buttons shall be provided in the car operating panel.

(f) [All door] Door reopening devices [shall be] rendered inoperative, per Rule 211.3a(5) shall remain inoperative. Full speed closing is permitted. Corridor door opening and closing buttons, if provided, shall be rendered inoperative.

(g) Every car shall be provided with a button marked "CALL CANCEL" located in the same car operating panel as the Phase II switch, which shall be effective during Phase II operation. When activated, all registered calls shall be canceled and a traveling car shall stop at or before the next available landing.

(h) Floor selection buttons shall be provided in the car to permit travel to all landings served by the car and they shall be operative at all times. Means [to] which prevent the operation of the floor selection buttons or door operating buttons shall be rendered inoperative.

(i) A traveling car shall stop at the next available landing for which a car call was registered. When a car stops at a landing, all registered car calls shall be cancelled.

(j) The emergency stop switch shall remain operative.

(2) When the Phase II switch is in the "HOLD" position, the elevator shall be on Phase II operation. The car shall remain at the landing with its doors open. The door close buttons shall be inoperative.

(3) When the Phase II switch is in the ["OFF"] "NORMAL position, the elevator is not at the designated or sky lobby level and Phase I is in effect, the elevator shall operate as follows .

(a) Automatic power-operated horizontally-sliding doors shall close automatically and the car shall revert to Phase I operation (Rule 211.3a) upon completion of door closing. All door reopening devices shall remain inoperative. Door open buttons shall remain operative. Full speed closing is permitted. If the Phase II switch is turned to the ["ON"] "FIREMAN SERVICE" or "HOLD" position prior to the

completion of door closing, the doors shall reopen.
(b) Elevators having power operated vertically sliding doors shall have corridor door open and close buttons rendered operative. All door reopening devices shall remain inoperative. Door closing shall be in accordance with the requirements of Rule 211.3c(1)(d). Full speed closing is permitted. If the Phase II switch is turned to the ["ON"] "FIREMAN SERVICE" or "HOLD" position prior to the completion of door closing, the doors shall reopen. The car shall revert to Phase I operation (Rule 211.3a) upon completion of door closing.
(c) Elevators having manual doors shall revert to Phase I operation (Rule 211.3a) upon completion of door closing.
(4) When the Phase II switch is in the ["OFF"] "NORMAL position and the car is not at the designated or the sky lobby level, and Phase I is not in effect, the car shall remain at the landing with the doors open and door-close buttons inoperative[.] and shall remain in Phase II.
(5) Elevators shall only be removed from Phase II operation when :
(a) The Phase II switch is in the ["OFF"] "NORMAL" position and the car is at the designated or sky lobby level with the doors in the normal open position; or
(b) The Phase II switch is in the ["OFF"] "NORMAL" position when Phase I is in effect {Rule 211.3c(3)}.
(6)(a) For all elevators, applications filed after March 12, 1991 (the effective date of adoption of Cal #11-91-BCR), which propose the installation, alteration or change of controller, elevator machinery and any other work, excluding minor alteration and ordinary repairs as defined in Sections 27-124 and 27-125 of article five of subchapter one of this chapter, and applications filed for new elevator, the cost of which exceeds $10,000 per car over a twelve (12) month period or applications filed for compliance with the requirements of Section 27-996.2 of subchapter eighteen of this chapter shall comply with the requirements of this subdivision.
(b) Applications filed between November 17, 1989 and March 12,1991 for existing elevators which propose the work described in (6)(a) above, shall comply with the requirements of this subdivision.
(c) In elevators subject to the requirements of (6)(a) and (b) above, a "HOLD" position by means of either a three-position switch or a two-position switch in addition to an existing two position ("NORMAL" and "FIREMAN SERVICE") switch and designate the "HOLD" position by engraving or permanently affixing a label to the operating panel of the elevator car.
(d) Applications filed for the installation or modification of Phase II Emergency In-Car Operations/Fireman's Service in existing elevators for which a permit was issued prior to November 17,1989 and the work completed by November 16, 1991 need not provide for the retrofitting of a "HOLD" position on the Emergency In-Car Operating switch, however, the permittee can elect to provide a "HOLD" position.
§63. Amend subdivision d of such rule to read as follows:
211.3d Interruption of Power.- Upon the resumption of power (normal, emergency, [or] standby or actuation of in-car emergency stop switch), the car [may] shall move in the down direction to [reestablish absolute car position] designated or sky lobby level. Restoration of electrical power following a power interruption shall not cause any elevator to be removed from Phase I or Phase II operation.
§64. Add two new subdivisions f and g to such rule to read as follows:
211.3f Emergency Power Selection Switch.- When emergency power is furnished (Rule 211.2) a manual elevator emergency power selection switch shall be provided at the main floor and other levels, approved by the Commissioner to override any automatic sequence operation. If the manual elevator emergency standby power selection switch is of the key-operated type, the switch keys shall conform to the requirements of Rule 211.8.
211.3g Identification of Switches and Buttons
(1)All keyed switch positions and buttons required by this subdivision shall be identified with the appropriate designation in red lettering.
(2) All cover plates for such switches and buttons shall bear the lettering "**FOR FIRE DEPARTMENT USE ONLY."**
§65. Amend subdivision a of rule 211.4 to read as follows:
211.4a Phase I Emergency Recall Operation.- A [three] two- position key-operated switch shall be provided only at the designated or the sky lobby level for each single elevator or for each group of elevators. The [three] two-position switch shall be marked ["BYPASS," "OFF," AND "ON"] "NORMAL" and "FIREMAN SERVICE" (in that order). The Commissioner with the concurrence of the Fire Commissioner may allow [A] an additional two-position key-operated switch marked ["OFF" and "ON"] "NORMAL" and "FIREMAN SERVICE" (in that order) [may be provided] at [any] other location, however, it shall not affect Phase I operation if the designated-level or sky lobby-level smoke detector or waterflow alarm (Rule 211.4b) has been activated. The switch(es) shall be rotated clockwise to go from the ["OFF"] "NORMAL" to ["ON"] "FIREMAN SERVICE" position.] All keys shall be removable [only in the "OFF" and "ON"] from any position[s].
No device, other than Phase I switch(es), [or] the smoke detectors in the elevator lobbies, machine room, or hoistway (Rule 211.3b1), or waterflow alarm in lieu of smoke detectors in the elevator lobbies (Rule 211.3b2) shall initiate Phase I operation.
When all switches are in the ["OFF"] "NORMAL" position, normal elevator service shall be retained and operation from the smoke detectors or waterflow alarm required by Rule 211.4b shall be functional.
[When the designated-level three-position switch is in the "BYPASS" position, normal elevator service shall be restored independent of the smoke detectors required by Rule 211.4b.]
When a Phase I switch is in the ["ON"] "FIREMAN SERVICE" position, a visual and audible signal shall be

provided to alert the attendant to return nonstop to the designated or [alternate] sky lobby level. The visual signal shall read "FIRE RECALL – RETURN TO {insert level to which the car should be returned (the designated or [alternate] sky lobby level)}.The [signal system] The smoke detectors or waterflow alarm shall be activated when Phase I is in effect.

[If an additional two-position Phase I switch is provided it shall not affect the visual signal if the designated-level smoke detector {Rule 211.3b(2)} has been activated.

The "BYPASS" position on the three-position Phase I switch shall not restore the elevator to normal service if the two-position Phase I switch is in the "ON" position.]

§66. Delete subdivision b of this rule and re-adopt it to read as follows:

211.4b Phase I Smoke Detectors or Waterflow Alarm Devices Activation.- Smoke detectors shall be installed in accordance with the requirements of Rules 211.3b(1)(a),(b),(c), and (d).

Phase I operation, conforming to Rule 211.4a shall be initiated when either any smoke detector, in accordance with the requirements of Rule 211.3b(1)(f) or waterflow alarm, in accordance with the requirements of Rule 211.3b(2) is activated.

(1) When the lowest landing of elevators is above the designated level such as the sky lobby level , the activation of smoke detectors or waterflow alarm in sky lobby or sky lobby floor shall cause such elevators to return nonstop to a floor two (2) stories above the sky lobby level or in the absence of a stop at that floor, to the nearest landing above the sky lobby level.

(2) Elevators shall only react to the first smoke detector zone that is activated for that group.

(3) Smoke detectors and/or smoke detector system shall not be self-resetting.

(4) Activation of smoke detectors to initiate elevator recall shall override any automatic programming for car stops but shall not affect the other elevator safety circuits.

(5) The buildings described in Rule 211.3b(1)(k) and meeting its requirements and buildings equipped throughout with an automatic sprinkler system are exempt from the requirements of this rule.

§67. Amend subdivision b of rule 211.5 to read as follows:

b) When operated by a designated attendant in the car (except hospital emergency service):

(1) elevators parked at a floor shall conform to the requirements of Rule 211.3a[(8)](7). At the completion of a time delay of not less than 15 seconds or more than 60 seconds, elevators shall conform to the requirements of Rule 211.3.

(2) a moving car shall conform the requirements of Rule 211.3.

§68 Delete subdivision c and re-adopt it to read as follows:

(c)(1) Hospital Emergency Service Recall Operation. A two-position key-operated corridor call (Hospital Emergency Service) switch is provided at one or more landings to activate the special control function by authorized or designated personnel. The two-position switch shall be marked "NORMAL" and "HOSPITAL EMERGENCY SERVICE". Keys shall be removal only in the "NORMAL" position.

(a) When a switch is in the "**HOSPITAL EMERGENCY SERVICE**" position:

(1) All patient elevator cars equipped with the special control function, override normal automatic operating modes for immediate recall of the patient elevator(s) to the landing at which the call is registered.

(2) On patient elevator cars with two entrances, if both entrances can be opened at the designated level, The doors serving the corridor where the two-position Hospital Emergency Service switch is located shall open and remain open.

(3) A patient elevator car traveling away from the designated level shall reverse at or before the next available landing without opening its doors.

(4) A patient elevator car stopped at a landing other than the designated level, with the doors open and in-car emergency stop switch in the run position, shall close the doors without delay and proceed to the designated level.

(5) A visual and audible signal is activated within the patient elevator car to alert the passengers and/or attendant operator that the "Hospital Emergency Service" function has been activated.

(4) Upon arrival at the registered call landing, power operated doors open automatically and remain in the open position for a predetermined adjustable time period to allow the authorized personnel sufficient time to activate the "In-Car" special operation function.

(6) If the Phase I (Rule 211.3a) recall mode is initiated while the elevator is under "Hospital Emergency Service" recall mode and :In-Car" hospital emergency service is not activated, the elevator shall revert to Phase I Rule 211.3a) operation.

(7) Hospital emergency service corridor recall shall not override fire emergency Phase I (Rule 211.3a) or Phase II (Rule 211.3c) operation in effect.

(c)(2) Hospital Emergency Service In-Car Operation. A two-position "NORMAL" and " HOSPITAL EMERGENCY SERVICE" key-operated switch is provided in an operating panel inside the patient elevator(s) to activate the "Hospital Emergency Service, a special independent operating mode. The switch shall be rotated clockwise to go from the "NORMAL" to "HOSPITAL EMERGENCY SERVICE" position. It shall become effective only when the designated level corridor call "Hospital Emergency Service" switch is in the "HOSPITAL EMERGENCY SERVICE" position and car has returned to the designated level by "Hospital Emergency Service" recall operation.

(a) When the "In-Car" switch is in the "HOSPITAL EMERGENCY SERVICE" position, the patient elevator shall be on Hospital emergency Service operation, and the patient elevator shall operate as follows:

(1) The patient elevator shall be operable only by a designated person in the car.

(2) Activation of the "In-Car" operating mode removes the patient elevator from normal automatic and/or attendant service.
(3) After the activation of "In-Car" operation mode, the patient elevator(s) shall not be recalled under Phase I (Rule 211.3a) operation.
(4) Doors remain open until the authorized person registers the car call and initiate the door closing function.
(5) The patient elevator shall travel directly to the selected landing overriding normal corridor call demand or Phase I (Rule 211.3a) recall and automatically opens the doors upon the arrival at the selected landing, except when the smoke detector(s) are activated on the selected landing or the waterflow alarm is activated on that floor before the patient elevator has reached the selected landing, the patient elevator shall stop at a floor two stories below the selected landing or in the absence of a stop at that floor, at the nearest landing below the selected landing.
(6) The patient elevator has reached the selected floor and the smoke detector(s) are activated on that landing or the waterflow alarm is activated on that floor before the doors are open, the patient elevator without opening the doors shall travel to a floor two stories below the selected landing or in the absence of a stop at that floor, to the nearest landing below the selected landing.
(7) Doors shall remain open with the audible and visual signal functioning until the "in-Car" switch is turned to the "NORMAL" position or for a predetermined adjustable time period to allow the removal of patient from the car and the patient elevator is placed into automatic, attendant or Phase I (Rule 211.3a) if in effect, operating mode.
(8) Upon transfer from "HOSPITAL EMERGENCY SERVICE" back to normal operation during a fire emergency and Phase I (Rule 211.3a) is in effect, the patient elevator shall be automatically recalled to the designated level.
(c)(3) Hospital Emergency Service Switches Color. Color of the Hospital Emergency Service switches located in corridor at the designated level and inside the patient elevator(s) operating panel shall be "BLUE".
§69 Delete rule 211.7.
§70. Amend rule 211.8 to read as follows:
The switches required by Rule 211.2 through 211.5 for all elevators in a building shall be operable only by [the same] a city-wide standard key and shall also made operable by the Fire Department standard key. [This key shall not be part of a building master key system. There shall be a key for the designated level switch and for each elevator in the group.] The citywide standard key shall be designed in accordance with the requirements of the Fire Department and shall be obtained only through Fire Department authorization. [These] Citywide standard keys shall be kept on the premises by a person responsible for the maintenance and operation of the elevators in a location readily accessible to authorized [personnel] persons in an emergency, but not where they are available to the public.
[NOTE (Rule 211.8): Local authorities may specify a uniform keyed lock box to contain the necessary keys.]
§71. Delete paragraph 3 of subdivision e of rule 212.9 and re-adopt it to read as follows:
(3) Suppliers of wedge sockets shall submit certification with an MEA Number after successfully passing the tests described in Rule 212.9e(1) and(2) at an MEA certified testing laboratory to secure MEA acceptance. Sockets shall be tagged with visible permanent manufacturer's identification with an MEA Number.
§72. Amend rule 213.1 to read as follows:
Rule 213.1 Qualification of Welders
Where required by another Rule of the [this] Code welding of parts, except for tack welds later incorporated into finished welds, shall be done by welders qualified in accordance with the requirements of [Section 5 of ANSI/AWS D1.1.
At the option of the manufacturer or contractor, the welders may be qualified by one of the following:
(a) the manufacturer or contractor;
(b) a professional consulting engineer;
(c) a recognized testing laboratory.] The City of New York. When the manufacturer is located in the City of New York its welders shall be licensed in accordance with the provisions of the Administrative Code. When the manufacturer is not located in the City of New York its welders shall either be licensed in accordance with the provisions of the Administrative Code, or in the alternative, pursuant to paragraphs (f) and (o) of Section 25-01 of Title 2 of the Rules of the City of New York, shall possess documentary evidence from a testing laboratory acceptable to the Commissioner attesting that the applicant has passed the qualification test prescribed by the City of New York.
§73. Adopt section 4.10 Elevators of ANSI A117.1-1986 as modified as a new section 216.
SECTION 216
Passenger Elevators Designed to Accommodate Persons Having Disabilities
Section 4.10 Elevators
4.10 General
(i) Amend the last sentence of subsection 4.10.1 to read as follows:
Freight elevators shall not be considered as meeting the requirements of this section unless the only elevators provided are used as combination passenger and freight elevators meeting the requirements of rule 207.4 of ANSI A17.1-1996.
4.10.2 Automatic Operations
4.10.3 Hall Call Buttons
4.10.4 Hall Lanterns
4.10.5 Raised Characters on Hoistway Entrances
4.10.6 Door Protective and Reopening Device
4.10.7 Door and Signal Timing for Hall Calls
4.10.8 Door Delay for Car Calls
4.10.9 Floor Plan of Elevator Cars
(ii) Amend subsection 4.10.9 of this section to read as follows:
4.10.9 Floor Plan of Elevator Cars.- The floor area of elevator cars shall provide space for wheelchair users to enter the car, maneuver within reach of controls, and exit from the car. Acceptable door opening and inside dimensions

shall be as shown in Figure 22 with the following exception for the existing installation. The clearance between the car platform sill and the edge of any hoistway landing shall be no greater than [11/4 inch (32 mm)] 11/2 inch (38 mm).
Exception:
1. The replacement of an existing elevator car whose clear depth is 48 inches or more and width is 48 inches or more but less than 54 inches and are limited by the existing car platform or hoistway shaft. The door opening shall be 32 inches.
2. The replacement of an existing car need not comply with the requirements of door opening, if the clear depth and width are less than 48 inches and is limited by the existing car platform or hoistway shaft.
3. If the new car door opening is larger than the hoistway door opening, the travel of car shall be limited to the opening of the hoistway door.
4.1010 Floor Surfaces
4.10.11 Illumination levels
4.10.12 Car Controls
4.10.13 Car position Indicators
4.10.14 Emergency Communication.
§74 Amend rule 300.2 to read as follows:
Rule 300.2 Machine Rooms and Machinery Spaces
Machine rooms and machinery spaces shall conform to the requirements of Rule 101.1 through 101.5 and Rule 101.7 and shall be vented to the outside air naturally or mechanically.
§75 Add the following sentence to the end of subdivision g of rule 300.8 to read as follows:
Space above the escape hatch defined by the guard railing shall be designated as the refuge space.
§76 Amend the first paragraph of rule 301.8 to read as follows:
Rule 301.8 Car Safeties
Car safeties shall be provided for roped-hydraulic elevators and [shall be permitted to be provided for] direct-acting hydraulic elevators.[when provided ,c] Car safeties shall conform to the requirements of Section 205 and to the following:
§77. Delete rule 303.7.
§78. Amend paragraph 2 of subdivision a of rule 306.3 to read as follows:
(2) It shall maintain the car within [25mm (1 in.)] 13 mm (1/2 in.) of the landing irrespective of the position of the hoistway door. See subsection 4.10.2 of Section 216.
§79. Amend subdivision b of rule 306.6 to read as follows:
(b) Electrical equipment shall [be certified to] meet the requirements of CSA B44.1/ASME A17.5.
§80. Amend subdivision b of rule 508.4 to read as follows:
(b) Electrical equipment shall [be certified to] meet the requirements of CSA B44.1/ASME A17.5.
§81. Delete PART VI in its entirety.
§82. Amend paragraph 2 of subdivision e of rule 702.4 to read as follows:
(2) Electrical equipment shall[be certified to] meet the requirements of CSA B44.1/ASME A17.5.
§83. Delete section 800 and re-adopt it to read as follows:

SECTION 800
PROTECTION OF FLOOR OPENING
Rule 800.1 Protection required
Floor openings for escalators shall be protected against the passage of flame, heat and/or smoke or gases in the event of fire.
Rule 800.2 Escalators Accredited as a Required Means of Egress
Escalators accredited as a required means of egress shall meet the requirements of Section 27-378 of article five of subchapter six of this chapter.
Rule 800.3 Escalators not Accredited as a Required Means Of Egress
Escalators not accredited as a means of egress shall have the floor openings protected by any one of the following:
800.3(a) Full enclosures- as specified in Rule 800.2 of this section.
800.3(b) Automatic rolling shutters-
Unenclosed escalators, which are not protected as specified in subdivision a of this rule shall be equipped with a power-operated automatic rolling shutter at every floor pierced thereby, constructed of noncombustible materials with a fire resistance rating of not less than one and one-half (1½) hours.
Construction.- The shutter shall close immediately upon the activation of the fire detection system in the building and shall completely close the well opening. The shutter shall operate at a speed of not more than 30 feet per minute (0.15 m/s) and shall be equipped with a sensitive leading edge to arrest its progress when in contact with any obstacle, and to continue its progress on release therefrom. There shall be a manual means of operating and testing the operation of the shutter. The shutters shall be operated by building personnel at least once a week to assure that they remain in proper operating condition.
800.3(c) Sprinkler protection-
In buildings completely protected by an automatic sprinkler system complying with the construction requirements of subchapter seventeen of this chapter, escalator openings shall be protected by a draft curtain and by a deluge sprinkler system designed to form a vertical water curtain.
Draft curtain.- A draft curtain shall be installed in each story of the floor opening. The draft curtain shall enclose the perimeter of the opening and shall extend from the ceiling downward at least twenty-four (24) inches on all sides. The lower edge of the draft curtain shall be not less than twelve (12) inches below the bottom of the sprinkler heads. Sprinkler heads of the deluge sprinkler system shall be within two (2) feet of the draft curtain.
§83A. Amend rule 802.3c to read as follows:
802.3e Clearance Between Balustrades and Steps.-
The clearance on either side of the steps between the steps and the adjacent skirt guard shall be not more than three-sixteenths (3/16) inch, and the sum of the clearances on both sides shall be not more than one-quarter (1/4) inch.
§83B. Delete the EXCEPTION to Rule 802.3c.
§84. Delete rule 805.2 and re-adopt it to read as follows:

Rule 805.2 Starting Devices

In every new and existing escalator, starting devices shall be provided with the combination of a starting switch and a starting button. The escalator shall be started only after the activation of both the switch and the button.

(a) Starting Switch.- Starting switch shall be of continuous pressure spring return type and shall be operated by a cylinder type lock having five-pin, five-disc or five-tumbler combination. Starting switch shall be of three-position type and shall be clearly marked as follows:

NORMAL.- A central position for the key entry and spring return position.

START-UP.- A right side position for starting the escalator in the upward direction.

START-DOWN.- A left side position for starting the escalator in the downward direction.

(b) Starting Button.- Starting button shall be of the constant pressure type and located within six (6) inches from the starting switch. It shall be clearly marked "**Starting Button".**

(c) Cover Plate.- The starting devices shall be protected by a locked, transparent cover plate that can be opened by the starting key and clearly marked **"For Start Only."**

(d) Location of starting devices.- Starting devices shall be located at top and bottom of the escalator on the right side-facing newel.

NOTE: The starting key shall be kept on the premises at all times and may only be accessible to persons authorized to start escalators. It shall also be made available to the Commissioner or his representative.

§85. Amend paragraph 1 of subdivision a of rule 805.3 to read as follows:

(1) Location.- A red stop button shall be visibly located at the top and bottom landings on the right side facing the escalator. Remote stop buttons are prohibited except that any escalator connected to an automatic fire alarm system shall gradually stop not exceeding the speed of 3 ft per sec^2 (0.91 m/s^2) upon the activation of such system.

§86. Amend subdivision f of such rule to read as follows:

805.3f Skirt Obstruction Device.- Means shall be provided to cause the electric power to be removed from the escalator driving machine motor and brake, if an object becomes caught between the step and the skirt as the step approaches the upper [or] combplate, intermediate device or lower combplate. On units having a run of twenty (20) feet or more intermediate devices shall be provided on both sides of the escalator with devices located at interval of ten (10) feet or less. The activation intermediate devices shall stop the escalator at a rate not greater than 3 feet per second square in the direction of travel. The upper and lower combplate devices shall be located so that the escalator will stop before that object reaches the combplate. The activation of any skirt device shall stop the escalator with any load up to full brake rated load with escalator running {Rules 802.9c(1)(b) and 802.9c(2)(b)}.

§87. Amend the first paragraph of subdivision n of such rule to read as follows:

805.3n Combplate Impact Devices.

Two independent devices, one at the side of the combplate and the other at the center of the front edge of the combplate shall be provided. Devices [which] will cause the opening of the power circuit to the escalator driving machine motor and brake if either:

§88. Add new subdivision q to such rule to read as follows:

805.3q Comb-Step Stop Device.- On every new and existing escalator a comb-step stop device shall be provided at the upper and the lower comb-steps. Any obstruction exerting a pressure of 45 lbs for steps not exceeding thirty two (32) inches in width and 60 lbs for steps over thirty two (32) inches in width between the step tread and comb-step shall activate the comb-step stop device to cause the electric power to be removed from the escalator driving machine motor and brake.

§89 Amend the first paragraph of subdivision k of rule 905.3 to read as follows:

905.3k Comb-Pallet Impact Devices. Two independent devices, one at the side of the comb-pallet and the other at the center of the front edge of the comb-pallet shall be provided. Devices [which] will cause the opening of the power circuit to the moving walk driving machine motor and brake if either:

§90. Add new subdivision l to rule 905.3 to read as follows:

905.3l Comb-Pallet Stop Device.-In every new and existing moving walkway, a comb-pallet stop device shall be provided at the entrance to and exit from a moving treadway. Any obstruction exerting a pressure of 45 lbs for treadway not exceeding thirty two (32) inches in width and 60 lbs for treadway over thirty two (32) inches in width between the moving treadway and comb-pallet shall activate the comb-pallet stop device which will cause the opening of the power circuit to the moving walk driving-machine motor and brake.

§91 Delete rule 1000.1 and re-adopt it to read as follows:

Rule 1000.1 Persons Authorized to Make Inspections and Tests

The inspector shall meet the qualification requirements of the Department of Buildings of the City of New York.

§92. Delete rule 1000.3 and re-adopt it to read as follows:

Rule 1000.3 Installation Placed Out of Service

Where for any reason an installation is placed out of service permanently or temporary (see Section 3 definition) so that it cannot be operated for a definite period, it shall comply with the following requirements:

1000.3a Elevators Are Not in Use.- If these elevators are available for service, all required tests shall be regularly performed. These elevators are similar to those in service except that their power feed lines have been disconnected by opening the main line switch. A periodic inspection shall be made and a fee charged. An elevator inspector shall note such requirements when found on a regular inspection.

1000.3b Elevators Placed Out of Active service (Dismantled).- These elevators shall meet the requirements of Section 3 definition for installation placed out of service. In addition, a Building Notice application shall be filed and

the last inspection fee charged. Thereafter, one (1) additional inspection per year shall be made to verify that the status is unchanged and fees shall be paid for such inspection. Before the installation is put back in service, a Building Notice application is filed. For access, it shall comply with the requirements of Rule 1000.3c(1)(b)(4).

1000.3c Elevators Are Removed and Permanently Discontinued

(1) When a single elevator with one elevator shaftway is removed and permanently discontinued, a Building Notice application shall be filed, fees charged for last inspection and shall meet the following requirements for such discontinuance for sealing of elevator hoistway shaft:

(a) If it is proposed to extend the floor at every story of the building, the new construction shall be the same or of similar construction as the existing adjacent floor and of equivalent or better fire resistive rating. Also the elevator car and guide rails, the counterweight and guide rails, all wire cables and other equipments in the hoistway shaft shall be completely removed.

(b) If the hoistway shaft is to remain open-

(1) in addition to the requirements of subparagraph a above except floor construction, all door and window assemblies opening onto masonry shaftway and masonry enclosed associated machine rooms, except as noted in item 4 of this subparagraph below shall be completely removed and the open space so created shall be filled with the same material of equal thickness, or similar material and of equivalent or better fire restive rating as the adjacent masonry.

(2) all door and window assemblies opening onto hoistway shaft originally enclosed with an open wire screen and subsequently enclosed with other than masonry units (i.e. metal lath and plaster or transite boards), except as noted in item 3 of this subparagraph below, shall remain. However, the door and window assemblies shall be fastened in a closed position and shall be adequately welded shut. The assembly shall, in addition, be enclosed in material of equal thickness, or of similar material and of equivalent or better fire resistive rating as the adjacent enclosure.

(3) the sidewalk elevator door at the street level shall be fastened in a closed position and shall be adequately welded shut. The underside of such door, shall be properly reinforced and supported by steel beams and columns so as to support the same loading as the sidewalk.

(4) Fireman access to the bottom of the hoistway (elevator pit) shall be provided through the door assembly of the pit door and shall meet the following requirements:

(i) if the machine room is located at or near the level of the bottom of the shaftway and is so located that access to the bottom of the shaftway is readily available through the machine room, the door to the machine room shall be kept closed with a substantial dead bolt locking device openable only with an elevator key.

(ii) if the machine room is located other than at or near the level of the bottom of the shaftway or the bottom of the shaftway is not readily accessible through the machine room, the lowermost door opening onto the shaftway shall be kept closed with a substantial dead bolt locking device openable only with an elevator key. A conspicuous sign of one (1) inch block letters with contrasting background permanently affixed to the door and shall read "HOISTWAY".

(iii) the key to the locking device required in subitems (i) and (ii) above shall be kept by the building superintendent and is readily available to the Commissioner or his representative and the fireman.

(c) The ventilation opening (smoke hole) in the flooring provided at the top of the hoistway immediately below the sheaves or at the level of the top of the machine room floor beams and the ventilation opening at the exterior portion of the machine room shall be maintained.

(d) All electric service to the elevator hoistway and machine room shall be disconnected outside the confines of the elevator hoistway and machine room.

(2) When a single elevator in multi-elevator shaftway is removed and permanently discontinued, a Building Notice application shall be filed, fees shall be charged for the last inspection and shall meet the following requirements for such discontinuance sealing of elevator hoistway shaft.

(a) If it is proposed to extend the floor at every story of the building it shall meet the requirements of subparagraph (a) of paragraph (1) of this subdivision, and the shaft enclosure is rearranged so that the remaining operating elevators are properly enclosed to maintain the integrity of the shaftway.

(b) If the hoistway shaft is to remain open-

(1) in addition to the requirements of subparagraph (a) of paragraph (1) of this subdivision except for floor construction, all door assemblies serving the discontinued elevator, opening onto masonry shaftway shall be completely removed and the open space so created shall be filled with the same material of equal thickness, or of similar material and of equivalent or better fire resistive rating as the adjacent masonry.

(2) all door assemblies serving the discontinued elevator, opening onto hoistway shaft originally enclosed with an open wire screen and subsequently enclosed with other than masonry units (i.e. metal lath and plaster or transite boards), shall remain. However, the door assemblies shall be fastened in a closed position and shall be adequately welded shut. The assembly shall, in addition, be enclosed in material of equivalent or better fire resistive rating as the adjacent enclosure.

§93 Adopt new rule 1000.4 to read as follows:

Rule 1000.4 Escalator Installation Placed Out of Service

1000.4a Escalators Are Not in Use. If these escalators are available for service, all required tests shall be regularly performed. These escalators are similar to those in service except that their power feed lines have been disconnected from the mainline disconnect switch and their entrances have been barricaded. A periodic inspection shall be made and fee charged. An elevator inspector shell note such requirements when found on a regular inspection.

1000.4b Escalators are Discontinued or Placed Out of Active Service.

In addition to the requirements of Rule 1000.4a, a Building Notice application shall be filed and the last inspection fee

charged. Thereafter, one (1) additional inspection per year shall be made to verify that the status is unchanged and fees shall be paid for such inspection. Before the installation is put back in service, it shall be subject to all of the required routine and periodic inspections and tests.

1000.4c Escalators are Removed and Permanently Discontinued. A Building Notice application shall be filed and fees charged for the last inspection. The escalator steps, newels, rails, all wire cables and other equipments of escalator and machinery shall be completely removed.

An opening created by the removal of the escalator, it shall be filled with new construction of the same or of similar construction as the existing adjacent floor and of equivalent or better fire restive rating.

§94 Adopt new rule 1000.5 to read as follows:

Rule 1000.5 Moving Walk Installation Placed Out of Service

1000.5a Moving Walks are Not in Use. If these moving walks are available for service, all required tests shall be regularly performed. These moving walks are similar to those in service except that their power feed lines have been disconnected from the mainline disconnect switch and their entrances have been barricaded. A periodic inspection shall be made and fees charged. An elevator inspector shall note such requirements on a regular inspection.

1000.5b Moving Walks are Discontinued or Placed Out of Active Service. These moving walks shall meet the requirements of Rule 1000.5a except for periodic inspection. In addition, a Building Notice application shall be filed and the last inspection fee charged. There after, one (1) additional inspection per year shall be made to verify that the status is unchanged and fees shall be paid for such inspection. Before the installation is placed back in service, it shall be subject to all of the required routine and periodic inspections and tests.

1000.5c Moving Walks are Removed and Permanently Discontinued. A Building Notice application shall be filed and fees charged for the last inspection. The moving walk treadways, newels, rails, all wire cables and other equipments of moving walk and machinery shall be completely removed.

An opening created by the removal of the moving walk shall be covered by new construction of the same or of similar construction as the existing adjacent floor and of equivalent or better fire resisting rating.

§95 Amend rule 1001.1 to read as follows:

Rule 1001.1 Inspection and Test Periods

The routine inspection and tests of passenger and freight electric elevators shall be made at intervals [not longer than 6 months] of five (5) times every two years, or as otherwise provided by the commissioner per Section 27-998(a) of article three of subchapter eighteen of such chapter. All references to Items are to Items in A17.2, Inspections' Manual for Electric Elevators.

NOTE {Rule 1001.1}: See Rule 1010.2 for private residence elevators.

§96 Amend rule 1002.1 to read as follows:

Rule 1002.1 Inspection and Test Periods In addition to the routine inspection and tests (Rules 1001.1 and 1001.2), the inspection and tests specified in Rule 1002.2 shall be performed at intervals not longer than [1] 2 years, and the inspections and tests specified in Rule 1002.3 shall be made at interval not longer than 5 years.

NOTE {Rule 1002.1}: See Rule 1010.2 for private residence elevators.

§97 Amend title of rule 1002.2 and add new paragraph to such rule to read as follows:

Rule 1002.2 [1] 2 Year Inspection and Test Requirements

Exception to 2 year inspection and test requirements of this rule shall be as specified in the following subdivisions.

§98 Amend subdivision a of such rule to read as follows:

1002.2a Oil Buffers. Car and counterweight buffers shall be tested at an interval of not longer than one (1) year as per Section 27-998(a) (2) of the Building Code to determine conformance with the applicable plunger return requirements (Rule 201.4e: Item 5.3.2).

§99 Amend paragraph 1 of subdivision b of such rule to read as follows:

(1) Inspection. All working parts of car and counterweight safeties shall be inspected at an interval of not longer than 1 year as per Section 27-998(a)(1) of the Building Code to determine that they conform to the applicable requirements and Section 1202 (Rules 205.10 and 205.11; Division 112).

§100 Amend subdivision c of such rule to read as follows:

1002.2c Governors. Governors shall be tested at an interval of not longer than one (1) year as per Section 27-998(a)(2) and shall be inspected and operated manually to determine that all parts, including those which impart the governor pull through tension to the governor rope, operate freely. Item 2.28.2(a). In addition to two (2) year inspection, the tag shall be inspected at an interval of not longer than one (1) year.

§101 Add new subdivision o to rule 1003.3 to read as follows:

(o) When controller is changed and mode of operation remains the same, the following tests shall be required:

(1) Full load operational test

(2) 125% test and pull switch at lowest landing after stop for five (5) minutes.

Definition of full load operational test:

(1) Top to bottom at contract speed.

(2) Contract load, stop level (± ½") at every stop up and down.

§102 Add new subdivision L to rule 1003.2 to read as follows:

1003.2L Brake. A test of the brake shall be made with 125% of load. When the car returns to the lowest landing, pull the main line switch while the car is being stopped to ensure the brake has set and holds the load.

§103 Amend rule 1004.1 to read as follows:

Rule 1004.1 Inspection and Test Periods

The routine inspection and tests of passenger and freight hydraulic elevators shall be made at intervals [not longer than 6 months] of five (5) times every two (2) years or as otherwise provided by the commissioner per Section 27-998(a) of article three of subchapter eighteen of such chapter. All references to Items are to Items in A17.2.2,

Inspectors' Manual for Hydraulic Elevators.
NOTE: {Rule 1004.1}: See Rule 1010.2 for private residence elevators.
§104 Amend rule 1005.1 to read as follows:
Rule 1005.1 Inspection and Test Periods
In addition to the routine inspections and tests (Rules 1004.1 and 1004.2), the inspections and tests specified in Rule 1005.2 shall be performed at intervals not longer than [1] 2 years, the inspections and tests specified in Rule 1005.3 shall be made at intervals not longer than 3 years, and the inspections and tests specified in Rule 1005.4 shall be made at intervals not longer than 5 years.
NOTE: See Rule 1010.2 for private residence elevators.
§105 Amend the title of rule 1005.2 to read as follows:
Rule 1005.2 [1] 2-Year Inspection and Test Requirements
§106 Add new subdivision d to rule 1005.4 to read as follows:
(d) Full load test will not be required. Pressure test shall be performed in accordance with Item 2.14.2 of ASME A17.2b-1996.
§107 Amend rule 1007.1 to read as follows:
Rule 1007.1 Inspections and Test Periods
Routine inspections and tests of escalators and moving walks shall be made at intervals not longer than 6 months for moving walks and at intervals of five times every two (2) years per Section 27-998(b) of article three of subchapter eighteen of such chapter. All references to Items are to Items in A17.2.3 Inspectors' Manual for Escalators and Moving Walks.
§108 Amend rule 1008.1 to read as follows:
Rule 1008.1 Inspection and Test Periods
In addition to the routine inspection and test (Rules 1007.1 and 1007.2), the inspection and tests specified in Rule 1008.2 shall be performed at intervals not longer than [1] 2 years.
§109 Amend the title of rule 1008.2 to read as follows:
Rule 1008.2 [1] 2-Year Inspection and Test
§110 Add new subdivisions, r, s and t to such rule to read as follows:
1008.2r Combplate Stop Switch.
1008.2s Test Report Form. All testing requirements for escalators required by this rule shall be reported on Form ELV3-Rev-1998 (2 year test for escalators) of the Department of Buildings.
1008.2t Test Tag. 2-year test tag for escalators and moving walks shall be affixed in the vicinity of the lower starting device for escalators and of the starting device and the entrance of the moving walks.
§111 Amend the first paragraph of rule 1010.2 to read as follows:
Rule 1010.2 Private Residence Elevators and Lifts
Private residence elevators and lifts [should be subject to the applicable routine and periodic inspections and tests, and] shall be subject to acceptance inspections and tests specified in Sections [1000 through 1006] 1003 and 1006. [Routine inspection should be performed at intervals not longer than 1 year.]
§112 Amend first paragraph of rule 1010.4 to read as follows:
Rule 1010.4 Dumbwaiters
Dumbwaiters shall be subject to the applicable [routine, periodic and] acceptance inspections and tests specified in Sections [1000 through 1006] 1003 and 1006. [Routine inspections shall be performed at intervals not longer than 1 year.]
§113 Add second paragraph to rule 1102.1 to read as follows:
The lap edges of passenger (A17.1 horizontal slide type) elevator door, including the lap edges of multi-section doors, shall not move from the wall or adjacent panel sufficiently to develop a separation of more than two (2) inches during the fire portion of the test and not more than two and seven-eighth (2 7/8) inches during or immediately following the hose stream test.
§114 Delete section 1104.
§115 Amend subdivision f of rule 1200.4 to read as follows:
1200.4f Labeled and Listed Devices. When a component in a labeled and listed device, including but not limited to interlocks (Rule 111.2), fire doors (Rule 110.15) [, and electrical equipment {Rules 210.4(b), 306.6.6(b),etc,}] is replaced, the replacement component shall be subject to the requirement of [B44.1/A17.5 and /or] the engineering type test in Part XI. When a component in a labeled and listed device of electrical equipment {Rules 210.4(b), 306.6(b), 508.4(b), 702.4(e)(2), etc.} is replaced, the replacement component shall be subject to the requirements of B44.1/ASME A17.5 and/or the engineering type test in Part XI.
§116 Delete subdivision b of rule 1200.5.
§117 Amend subdivision a of rule 1201.11 to read as follows:
1201.11a Interlocks. Where the alteration consists of the installation of hoistway door interlocks, the installation shall conform to the requirements of Rules 111.1, [111.3, 111.5, 111.6, 111.7, 111.9, 111.10, 111.11, 111.12] 111.2, 11.5, 111.6, 111.7, 111.10, and 208.8.
§118 Amend subdivision b of such rule 1 to read as follows:
1201.11b Mechanical Locks and Electric Contacts. Where the alteration consist of the installation of hoistway door combination mechanical locks and electric contacts, the installation shall conform to the requirements of Rules 111.1, [111.4, 111.5, 111.6, 111.7, 111.9, 111.10, 111.11, 111.12] 111.2, 111.3, 111.4, 111.5, 111.6, 111.7, 111.10, 111.12, and 208.8.
§119 Amend subdivision c of such rule to read as follows:
1201.11c Parking Devices. Where the alteration consists of the installation of elevator parking devices, the installation shall conform to the requirements of Rules [111.8, 111.9, 111.10, 111.11, 111.12] 111.5, 111.6, 111.7, 111.8, 111.10, and 208.8.
§120 Amend subdivision d of such rule to read as follows:
1201.11d Access Switches and Unlocking Devices. Where the alteration consists of the installation of hoistway access switches or hoistway door unlocking devices, the installation shall conform to the requirements of Rules [111.9, 111.10,111.11, 111.12] 111.5, 111.6, 111.7,

111.10, and 208.8.

§121 Add new rule 1201.13 to read as follows:

Rule 1201.13 Elevator Alteration in Commercial Buildings Being Converted to Residential Occupancy

All new and existing passenger or freight elevators, located in commercial buildings being converted into an interim multiple dwellings registered with the Loft Board in accordance with Article 7-c of the Multiple Dwelling Law are designated as service elevators and shall comply with Section 211 and Local Law 5 of 1073, Local Law 16 of 1984 and Local Law 17 of 1995 and all applicable revisions. The following items shall comply with this Rule:

(1) Freight Elevators. Existing freight elevators may be used to carry passengers when they have been altered to conform to this Rule.

(2) Machine Rooms. Existing machine rooms or machinery spaces including all access assemblies shall have a minimum fire resistance rating of 1-hour and shall be vented in conformance with the requirements of Rule 100.4.

(3) Location of Equipment and Electrical Wiring. Equipment in machine rooms shall be in conformance with the requirements of Rule 101.2.

(4) Structural Supports. At the machine room level and one story below the machine room, all new beams and columns supports shall be of structural steel. Structural supports of existing wood shall be subject to controlled inspection and shall be properly fire protected. These requirements shall also apply to elevator machine supports located in basements. Supports shall comply with the requirements of Rule 105.1.

(5) Pits. A pit shall conform to the requirements of Rule 106.1.

(6) Hoistway Doors. Hoistway doors, conforming to the requirements of Rule 110.1 shall be self-closing, either vertical or horizontal sliding or swing-type with at least 1-hour fire resistance rating.

(7) Locations of Car Door. The maximum distance between the hoistway face of the car door and hoistway face of the hoistway door shall not exceed 5½ inches and shall conform to the requirements of Rule 204.4e(2).

(8) Vision panels. Vision panels and protective grills on manually operated door shall conform to the requirements of Rules 204.2e and 204.5e. Grills shall be provided on all existing vision panels.

(9) Interlocks and Electrical Contacts. Hoistway doors shall be provided with accepted interlocks and electrical contacts conforming to the requirements of Rule 111.1.

(10) Elevator Parking Devices. When required by Rule 111.8a elevator parking devices shall be provided conforming to the requirements of Rule 111.8b.

(11) Guide Rails. Elevator car and counterweight guide rails conforming to the requirements of Rule 200.1 shall be provided.

(12) Buffers. Buffers conforming to the requirements of Rule 201.1 shall be provided.

(13) Car Enclosures. Materials of elevator car enclosures shall conform to the requirements of Rule 204.2a. Wood platforms shall conform to the requirements of Rule 203.6d.

(14) Top Emergency Exit. Elevators shall be equipped with a car enclosure, which shall have a top emergency exit conforming to the requirements of Rule 204.1e.

(15) Car Safeties and Governor. Cars shall be provided with a car safety conforming to the requirements of Rule 205.1. Governor rope shall be either of iron or steel and shall meet the requirements of Section 206.

(16) Rated Load. The rated load in pounds for a service car shall be calculated based on inside net platform area conforming to the requirements of the passenger elevator, Rule 207.1.

(17) Terminal Stopping Devices. Terminal stopping devices conforming to the requirements of Section 209 shall be provided.

(18) Operating Devices. Operating devices conforming to the requirements of Rule 210.1 shall be provided.

(19) Ropes. Elevator cars shall be suspended by iron or steel wire ropes conforming to the requirements of Rule 212.1.

§122 Amend paragraph 2 of subdivision b of rule 1202.5 to read as follows:

(2) Where an alteration is made to a side emergency exit, or where a new one is installed, it shall conform to the requirements of Rule 2041j. Side emergency exit may be eliminated but corresponding elevator side emergency exit must also be eliminated.

§123 Amend paragraphs 2, 3, and 4 of subdivision c of such rules to read as follows:

(2) Where an existing enclosure other than specified in Rule 1202.5(c)(1) is retained and new material is installed, the new material and adhesive shall conform to the following requirements, based on the tests conducted in accordance with the requirement of ASTM E 84, UL 723 or NFPA 255:

(a) Flame spread rating of 0 to 25

(b) Smoke development of 0 to [450] 100.

(c) Toxicity shall meet the requirements of Section 27-348(e) of the Building Code.

If the material or combination of materials installed exceeds ¼ in. (6.4 mm) in thickness, the car enclosure shall conform to the requirements of Rule 204.2a(1).

(3) [Napped, tufted, woven, looped, and similar materials shall conform to the requirements of Rules 204.2a(1) and (2) or Rule 1202.5(c)(2) and Sections 1104 and 1106. Adhesive shall conform to the requirements of Rule 1202.5(c)(2).] Materials for insulating, sound deadening or decorative purposes may be used for lining enclosures if firmly bonded flat to the enclosure without intervening air spaces. Such materials shall not be padded or tufted, shall be Class A interior finish pursuant to Section 27-348(b) of the Building Code and shall have a smoke development rating of 0 to 25 pursuant to Section 27-348(d) of the Building Code.

(4) Floor covering, underlayment, and its adhesive shall [have a critical radiant flux of not less than 0.45 W/cm² as measured by ASTM E 648] conform to the requirements of Rule 204.2(a)(4).

§124 Amend subdivision b of rule 1202.10 to read as follows:
1202.10[b]c Increase in Rated Speed
§125 Add new subdivision b to such rule to read as follows:
1202. 10b Decrease in Travel. Where an alteration involves a decrease in travel which eliminates top terminal floor landing, it shall, in addition to requirements of Rule 1202.10a meet the requirements of any one of the following:
(1)(a) If the wall is erected in front of elevator entrance openings, the unused shaftway doors shall be sealed with through-bolts. Electromechanical safety interlocks wired into safety circuit of each elevator shall remain.
(b) New slow-down, normal and final limits for the new top terminal floor landing shall be installed.
(c) Access provisions for the original top floor landing from the car operating panels shall be removed.
(d) The original final limits shall remain operable at the top of the hoistway for safety.
(e) Access to the original top terminal landing shall be provided for maintenance and servicing of hung secondary equipment and inspection of wire rope cables per ASME A17.2 Standards.
(f) Elevator car enclosures shall be equipped with side and top emergency exits.
(2)(a) If the wall is erected in front of elevator entrance openings, a suitable access shall be provided for emergency situations.
(b) Inspection control shall allow qualified personnel to by-pass the new limits on speed for maintenance and inspection.
(c) The new top terminal final limit switch shall be design for manual resetting.
(d) The system shall be capable of a double electrical protection with the same run-by (36" for oil hydraulic buffers) clearance to stop mechanically using the counterweight buffer when an over-speed malfunction occurs.
(e) The original top terminal landing shall be available for maintenance and inspection.
(f) The safety interlock must be used for the corridor entrance doors in circuit with an access key provision.
§126 Amend paragraph 1 of subdivision d of rule 1202.12 to read as follows:
(1) When a controller is installed in place of an existing controller, without any change in the type of operation or control, the new controller shall conform to the requirement of Rules 210.4 and 210.9. The installation shall also conform to the requirements of Rules 210.6, 210.7, 210.8, 211.3 through [211.8] 211.9, and Section 209.
§127 Amend the last paragraph of rule 1202.13 to read as follows:
Where an alteration is made to firefighters' service operation, the installation shall conform to the requirements of Rules 211.3 through [211.8] 211.9.
§128 Add new subdivision e to rule 1202 .14 to read as follows:
1202.14e Wedge Clamp Shackles. Where an alteration is made to provide wedge clamp shackles, the installation shall be filed by the Professional Engineer or the Registered Architect and shall conform to the requirements of Rule 212.9e. In addition, the installation for retrofits, cable repair replacements, etc., shall provide installation of apparatus on both sides of cable ends (car and counterweight) and submit the design of cable hitch plates, clearances between shackles, staggering of shackles for entrance, use of tensioning, isolation bushing and other hardware used in conjunction with the adjustment.
§129 Amend paragraph 3 of subdivision h of rule 1203.8 to read as follows:
Where an alteration is made to firefighters' service operation, the installation shall conform to the requirements of Rules 211.3 through [211.8] 211.9.
§130 Amend and re-designate paragraph 3 as 5 and add new paragraphs 3 and 4 to subdivision a of rule 1206.3 to read as follows:
(3) for counterweight cables of drum machines re-shackling at the counterweight ends, 4 years.
(4) In addition to foregoing requirements, rope fastenings shall be renewed when an inspection reveals any evidence of failure at the shackle regardless of the period of time since last re-shackling.
[(3)] (5) Where auxiliary rope-fastening devices conforming to the requirements of Rule 212.10 or where car hoist ropes with an additional MEA accepted type emergency clamping devices are installed, refastening at the period specified is not required provided that, where such devices are installed, all hoisting ropes shall be refastened on the failure or indication of failure of any rope fastening.
§131 Amend first paragraph of sub division c of such rule to read as follows:
1206.3c Tags. A metal tag (see Appendix K) shall be securely attached to one of the wire rope fastenings after each resocketing or changing to other types of fastenings, and shall bear the following information:
§132 Amend paragraph 6 of subdivision b of rule 1206.5 to read as follows:
(6) Flexible hose and fitting assemblies shall be replaced by the manufacturers' date indicated on the existing equipment but not less than six (6) years. Hose assemblies that do not indicate a replacement date shall be replaced. Replacement shall conform to requirements of Rule 303.3c (1)(e).
§133 Amend the first paragraph of rule 1207.1 to read as follows:
Rule 1207.1 General Requirements
Any alteration to an escalator shall comply with the requirements of Rules 805.1, 805.2, 805.3a, 805.3e, 805.3f, 805.3n, 805.3q, 805.7, 1200.1, and 1200.2
§134 Amend rule 1207.8 to read as follows:
Rule 1207.8 Combplates
Any alteration of the combplates shall require conformance with the requirements of Rules 805.3n and 805.3q.
§135 Amend the first sentence of the first paragraph of rule 1208.1 to read as follows:
Any alteration to a moving walk shall comply with requirements of Rules 905.2, 905.3a, 905.3e, 905.3f, 905.3k, 905.3l, 905.6, 906.2, 1200.1, and 1200.2.

§136 Amend subdivision a of rule 2000.7 to read as follows:

2000.7a Limitation of Load, Speed, and Travel. The rated load shall be not less than 450 lb (204 kg) or more than 750 lb (340 kg). The lift shall be capable of sustaining and lowering a load as specified in Rule 207.1. The rated speed shall not exceed 30 ft/min (0.15m/s). The travel shall not exceed [12ft (3658mm) nor] 25ft (7621mm) and shall not penetrate [a] more than one floor. Platforms with an area greater than 15 ft² (1.39 m²) shall have a rated load of not less than 750 lb (340 kg).

§137 Amend subdivision a of rule 2100.7 to read as follows:

2100.7a Limitation of Load, Speed, and Travel. The rated load shall be not less than 450 lb (204 kg) or more than [700] 750 lb (340 kg). Platforms with an area greater than 15 ft² (1.39 m²) shall have a rated load of not less than [700] 750 lb (340 kg).The lift shall be capable of sustaining and lowering a load as specified in Rule 207.1. The rated speed shall not exceed 30 ft/min (0.15 m/s). The travel shall not exceed [10 ft (3048 mm) nor] 25 ft (7621 mm) and shall not penetrate [a] more than one floor.

§138 Amend the first paragraph of Rule 2500.13 to read as follows:

When provided, power operation, power opening, and power closing of hoistway doors and car doors [and gates] shall conform to the requirements of Section 112, except as modified by this Rule.

§139 Amend subdivision a of such rule to read as follows:

(a) Rule 112.1(b). Vertically sliding doors are not permitted. Power operated swing hoistway doors shall not be permitted with power operated horizontal operated car doors.

§140 Amend paragraph 2 of subdivision a of rule 2501.8 to read as follows:

(2) The inside net platform area shall not exceed 18 ft² (1.67 m²) but not less than 4'X4' with a minimum 32 inches clear door opening. The C/O/P shall be on the strike wall.

§141 Delete Appendix G of ANSI/ASME A17.1-1996 in its entirety.

§142 Delete Appendix H of such standard and re-adopt it to read as follows:

APPENDIX H

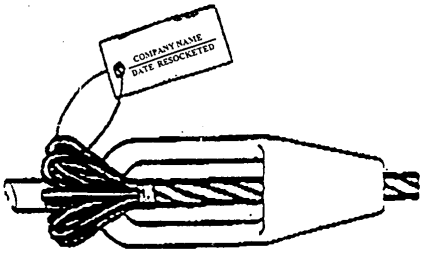
SIGNS AT ELEVATOR LANDINGS

Signs at elevator landings shall comply with the requirements of Section 27-391 of article nine of subchapter six of chapter 1 of title 27 of the administrative code.

§143 Add new appendix k to such standard.

APPENDIX K0

TAGS



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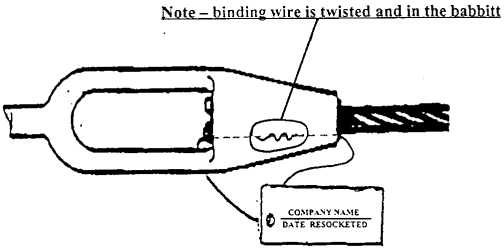

APPROVED METHOD

† DOB 1-16-03; 11-91 BCR

***REFERENCE STANDARD RS 18-3**

ANSI B153.1-1981 Safety Requirements for the Construction, Care and Use of Automobile Lifts.

FS 00-L-360D-1987 Motor Vehicle Lifts.

****DOB 1-16-03; 11-91 BCR; 678-85 BCR; 385-82 BCR***

*****REFERENCE STANDARD RS 18-4**

ANSI/ASME MH 14.1-1987 Loading Dock Levelers and Dockboards.

Modifications.-The provisions of ANSI/ASME MH 14.1-1987 shall be subject to the following modifications: The Section numbers are from that standard:

2.1.8 Lighting.-The entire operating area shall be illuminated to provide a distributed intensity of at least five (5) foot candles over the area of operating floor and platforms.

******11-91 BCR; 1156-80 BCR***

**** REFERENCE STANDARD RS 18-5**

ANSI/ASME B20.1- 1987 Safety Standards for Conveyors and Related Equipment.

Modifications.- The provisions of ANSI/ASME B20.1-1987 shall be subject to the following modifications. The Section numbers are from that standard:

6.21 Vertical Reciprocating Conveyers

6.21.2 Guarding

(e) Controls shall be installed or located so they cannot be actuated by a person on the carrier. Controls shall be of constant pressure type.

(f) Non-operating sides of the conveyer to be guarded to a minimum height of 7 ft. If guarding is fence or expanded metal the mesh must be capable of rejecting a 2" diameter ball. The guarding is required at both levels where the unit penetrates a non-fire rated floor.

6.21.3 Shaft enclosure

Where a vertical conveyer (material lift) penetrates a fire-rated floor a two (2) hour rated enclosure with one and a half (1½) hour rated self-closing fire doors shall be required.

6.21.4 Gates

(a) All lower and intermediate level manual loading and unloading points shall have gates with a minimum of six (6) ft in height. Each gate is equipped with a lock and electric contact to prevent the gates from being opened until the conveyer is at that level.

(b) Upper level gates must be with a minimum of six (6) ft in height and shall be equipped with a lock and electric contact.

6.21.5 Platform Side guards

Platform side guards and gate with electric contact shall be provided with a minimum of six (6) ft in height.

6.21.6 Limitation of Load

The capacity shall be not less than 50 lbs. per sq. ft with a maximum capacity of 2500 lbs.

6.21.7 Speed

The rated speed shall not exceed 25 ft/min (0.15 m/s).

6.21.8 Travel

The maximum travel shall not exceed 25 ft.

6.21.9 Floor Penetration

Not more than one floor penetration shall be permitted.

SECTION 7 OPENING PROTECTION

[7.01] 7.1 Passage through openings

[7.01.1] 7.1.1 Whenever a conveyer or other material-handling device is designed to pass through floors, ceilings, partitions or walls, the plans and specifications shall give the necessary details of the opening protection with respect to location, structural strength, and fire resistance in accordance with the requirements of the Building Code.

Section 5. This revision shall take effect immediately.

[ ] Matter shown in brackets to be deleted.

___ Matter shown underlined to be added.

{ } Matter shown in brackets replaces brackets [ ] of ANSI/ASME A17.1-1996 and ANSI/ASME 17.1A-1997, so that it is not understood as deletion.

Designations used in this revision is as follows:

Example is taken from PART X	
PART	X
SECTION	SECTION 1000
RULE	RULE 1000.3
SUBDIVISION	1000.3(b)
PARAGRAPH	1000.3(b)(1)

SUBPARAGRAPH 1000.3(b)(1)(b)
ITEM 1000.3(b)(1)(b)(1)
SUBITEM 1000.3(b)(1)(b)(1)(i)

Wherever "of such rule," "of such subdivision," etc., is used in any §#, they refer to "rule," "subdivision," etc. of the preceding §#.

***** DOB 1-16-03;11-91 BCR; 1156-80 BCR***

REFERENCE STANDARD RS 18-6
CONSOLE OR STAGE LIFTS

1. Platform or Car Construction.-

(a) Suspension or supporting frames of all console or stage lifts shall be constructed of structural steel, wrought iron shapes, or of any noncombustible material whose strength shall satisfy the loads and stresses requirements of the building code.

(b) The minimum factor of safety of all materials used in car platforms and slings shall conform to the requirements of reference standard RS 18-1.

2. Cables.-Hoisting cables shall have a safety factor conforming to the requirements of reference standard RS 18-1.

3 Hoisting.-Platforms may be operated by cables, plunger, or screw type equipment, and shall maintain a minimum factor of safety of all materials used in operating the platform conforming to the requirements of reference standard RS 18-1.

4. Control.-

(a) Up and down control shall be provided near the lift in a location where it can be easily operated and where the operator will have an unobstructed view of the lift.

(b) An emergency stop switch shall be provided within easy reach of the operator, and when operated, it shall cut off power from the hoisting equipment.

5. Entrance.-When the entrance to such console or stage lift is at one or more points below the stage level, such entrance or entrances shall be provided with a gate or door with mechanical lock and electric contact, or the platform shall be provided with an apron made of sheet steel or plywood covered with 26 gage sheet steel, at the entrance side or sides extending from the platform to below the lowest landing with the platform at its maximum raised position. If the platform rises above the stage level, all unguarded sides shall be provided with aprons extending from the platform to below the stage level.

***REFERENCE STANDARD RS 18-7**

ANSI A 10.-41981-Safety requirements for Personnel Hoists.

Modifications.-The provisions of ANSI A 10.4-1981 shall be subject to the following modifications:

Add the following sub-section to 25.10.2:

25.10.2.1 Thereafter the rack and pinion type personnel hoist shall be reinspected every ninety (90) days. The inspection shall include a full load test of the safety device.

Add the following sections to govern the installation, jumping and dismantling of rack and pinion type personnel hoists to Rule 26, Inspections and Tests of Personnel Hoists:

26.1.1.1 Installations of rack and pinion type personnel hoists shall be approved by the Elevator Division. Both a construction application and an elevator application shall be filed by a licensed professional engineer or registered architect. The drawings shall be sealed.

26.1.1.2 The Elevator Division shall be notified at least three (3) days before the inspection date prior to each "cathead" raise, when the travel of the hoist is increased. This inspection shall include the examination of the normal, terminal and final limit stopping devices. All parts of the equipment shall be inspected; and tested to determine that they are in safe operating condition where found necessary by the Elevator Division. A full load test may not be required at this time by the Elevator Division. If an Elevator Division Inspector cannot be present at the time the required tests are made, the qualified private elevator inspectional agency conducting the tests shall:

(1) Submit a statement upon a department form to the Elevator Division certifying the tests which have been conducted and the results thereof within 24 hours of such tests.

(2) Attach a tag showing the date of the tests and the name of the person and/or agency conducting it.

26.1.3.1 Acceptance inspections of new installations shall be made prior to use by the contractor. The Elevator Division shall be notified at least three (3) days before the required acceptance inspection and test. A full rated load test shall be made. All shaftway protection doors, ramps, guards and required safety devices shall be installed and in place. The contractor may apply upon successful completion of the inspection and test for a ninety (90) day temporary elevator certificate (B Form 256).

26.2.1.1.1 All rack and pinion type safeties shall be stamped with their expiration date by the manufacturer and shall be replaced when such date is expired which shall not exceed a period of three (3) years.

26.7 Materials Handling Plan. A materials handling plan shall be provided if a potentially hazardous condition exists because of simultaneous operation of the rack and pinion personnel hoist and either a crane and/or derrick.

26.7.1 The materials handling plan shall be acceptable to Site Safety Coordinator and approved by the Department.

26.7.2 The hoist contractor and the safety coordinator shall be jointly responsible for the enforcement of the provisions of the materials handling plan.

26.8 Dismantling and Removal. The Elevator Division shall be notified on department forms when a rack and pinion type hoist is dismantled and removed.

26.8.1 The notification shall include the elevator application number, the street address locations listed on the construction application, the block and lots and the date of removal.

26.9 Field Inspection. A department field inspection will be scheduled by the Elevator Division upon receipt of proper notification to ascertain the actual job-site conditions and to sign-off the forms documenting the same.

Add the following to Rule 30:
Electrical work shall conform to the New York City Electrical Code.
Welding shall conform to the applicable portions of the Administrative (Building) Code.
678-85BCR

REFERENCE STANDARD RS 18-8
POWER OPERATED SCAFFOLDS

1. Construction Requirements for the Scaffold.-

(a) The scaffold shall be constructed of steel conforming to reference standard RS 18-1, rules 203.6(a), (b), (c), and 203.7, or of equivalent metals.
(b) A railing with an intermediate horizontal rail, shall be provided on all four sides of a scaffold. The railing shall be at least 36 in. high on the building side and at least 42 in. high on the other three sides. Design of the guard rail at or near both ends of the scaffold shall include provisions for mounting roller guides.
(c) The spaces between the top guard rails and the scaffold toe board on the outside railing and the end railings shall be filled with metallic mesh, expanded metal, or similar material that shall reject a ball 1 in. in diameter and that shall be capable of withstanding a horizontal force of 75 lbs. at any point with a maximum deflection of 1 in. The railing on the building side shall have mesh below the intermediate rail only.
(d) A solid metal toe board, at least 4 in. high, shall be provided at the floor on all four sides. The bottom of the toe board shall be flush with floor. The toe board shall be capable of withstanding a horizontal force of 75 lbs. at any point with a maximum deflection of 1 in.
(e) A hinged access gate shall be provided in the scaffold railing on the building side. The gate shall be of construction similar to the railing, and the open spaces in the gate shall be filled with material as prescribed in (c) above. With the gate open, the clear width of access shall be at least 18 in.
(f) The gate shall be provided with an interlock that will prevent power operation of the scaffold when the gate is in the open position.
(g) The scaffold dimension parallel with building shall be designated the "length," and shall be measured between the inside surface of the end railings. The dimension perpendicular to the building wall shall be designated the "width," and shall be measured between the inside railing surfaces on the long sides of scaffold. The width of a scaffold shall be at least 28 in. When the building side of the scaffold is of irregular shape, following the contour of a building wall, scaffold "width" shall be measured at the tightest point of the irregularity.
(h) The rated load of a scaffold shall be 50 plf. The maximum number of occupants permitted simultaneously on a scaffold shall be equal to the inside clear length divided by 5.
(i) The maximum permissible vertical scaffold speed shall be 50 fpm.
(j) The scaffold floor shall have an anti-slip surface with air passage interstices, which must reject a 1/2 in. diameter ball, and shall be designed for a uniform live load of 75 psf. The floor and its supports and bracings shall be able to withstand a concentrated load of 300 lbs. on any random 4 sq. in. of floor area with a maximum deflection of 1/1666 of the span.
(k) A manufacturer's rating plate shall be mounted conspicuously near the access gate on the scaffold. The plate shall be made of non-corrosive material with letters at least 1/4 in. high etched, stamped, or cast on the surface. It shall state the rated load, the maximum number of occupants, and the manufacturer's name and model number.

2. Construction and Design Requirements for Roof Carriage.-

(a) A movable roof carriage and track system shall be provided to move the scaffold in a horizontal direction. The maximum permissible horizontal speed of the roof carriage shall be 50 fpm.
(b) The roof carriage shall be constructed of steel conforming to reference standard RS 18-1, rules 203.6(a), (b),and (c), and 207.7, or of equivalent metals, welded, riveted, or bolted together. The roof carriage construction shall be capable of supporting the scaffold and its rated load plus impact loads imposed by motor stall torque and wind forces with a safety factor conforming to reference standard RS 18-1, rules 203.10 and 203.11.
(c) The design of the roof carriage, track, and track support system shall include means to accurately stop and position the roof carriage at predetermined locations that correspond to the locations of the vertical guides on the building wall.
(d) When the roof track system is not a continuous loop and terminal track ends exist, mechanical end barricades shall be provided together with terminal limit switches.
(e) In the design of roof components of buildings where suspended scaffolds and movable roof carriages are to be used, all forces transmitted to the building structure by such equipment shall be added to normal design loads.

3. Stability of Roof Carriage.-The roof carriage and its support system shall be designed and constructed for structural adequacy and required stability to resist overturning moments occurring with a scaffold carrying its full rated load.
(a) Windforce: 30 psf.
(b) All imposing forces that are caused by moving loads shall be doubled for impact.
(c) If the roof carriage is of open structure type, the effect of windforce or interior components shall be considered as the sum of all framing components areas plus mounted equipment areas projected on a plane perpendicular to the wind direction. No component shall be considered as shielding another component along the wind direction if the separating distance is more than 4 times the smallest

dimension of the windward component.

4. Access for Inspection and Maintenance.-Safe and convenient means of access between roof and roof carriage and between roof carriage and scaffold shall be provided, conforming where applicable to reference standard RS 18-1, rule 101.3.
(a) On installations where movable roof carriages are used, the means of access shall be a permanent part of the carriage design and shall be constructed so as to permit stepping on or off the carriage to or from the roof at any carriage position.
(b) Means of access between a movable roof carriage and its scaffold shall be possible only with the scaffold raised to its top position. Electrical interlocks in the carriage drive motor circuit, and actuated by the scaffold, shall prevent carriage movements until scaffold is in access position.

5. Vertical Guiding of Power Operated Scaffolds.-
(a) Power operated scaffolds shall be guided up and down the face (facade) of a building or structure.
(b) The guiding means shall consist of roller guide shoes engaging vertical guide rails securely attached to the structural members.
(c) Each vertical guide shall be engaged by an upper and a lower roller guide shoe securely attached to the scaffold and its suspension frame. Roller guide shoes shall be spaced at least 48 in. apart vertically. Where the platform is suspended at two points at each end, the vertical guides may be engaged by one guide shoe only.
(d) The two ends of the scaffold shall be supported and hoisted or lowered simultaneously, and means shall be provided to maintain the scaffold approximately at level position at all times to prevent the roller guide shoes from binding on the vertical guides. Out-of-level slope shall not exceed 1/4 in. in 12 in.
(e) Materials for vertical guides, suspension frame, and fastenings shall conform to applicable portions of reference standard RS 18-1, section 200.

6. Construction and Design Requirements for Hoist Machines.-
(a) A hoist machine, whether mounted on the scaffold or the roof carriage, shall be designed and constructed to maintain its component parts in correct alignment to effectively transmit the imposed drum load into the supporting structure.
(b) Wire ropes shall lead from the drums through suitable fairleads to suspension points when the hoist machine is mounted on the scaffold. Wire ropes shall lead from the drums over suitable deflecting sheaves mounted on outriggers from the roof carriage when the hoist machine is located in the roof car.
(c) Chains, clutches, or friction gearing belts shall not be used to connect the drive motor to the winding drum. It shall be necessary to power drive the drive machine to either raise or lower the scaffold.
(d) Drive motors shall meet the requirements of the electrical code of the city of New York and shall:
(1) Lift the scaffold with 125 percent of the rated load at the rated speed with maximum temperature rise of 50 degrees C. per hr.
(2) Provide dynamic braking.
(3) Be of weatherproof construction with the motor shaft connected to the input shaft of the speed reducer through a coupling capable of transmitting the motor stall torque.
(e) Guards.-All moving, power transmitting, and interacting components of the drive machines shall be effectively guarded to conform to applicable portions of the requirements of rule 19 of the industrial code of the state of New York.
(f) Brakes.-Each hoist machine shall be provided with at least two friction brakes applied by a spring or springs and released electrically.
(1) Each brake shall be able to stop and hold the dead weight of the scaffold and 125 percent of the rated load.
(2) The drum brake shall be adjusted to apply not later than 2 seconds after the drive motor brake at every stopping operation.
(3) At least one brake shall be located at, and applied directly to, the winding drum or an equal strength extension of it. This brake shall have the additional function of reacting to a 40 percent over-speed actuated by an inertia device or a speed governor, either of which must be reset manually.
(4) The second brake shall be located at, and applied on either side of the motor.
(5) All parts of the brakes shall be readily accessible for inspection and cleaning.
(g) Gearing.-Hoist machines shall be provided with speed reducers between the drive motor and the rope drum. Such speed reducers shall be of the meshing gear type, worm and worm gear type, spur gears type, bevel gears type, or a combination of these types. The speed reducer shall be fully enclosed, adequately lubricated, and sealed to prevent leakage.
(1) Such speed reducers shall conform to the requirements of the American Gear Manufacturers Association as listed in Reference Standard RS 18-1, Part XVI.
(2) Material used for gears and shafts in speed reducers shall conform to reference standard RS 18-1, Section 208.
1156-80 BCR
(3) The gearbox shall be provided with oil level indicators and removable cover plates or plugs to permit visual inspection of the full width of the faces of the gear teeth.
(4) A data plate of a material resistant to weather and other corrosive agents shall be mounted on the gearbox, and shall bear the following information etched or stamped in 1/8 in. high letters:
Mechanical horsepower.....
Input speed.....R.P.M.
Output speed.....R.P.M.
Service factor.....
Type of lubricant.....
Quantity of lubricant.....Gallons
(h) Drums.-Drums for winding up suspension ropes shall have grooves or contact surfaces capable of withstanding the imposed rope pressure without deformation.

(1) The pitch diameter of the drum shall be at least 40 times the diameter of the rope wound on it.
(2) When grooved drums are used and single or multiple layers of rope are wound on the drum, the groove spacing or distance from centerline-to-centerline of adjacent grooves shall be at least 1/16 in. plus the rope diameter.
(3) When a drum without grooves is used and single or multiple rope laying is employed, a level winding device shall be provided to maintain the rope in close wound, parallel lays.

7. Suspension Means and Their Attachment.-Scaffolds shall be suspended by steel wire ropes, with at least one rope supporting the scaffold at, or near, each end. When winding drums are located at the top of travel, the suspension rope fastenings shall be attached to the scaffold; when winding drums are located on the scaffold, the suspension rope fastenings shall be attached to supports at the top of travel; and when a hoist machine with a continuously rotating traction sheave is used at each end of the scaffold, the single suspension rope shall have at least 4 turns on the sheave for minimum lifting effect, and the rope length shall be equal to the total scaffold travel plus 8 ft. For each suspension rope, an adjacent safety suspension rope shall be provided. The safety suspension rope shall normally run free through a clamping device, that is part of the machine, and the clamping device shall be arranged to automatically grasp and hold the safety rope upon failure of the hoist rope.
(a) Only steel wire ropes with fiber cores, having the commercial classification "elevator wire rope" and of minimum grade "improved plow steel" shall be used for the suspension of scaffolds.
(b) Rope data tag information shall conform to the requirement of reference standard RS 18-1, rule 212.2b.
(c) The number of suspension ropes used, the diameter of the ropes, and the factor of safety shall conform to requirements of reference standard RS 18-1, rule 212.3.
(d) The minimum rope diameter shall be 5/16 in.
(e) Securing of wire rope to winding drums shall conform to requirements of reference standard RS 18-1, rule 212.6.
(f) At least 3 turns of rope shall remain on the winding drum when the scaffold is at the bottom of travel.
(g) Suspension wire ropes shall not be lengthened or repaired by splicing.
(h) Suspension wire rope fastenings at free ends shall conform to the requirements of reference standard RS 18-1, rules 212.9(a), (b), (c), (d), (e), and (f).
(i) Suspension ropes shall be provided with a rust-resistive coating.
(j) Reverse bends in the roping arrangement should be avoided. More than two reverse bends in each rope shall be prohibited.
(k) Means shall be provided to stabilize the suspension ropes to prevent sway and abrasion and, in all cases, such means shall be provided for every 300 ft. of scaffold travel**.**

8. Operating Devices and Control Equipment.-
(a) All electrical operating devices shall be of the constant pressure or dead man type with weather proof enclosure. To prevent unauthorized use, the constant pressure device shall be key operated or protected by a padlock cover.
(b) All electrical equipment and wiring shall conform to the requirements of the electrical code of the city of New York.
(c) The normal operating devices for the vertical movement of the scaffold shall be located on the scaffold and shall be operable only when all electrical protective devices and interlocks on the scaffold are in position for normal service.
(d) The operating device of a power operated roof carriage for horizontal traversing shall be located on the roof carriage. This operating device shall be connected so that it will not be operable until the scaffold is raised to its uppermost position of travel and is disengaged from the building face or guiding rails on the building face and all protective devices and interlocks, on both the roof carriage or scaffold mounted hoist machine, are in position for traversing.

9. Traveling Cable.-
(a) Conductors for control, power, communication, signal, and ground may be run in a single traveling cable, provided that the cable conforms to the requirements of rule B30-166.0(i) of the electrical code of the city of New York.
(b) Traveling cables exceeding 100 ft. in length shall comply with rule B30-69.0 of the electrical code of the city of New York.
(c) The traveling cable shall be provided with a tensioning device to prevent uncontrolled cable sway, to protect the cable against abrasion, and to automatically prevent overtensioning of the cable. The tensioning device and cable drum shall be mounted in a weatherproof housing.

10. Electrical Protective Devices and Interlocks.-
(a) An overtensioning or tightrope device shall be connected into the drive motor circuit in a manner that will cause it to react to an overload and disconnect electric power to prevent upward pull on ropes if the scaffold becomes wedged in its tracks or is otherwise impeded while being raised.
(b) A slack rope device shall be provided that will react to a slackening of rope tension and disconnect electric power from drive motor to prevent the drum from overhauling the suspension rope if scaffold's downward motion is interrupted.
(c) Limit switches shall be provided at the top and bottom terminals of scaffold travel and shall be connected into the control circuits of the drive motors and actuated by cams at both ends of the scaffold and the roof carriage. Cam engagement of a limit switch at any travel terminal shall remove electric power from the motor circuit, and shall apply the brake to stop the scaffold or roof carriage.
(d) Hoist machine winding drums shall be provided with stop motion limit switches of the traveling nut type or equivalent. Such stop motion limit switches shall be connected to the drum shaft and set to open the operating circuit of the motors simultaneously with the cam operated

final terminal travel limit switches.
(e) All electrical mounting boxes, conduits, piping, and junction boxes, and the controller frame, hoist machinery frame, roof carriage track system, and scaffold shall have a ground connection through a ground wire in the scaffold traveling cable and by a third rail contact or cable with a tensioning device for the roof carriage.

11. Power Supply System.-Electrical equipment and wiring for the power supply system shall conform to the applicable requirements of the electrical code of the city of New York.

12. Emergency Communication with Men on Scaffold.- Communication equipment shall be provided for each power operated scaffold to facilitate rescue operations in an emergency and shall consist of either:
(a) A telephone instrument mounted on the scaffold and connected through wires in the traveling cable to a manned instrument in the building and, in addition, a battery or hand operated air horn or other signalling device not requiring electricity to operate.
(b) A two-way radio telephone system with the receiving instrument in the building constantly manned during the operation of the scaffold and in addition, a battery or hand operated air born or other signalling device not requiring electricity to operate.

13. Special Maintenance.-
(a) Suspension ropes shall be examined, lubricated, and shackled or reshackled to conform to ANSI A17.2-1979
(b) Control mechanisms, switch panels, relay panels, and similar electrical operating equipment shall be examined and maintained to conform to ANSI A17.2-1979
(c) A continuous record of modifications and changes of equipment shall be kept on the premises for inspection and review by the commissioner.
(d) A complete and continuous record of operations shall be maintained, in which shall be recorded, regular maintenance procedures, and malfunctions, repairs, and emergencies.
1156-80 BCR

****REFERENCE STANDARD RS 18-9**
ANSI/ASME A90.1 1985-Safety Standards for Belt Manlifts.
*****Local Law 65-1969; 11-91BCR; 1156-80BCR***

*****REFERENCE STANDARD RS 18-10 AMUSEMENT DEVICES**
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TEXT

PART I GENERAL PROVISIONS

*__1.0 PURPOSE, INTENT AND GENERAL REQUIREMENTS__. The purpose of this Reference Standard is to supplement the provisions of Subchapter 18 of Chapter 1, Title 27 of the Administrative Code of the City of New York "(Code)," entitled Elevators and Conveyors pertaining to the inspectional and test requirements for amusement devices and to establish the minimum safety requirements for, and control of the design, construction, installation, alteration, maintenance and operation.

***2.0 SCOPE AND APPLICATION**. These Reference Standards shall be applicable to all amusement devices operated within the City of New York whether located on a permanent, temporary, or mobile foundation. See Section 643 of the New York City Charter.

2.1 This Standard shall not apply to:

2.1.1 Any single passenger manually, mechanically or electrically operated, coin-operated device which is customarily placed, singly or in groups, in a public location and which does not normally require the supervision or services of an operator; and

2.1.2 Locomotives weighing more than seven tons, operating on track the length of which is O mile or greater, the gage of which is three feet or greater, and the weight is at 60 pounds per yard; and

2.1.3 Mobile type devices, self-contained and mounted on a motor vehicle or trailer not requiring further assembly or support, shall not be subject to this standard.

***3.0 DEFINITIONS.** These definitions are in addition to those set forth in the Code §27-232.

*3.1 ACCIDENT. See Code §27-1006. An injury to any person requiring the services of a physician or damage to property or to apparatus exceeding $100.

*3.2 AMUSEMENT DEVICE. A mechanically operated device or structure, open to the public, used to convey persons in any direction as a form of amusement. For the purpose of these reference standards, the word mechanically shall read mechanically and/or electrically operated.

3.3 AMUSEMENT DEVICE FOR CHILDREN. An amusement device designed for children twelve years of age and under.

3.4 CHILD. A person 12 years of age and under.

3.5 CONTAINING DEVICE. A strap, belt, bar, gate or other safety device designed to prevent accidental or inadvertent dislodgement of a passenger from a device but which does not actually provide physical support.

3.6 DEVICE OPERATOR. Any person or persons actually engaged in or directly controlling the operations of an amusement device.

3.7 GUARDIAN. A person 16 years of age and over.

3.8 GUARDIAN RESTRICTION. A condition placed on an amusement device where a passenger must be accompanied on the device by a guardian.

3.9 HEIGHT RESTRICTION. A statute requirement for passengers to be permitted on a specific amusement device which is contained on the list of height restrictions maintained by the Commissioner in accordance with subsection 4.6 of this Standard.

3.10 NATIONALLY RECOGNIZED TESTING AGENCY. A laboratory, such as the Underwriters Laboratories, Inc., or the Factory Mutual Engineering Corporation or any similar testing organization acceptable to the Commissioner.

*3.11 NON-DESTRUCTIVE TESTING. A general term used to identify inspection methods that permit evaluation of welds, structural members and joints without destroying their usefulness.

*3.12 OPERATOR. A competent individual designated by the owner, who shall be at least 18 years old, free from serious physical or mental defects, selected with consideration of his abilities to perform his duties on an amusement device, in a careful and competent manner, who has met the requirements for a Certificate of Competency set forth under Policy and Procedure Notice #3 of 1993 in accordance with Code §27-1005.

*3.13 OWNER. A person having legal title to the premises; a mortgagee or vendee in possession; a trustee in bankruptcy; a receiver or any other person having legal ownership or control of premises. For the purpose of these reference standards, the word premises shall read premises and/or amusement device.

*3.13.1 OWNER. Also the person who manages the operations of the amusement device.

*3.14 PASSENGER TRAMWAY. A device used to transport passengers in cars on tracks or suspended in the air, by use of steel cables, chains or belts or by ropes, and usually supported by trestles or towers with one or more spans.

*3.15 PERMANENT. Lasting for a period of time exceeding two (2) weeks.

*3.16 PORTABLE. Devices which by mounting on a motor vehicle or trailer are made mobile and which require additional assembly or support for operation. Their usage may be permanent or temporary.

*3.17 RESTRAINING DEVICE. A safety belt, harness, chair, bar or other device which affords actual physical support, retention or restraint to the passenger of an amusement device.

*3.18 SHALL. A mandatory requirement.

*3.19 STRUCTURE. An assembly of materials forming a construction for occupancy or use, including among others: buildings, stadia, tents, reviewing stands, platforms, stagings, observation towers, radio towers, tanks, trestles, open sheds, coal pockets, shelters, fences and display signs.

*3.20 TEMPORARY. Lasting for a period of time not to exceed two (2) weeks.

*4.0 COMPLIANCE. Every owner, device operator and the public using an amusement device shall comply with or effect compliance with all provisions of applicable sections of the New York City Administrative Code and these reference standards.

*4.1 An amusement device which is not in compliance with these reference standards shall not be used
or occupied, except as provided in 4.2.
*4.2 Where only individual units or a device, such as cars, seats or other carriers are defective and not
in compliance with these reference standards, such units shall be taken out of service and clearly marked with a sign reading Out of Service provided however, such defects do not jeopardize the safety of the entire device.
4.3 The owner of an amusement device shall not permit a person who in the judgement of the operator of the ride appears to be under the influence of alcohol or narcotics to enter any amusement device.
4.4 The Commissioner shall classify all amusement devices either an "Amusement Device" or as an "Amusement Device for Children."
4.5 The Commissioner shall reserve the right to establish the height restriction, guardian restriction, and classification of any device.
4.6 The Commissioner in accordance with subsection 4.5 of this section shall maintain a list of approved heights for children 12 years of age and under for specific amusement devices other than those designed for them.
4.7 The owner of an amusement device shall not permit a passenger under the approved height on such list; or
4.7.1 The passenger being a child not meeting the approved height restriction, is accompanied, elbow to elbow or front to back on the ride by a guardian.

*5.0 PERIODIC INSPECTION AND TEST INTERVALS. Every new and existing amusement device shall be inspected and tested in accordance with the provision of Code §27-998.
5.0.1 An amusement device may be used and operated for a period not to exceed six (6) months from the date of the last satisfactory periodic inspection and test, unless otherwise noted. The Commissioner may extend the periodic inspection and test for an additional two (2) months for amusement devices located in premises which are seasonably operated.
5.0.1.1 An amusement device which has been assembled and disassembled shall be inspected and tested as required by the Department after reassembly prior to its use and operation, regardless of the date of the previous inspection and tests. However, for portable devices, a prior load test inspection certificate from a cognizant state or city agency coupled with an affidavit that the test set-up is representative of the permitted operating conditions at the site based on said test may be accepted. The affidavit shall also state that all of the work necessary to retain it in the same structural situation has been performed.
5.0.1.2 An amusement device which has been altered, based upon an approved application and permit issued by the department, shall be inspected and tested.
5.0.1.3 An amusement device which has been relocated shall be inspected and tested after each relocation, as required by the department, prior to its use and operation, regardless of the date of the previous inspection and tests. However, for portable devices, a prior load test inspection certificate from a cognizant state or city agency coupled with an affidavit that the test set-up is representative of the permitted operating conditions at the site based on said test, may be accepted. The affidavit shall also state that all of the work necessary to retain it in the same structural situation has been performed.
5.0.1.4 An amusement device shall be inspected and tested, regardless of the date of the previous inspection and tests, when there are reasonable grounds to believe that such tests are necessary to assure safety and the commissioner or his representative orders such tests to be made.
*5.0.1.5 All permanent amusement devices requiring a load test and which operate seasonally for less
than nine months shall require two field inspections by authorized representatives of the Department. The first inspection shall take place prior to the opening day of the amusement device and the second inspection shall take place no sooner than 90 days nor later than 120 days from the first inspection.
5.0.2 Notification of the proposed date of the regular periodic inspection and test shall be made to the department at least one week prior to the scheduled date by the owner of the amusement device or by the person or firm conducting the inspection and test.
*5.0.3 Refer to Code §26-213c for required fees for inspection and tests, and for permits to use and operate amusement devices.

*5.1 INSPECTION AND TEST REQUIREMENTS. Every new and altered, rebuilt or modified amusement device shall be subjected to inspection and test requirements in accordance with the provisions of Code §27-999(c) and these reference standards.
5.1.1 Such inspections and tests shall be conducted by the person or firm installing, assembling, altering or relocating the amusement device and shall be witnessed by an authorized representative of the commissioner.
5.1.2 The results of the inspection and test for each amusement device shall be filed together with the required fee with the department by the person or firm conducting the inspection and tests. All such reports shall contain the following:
*5.1.2.1 The name, address and signature of the person conducting the inspection and test. All applications, plans, reports which are required to be submitted by a licensed Professional Engineer ("PE") or Registered Architect ("RA") shall be signed and sealed.
5.1.2.2 Trade or descriptive name of the amusement device and model number, if any, together with any identifying numbers.
5.1.2.3 The name and address of the manufacturer.
5.1.2.4 The date of the inspection and tests.
5.1.2.5 The maximum safe number of passengers and the maximum safe speed.
5.1.2.6 The results of the inspection and tests and a statement whether the results indicate confirmation as to the adequacy of the amusement device.
5.1.2.7 The results of the air compressor tank test and a statement whether the results indicate compliance.
* 5.1.2.8 There shall be kept with all permanent amusement

devices requiring a load test, a maintenance or operational manual containing the recommended foundations. If the manual does not contain the required foundations, then a plan and design of the footings prepared by a PE or RA licensed in the State of New York shall be prepared and retained with the device. Said plan shall indicate the size and pressure under the footings and allowable soil bearing capacity. In the case of existing permanent amusement devices with a device number issued by the Department of Buildings, compliance with this requirement will be delayed until March 1, 1997, provided an affidavit is submitted by the owner of the amusement device to the Department prior to June 30, 1996 indicating the name of the PE or RA retained to prepare the plans.

* 5.1.2.9 For the installation of temporary amusement devices requiring a load test, the owner of the amusement device shall submit the proposed foundations as recommended in the maintenance or operational manual of the amusement device to the Department of Consumer Affairs together with any amusement device license application. If the manual does not contain the proposed footings for varying underlying conditions, a plan and design of the footings shall be submitted to the Department of Consumer Affairs prepared by a PE or RA licensed in the State of New York. The plan shall indicate the size and pressure under the footings and allowable soil bearing capacities and a copy shall be kept with the amusement device. A valid New York State "Permit to Operate an Amusement Device" may be submitted in lieu of the above.

*5.1.2.10 The name and signature of the authorized representative of the commissioner who has witnessed the inspection and tests.

*5.2.1 OPERATION, MAINTENANCE, INSPECTION AND TEST RECORDS Effective March 15 1997, the owner shall retain on-site for the preceding one year, current operation maintenance inspection and test records for each amusement device which is available to and acceptable to the Commissioner. Such records shall be kept up to-date at all times.

*5.2.1.1 All operations, maintenance, inspection and tests shall be performed in accordance with the manufacturer's manuals. Where such manuals are not available a PE or RA licensed in any jurisdiction acceptable to the Commissioner shall determine the necessary operation, maintenance, inspections and tests. Such manuals shall be prepared in accordance with ASTM F770-88, F846-92 AND F853-91. In the case of existing permanent amusement devices with a device number issued by the Department of Buildings, compliance with this requirement will be delayed until March 1, 1997 provided an affidavit is submitted by the owner of the amusement device to the Department prior to June 30, 1996 indicating the name of the PE or RA retained to prepare the manuals.

*5.2.1.2 For temporary amusement devices the owner shall submit to the Department of Consumer Affairs, together with the amusement device license application, an affidavit in a form acceptable to the Commissioner that all necessary operation, maintenance, inspection and tests required by the manufacturer or the PE or RA pursuant to Section 5.2.1.1 have been performed for three (3) months prior to its present location. The affidavit shall contain the locations and dates of operation, maintenance, inspection and tests for the required 3 month period.

5.2.2 These records shall contain the following information:

* 5.2.2.1 Date and nature of all inspections whether by the Department or the owner.

5.2.2.2 Any violation and type of action taken to rectify the violation.

*5.3 **NONDESTRUCTIVE TESTING FOR PERMANENT DEVICES REQUIRING A LOAD TEST.**

* 5.3.1 All permanent amusement devices requiring load tests shall be inspected annually prior to the start of the season by nondestructive methods by a laboratory under the supervision of a PE or RA licensed in the State of New York or by authorized representatives of the manufacturer. The tests shall be performed in accordance with ASTM 3.03 (1995) Standards for Nondestructive Testing.

* 5.3.1.1 All personnel performing nondestructive tests shall be qualified by experience, education and examination in accordance with ASNT December 1992. SNT-TC-1A for Level II.

*5.3.1.2 Prior to performing any tests the entire amusement device and supporting structure shall be visually inspected. The inspection of the amusement device shall be in the disassembled configuration where possible, in order to be able to inspect critical areas which cannot be seen or reached in the assembled configuration.

* 5.3.1.3 The parts of the amusement device and supporting structure subject to nondestructive testing shall be as recommended by the manufacturer. Where the manufacturer's recommendations are not available a PE or RA shall determine the parts of the amusement device and supporting structure which shall be tested in accordance with ASTM F846-92 and shall select the appropriate test method.

* 5.3.1.4 The laboratory or authorized representative of the manufacturer shall submit a test report to the Department of Consumer Affairs together with any amusement device license application and shall identify the ride tested, the Department of Consumer Affairs license number and the location of the tested areas. If the manufacturer or the PE or RA does not recommend any nondestructive testing then an affidavit reflecting such recommendation shall be submitted by the owner with evidence acceptable to the Commissioner of Buildings.

* 5.3.1.5A weld that fails inspection shall be reported to the Department and shall be repaired by a licensed New York City welder. Where the welding work is not performed in the City of New York, welds shall be made by AWS qualified welders. A part such as a pin, axle or tension strap that fails inspection shall be removed and a new or repaired part shall be used as a replacement. The location of failed joints and parts shall be noted on the report to the Department. No amusement device shall be placed into operation until necessary repairs are made and the repaired parts retested.

*5.4 NONDESTRUCTIVE TESTING FOR TEMPORARY DEVICES REQUIRING A LOAD TEST.

*5.4.1 The requirements set forth in Section 5.3 shall be applicable to temporary amusement devices except that all temporary amusement devices requiring load tests shall have had a nondestructive test within one year prior to use of the amusement device in New York City. For temporary rides a valid New York State "Permit to Operate an Amusement Device" may be submitted in lieu of the affidavit referenced in Section 5.2.1.2 as evidence of compliance with nondestructive testing.

*5.4.1.1 In addition, the requirements set forth in Section 5.3 may be met by a licensed PE or RA of any jurisdiction acceptable to the Commissioner.

*5.5 The Commissioner may waive the requirements of Section 5.3 for a period not to extend beyond December 31, 1996 for existing permanent amusement devices with a device number issued by the Department of Buildings and the manufacturer's manuals are not available.

PART II DESIGN AND CONSTRUCTION

6.0 DESIGN.

6.0.1 All structures used in connection with amusement shall be so designated and constructed as to carry safely all loads to which such structures may normally be subjected.

*6.0.2 All amusement devices shall be designed, constructed and installed so as to withstand any normal stresses to which they may be subjected.

*6.0.3 Before being used by the public, amusement devices shall be so placed or secured with blocking, cribbing, outriggers, guys or other means as to be stable under all operating conditions.

*6.0.4 All amusement devices, such as, but not limited to, passenger tramways, where restoration of electrical power could create a hazard, shall be provided with a main disconnect switch capable of being locked only in the Off position.

*6.0.5 The path of travel of an amusement device shall have a clearance adequate to insure that a passenger on the device cannot be injured by contacting any structural member or other fixed object when the passenger is in the riding position.

*6.0.6 For any new amusement devices manufactured after January 1, 1997, or whenever any additions or alterations are made to any amusement device after January 1, 1997 which changes the structure, mechanism or capacity of any amusement device which requires a load test, a PE or RA shall submit signed and sealed plans of the amusement device to the Department and shall contain design data, safety factors, materials utilized, stress analysis and other pertinent data. The Department's review and acceptance of said plans shall be conveyed by the owner to the Department of Consumer Affairs. The owner shall indicate on its application for an amusement device license whether the device was manufactured or altered after January 1, 1997.

*6.0.6.1 Such stress analysis shall include the affect of forces generated by acceleration, deceleration, centrifugal action or kinetic or other forces which are constant, reversible or eccentric. Materials and other data pertinent to the design, structure, factors of safety or performance characteristics shall be in accordance with accepted engineering practices, standards and specifications acceptable to the Department, and written in English.

*6.0.6.2 Such plans, dimensioned to scale, shall identify parts and components of amusement devices including, but not limited to the following:

*6.0.6.2.1 Bars
*6.0.6.2.2 Cables
*6.0.6.2.3 Chains
*6.0.6.2.4 Ropes
*6.0.6.2.5 Rods
*6.0.6.2.6 Pipes
*6.0.6.2.7 Girders
*6.0.6.2.8 Braces
*6.0.6.2.9 Fittings
*6.0.6.2.10 Fasteners
*6.0.6.2.11 Trusses
*6.0.6.2.12 Pressure vessels
*6.0.6.2.13 Pressure piping
*6.0.6.2.14 Gears
*6.0.6.2.15 Clutches
*6.0.6.2.16 Speed reducers
*6.0.6.2.17 Welds
*6.0.6.2.18 Bearings
*6.0.6.2.19 Couplings
*6.0.6.2.20 Shaftings
*6.0.6.2.21 Carriers, such as tubs, cars, chairs, gondolas, or seating and carrying apparatus of any description
*6.0.6.2.22 Axles
*6.0.6.2.23 Hangers
*6.0.6.2.24 Pivots
*6.0.6.2.25 Safety bars, belts, harnesses, chains, gates or other restraining, containing, or retaining devices

*6.1 MUSEMENT DEVICE ENTRY AND DISCHARGE. Safe and adequate means of entry and discharge from each device shall be provided. This safe and adequate means of entry and discharge shall not be construed to means of exits, means of access, means of egress.

6.2 MEANS OF ACCESS AND EGRESS.

*6.2.1 Safe and adequate means of access and egress from amusement devices shall be provided.

*6.2.2 At least two means of egress remote from each other shall be provided from each floor, tier, room or balcony in structures which house amusement devices.

6.2.3 Access to the means of egress shall be marked by readily visible signs in all cases where it is not immediately visible to the passengers.

6.2.4 No means of egress shall be less than 22 inches in width.

6.2.5 The width of a stairway shall be taken as the length of the treads between stringers. The width of a doorway shall be taken as the width of the door.

6.2.6 The maximum travel distance from the most remote

point in any room or enclosed space to an open safe outside space shall be not greater than that listed below:
6.2.6.1 100 feet in unsprinklered construction,
6.2.6.2 150 feet in sprinklered construction, and
6.2.6.3 25 feet in dead ends.
6.2.7 Means of access and egress shall have protection from adjacent hazards and protection from falling by use of rails, enclosures, barriers or similar means.
6.2.8 Means of access and egress shall be free from debris, obstructions, projections and slipping, tripping and other hazards.
6.2.9 The head clearance in passageways shall not be less than 7 feet.
*6.2.10 Means of access or egress shall have either stairways or ramps and connecting landings or platforms where the public enter or leave an amusement device, that is above or below grade with proper handrails and guards.
6.2.11 Stairways, passageways, ramps, landings or platforms shall be not less than 22 inches in width for single lane passage or 44 inches for double lane passage. Landings or platforms shall not be less than 3 feet long measured in the direction of travel.
*6.2.12 Stair treads shall be at least nine inches deep exclusive of nosing and the height of rise shall not exceed eight inches. Between any two connecting levels the treads shall be of uniform depth and the risers shall be of uniform height. The slope of ramps shall not exceed that required in Code §27-377.
6.2.13 Substantial handrails shall be provided on both sides of all stairways of four or more risers connecting adjoining levels whose difference in elevation is 80 inches or more.
6.2.14 Substantial handrails shall be provided on both sides of landings, platforms or ramps 30 inches or more above grade.
6.2.15 Handrails shall be at least 30 inches above the ramp surface or nose of steps and 42 inches above the landings.
6.2.16 The distance between handrails shall not be less than 18 inches for single lane passage and 36 inches for double lane passage.
6.2.17 Two intermediate rails spaced equally apart or equivalent construction to prevent a passenger from falling through the handrails shall be provided with handrails.
6.2.18 Stairways and ramps requiring handrails in accordance with 6.2.13 or 6.2.14 which are more than 8 feet wide shall be provided with railings dividing the widths into not more than 8 feet and not less than the widths of 6.2.11.
6.2.19 Stairways, landings and ramps shall be designed, constructed and maintained so as to sustain safely a live load of at least 100 pounds per square foot.
* 6.2.20 Surfaces in 6.2.19 shall be of non-slip type.
6.2.21 ILLUMINATION. Access to and exits from amusement devices, erected permanently or temporarily, shall be provided with illumination by natural or artificial means of not less than five (5) foot candles measured at grade level.
6.3 EMERGENCY BRAKES AND ANTI-ROLL BACK DEVICES.
*6.3.1 If cars or other components of an amusement device may collide upon failure of normal controls, emergency brakes sufficient to prevent such collisions shall be provided.
*6.3.2 On devices which make use of inclined tracks, automatic anti-roll back devices shall be installed to prevent backward movement of the passenger-carrying units in case of failure of the propelling mechanism when such backward movement could result in injury to a member of the public.
6.4 SIGNAL SYSTEM.
*6.4.1 Signal systems for the starting and stopping of amusement device shall be provided where the operator of the device does not have a clear view of the point at which passengers are loaded or unloaded.
6.4.2 Any code of signals adopted for the operation of any amusement device shall be printed and kept posted at both the operators and signalman stations. All persons who may use these signals shall be carefully instructed in their use.
6.4.3 Signals for movement or operation of an amusement device shall not be given until all passengers and other persons who may be endangered are in a position of safety.
*6.5 PROTECTION AGAINST MOVING PARTS.
*6.5.1 An amusement device shall not be used or operated while any person is so located as to be endangered by it. Areas in which persons may be so endangered shall be fenced, barricaded or otherwise guarded against public intrusion.
6.5.2 Machinery used in or with an amusement device shall be enclosed, barricaded or otherwise effectively guarded against contact. Guards removed for maintenance purposes shall be replaced before normal operation is resumed. Maintenance shall not be conducted while in public use.
*6.6 SPEED LIMITING DEVICES. An amusement device capable of exceeding its maximum safe operating speed shall be provided with a maximum speed-limiting device which may be either electrical or mechanical.
6.7 PASSENGER-CARRYING DEVICES.
6.7.1 The interior and exterior parts of all passenger-carrying amusement devices with which a passenger may come in contact shall be smooth and rounded, free from sharp, rough or splintered edges and corners, with no protruding studs, bolts, screws or other projections which might cause injury.
*6.7.2 Interior parts upon which a passenger may be forcibly thrown by the action of the device shall be adequately padded.
6.7.3 Amusement devices equipped with a safety bar, cage or other mechanically operated restraining device shall be equipped with a retiring cam or other device so designed that the safety bar, cage or other mechanically operated device cannot be released except at the point of loading or unloading; or alternately that the release device is on the exterior of the conveyance, cab or vehicle and is normally actuated by the amusement device operator.
6.7.4 Amusement devices which are self-powered and which are operated by a passenger shall have the driving mechanism so guarded and the guards so secured in place as to prevent passengers from gaining access to the mechanism.
*6.7.5 Belts, bars, footrests and other equipment as may

be necessary for safe entrance and exit and for support while the device is in operation shall be provided and maintained in a safe condition. Such equipment and the fastenings shall be of sufficient strength to retain the passengers.

6.7.6 Passenger restraining or containing devices shall be provided and used on any amusement device where centrifugal and other forces or mechanical malfunction could unseat or dislodge a passenger.

*6.7.7 Passenger restraining or containing devices used on tubs, cars, chairs, seats, gondolas and other carriers on an amusement device, where the forces generated by the action of the device require retention, restraint or actual physical support of the passenger shall be designed, constructed, installed, and maintained to support the passenger safely. The fastenings shall be a type which cannot be inadvertently released by the passenger or by an accidental means. Icebox fastenings on a scrambler will not meet this requirement.

6.7.8 Anchorages for the required restraining devices shall have strength at least equal to the strength of the restraining device.

6.8 PASSENGER TRAMWAYS.

6.8.1 The standards prescribed by safety requirements for Aerial Passenger Tramways ANSI B77.1-1982 and supplements B77.1a-86 and B77.1b-88 are adopted as safety standards and shall apply according to the provisions thereof.

6.8.2 Each operator engaged in passenger tramway operations shall protect the public by complying with the standards prescribed in 6.8.1.

6.8.3 Only technical standards relating to public safety are adopted by any incorporation by reference as prescribed in 6.8.1. Other standards relating to administration and reporting procedures are not adopted.

6.8.4 Where any conflict occurs between the standards prescribed in 6.8.1 and these rules, these rules shall prevail.

6.9 ELECTRICAL EQUIPMENT.

6.9.1 All electrical wiring and equipment used for amusement devices or for lighting shall be installed, operated and maintained in accordance with the New York City Electrical Code.

6.9.2 All electrical transformer substations shall be properly enclosed and proper warning signs shall be posted.

6.9.3 Electrical wiring and equipment located outdoors shall be of such quality and so constructed or protected that exposure to weather will not interfere with its normal operation.

6.9.4 Elevated power lines crossing access or other roads within the grounds of a carnival or amusement park shall be so suspended as to provide a vertical clearance of at least 14 feet from the road surface or 3 feet above any vehicle used within the grounds of a carnival or amusement park. A horizontal clearance of at least three feet shall be provided on each side of the normal passage space of vehicles.

6.9.5 All lamps for general illumination shall be protected from accidental contact or breakage. Protection shall be provided by elevation of at least 7 feet from normal working surface or by a suitable fixture or lampholder with a guard.

6.9.6 Each electrically powered amusement device shall be effectively grounded. The grounding shall be made effective as to all non-current carrying metal parts which may become energized and which are exposed to contact by any person.

6.9.7 PROTECTION OF EMPLOYEES. No employees shall be suffered or permitted to work in such proximity to any part of an electric power circuit that he may contact the same in the course of his work unless he is protected against shock by de-energizing the circuit, grounding it, or guarding it by effective insulation. If the protection is supplied by de-energizing the circuit, the switch controlling the circuit shall be locked out to prevent inadvertent closing.

6.10 AIR COMPRESSORS AND EQUIPMENT. Air compressors, air compressor tanks and equipment used in connection therein shall be designed, constructed, equipped and maintained to insure safe operation at all times. They shall be inspected and tested every six months by a qualified person. Air compressor tanks shall be tested to demonstrate that they will sustain a hydrostatic pressure for a period of at least one (1) hour. Such test shall be conducted at the same time as the required periodic inspection and test. A record of each inspection shall be kept and made available to the Commissioner. Air compressor tanks and other air receivers used in connection with air compressors shall have the maximum allowable working pressure conspicuously marked thereon. Refer to Rule 6.11.

6.11 FIRE PREVENTION. The New York City Fire Prevention Code shall be applicable to this section.

6.11.1 Fabrics constituting part of an amusement device shall be flame resistant to meet the following field test: The application of a flame from a three-quarter inch paraffin candle for a period of one minute which does not cause the fabric to flash, nor support combustion, nor continue to flame for more than two seconds or glow for more than thirty seconds after removal of the test flame.

6.11.2 Approved fire extinguishers shall be provided where necessary to secure reasonable and adequate protection from fire hazards.

6.11.3 Flammable waste such as oily rags and other flammable materials shall be placed in covered metal containers which shall be kept in easily accessible locations. Such containers shall not be kept at or near exit.

6.11.4 Gasoline and other flammable liquids and flammable gases when stored shall be kept in reasonably cool and ventilated places. Such liquids shall be in approved containers. Smoking and the carrying of lighted cigars, cigarettes or pipes is prohibited in any area where such liquids or gases are stored or are transferred from one container to another.

6.12 LOAD TESTS.

6.12.1 No passenger-carrying amusement device of the following types shall be used or put into normal operation until it has withstood an annual load test without failure in any material respect:

6.12.1.1 Devices having suspended passenger seats or spaces;

6.12.1.2 Devices normally operated at speeds or with movements creating severe gravity, inertial or centrifugal forces;

6.12.1.3 Devices so elevated that structural failure is likely to cause passengers to be injured by falling;

6.12.1.4 Devices as to which the commissioner has ordered such a test upon finding it necessary to assure safety.

*6.12.2 Each passenger seat or space shall be weighted with at least 150 pounds dead weight, except that in a device intended only for small children, each seat or space shall be weighted with at least 75 pounds. While so loaded the device shall be operated at maximum normal speed as to test the full operation of all control devices, anti-rollback devices, speed limiting devices, brakes and other equipment provided for safety. The device shall withstand the test without failure in any material respect. The soil and the foundation shall not show signs of inadequacy.

6.12.3 Unless a load test is made in the presence of the Commissioner, the owner of the device shall cause to be filed with the Commissioner a statement by either (1) the manufacturer of the device, or (2) an insurance carrier lawfully doing business in this State and carrying public liability insurance on the device, or (3) a qualified Licensed PE or RA showing whether the device withstood the test without failure in any material respect and setting forth such other relevant information as the Commissioner may require. Until such a statement is so filed it shall be presumed that the device has not withstood the test as required.

6.12.4 A load test complying with 6.12.3 when performed in another jurisdiction shall be deemed acceptable, provided:

6.12.4.1 The statement required by 6.12.3 is substantially equivalent and the information therein is verified by a Licensed PE or RA.

6.12.4.2 The jurisdiction enforces rules substantially equivalent to this Section, and

6.12.4.3 A copy of the statement is furnished to the Commissioner.

6.12.5 If the device fails to withstand a load test it shall be deemed unsafe and shall not be used until and unless it has withstood a subsequent load test without failure in any material respect. If the device has withstood a load test without failure in any material respect, it shall be required to be so tested again before going into normal operation only if rebuilt or modified or if there are reasonable grounds to believe that a further test is necessary before the next required load test to assure safety and the Commissioner orders such test to be made.

6.13 IDENTIFICATION AND RATING PLATES.

*6.13.1 Every amusement device shall be identified by the name and address of the manufacturer, a trade or descriptive name and the physical information prescribed in Section 6.13 and in Part VI.

*6.13.2 A metal plate shall be affixed to the amusement device readily visible and legible at all times and shall contain the following information:

*6.13.2.1 Owner's name and address

*6.13.2.2 Department of Consumer Affairs license number

*6.13.2.3 Name of device

*6.13.2.4 Capacity of device

*6.13.2.5 Speed of device

*6.13.3 Information other than as required in Section 6.13.2 may be kept in an office on the same premises.

*6.13.4 If an amusement device or its supporting structure is altered or its name changed, or its capacity increased, or its speed increased, or its ownership changed, the metal plate shall be removed and a new metal plate with the correct information shall be affixed to the device.

*6.14 ASSEMBLY AND DISASSEMBLY.

*6.14.1 The assembly and disassembly of an amusement device shall be done by or under the immediate supervision of a person experienced and instrumental in the proper performance of such work in respect to the device or structure.

* 6.14.2 Assembly work shall be performed in a proper and workmanlike manner. Parts shall be properly aligned and shall not be bent, distorted, cut or otherwise injured to force a fit. Parts requiring lubrication shall be lubricated in course of assembly and as required during operation. Fastening and locking devices, such as bolts, cap screws, cotter pins and lock washers, shall be installed where required for safe operation. Nuts shall be drawn tight, cotter pins shall be spread and lock nuts firmly set. "R" pins shall only be used in locations recommended by the manufacturer or licensed PE or RA.

* 6.14.3 Parts which are excessively worn or which have been materially damaged shall not be used. Close visual inspection of parts shall be made during assembly to discover such wear or damage and immediate inspection of fastening devices shall be made after assembly to assure that they have been properly installed.

* 6.14.4 Persons engaged in the assembly or disassembly of amusement devices shall be provided with and shall use tools of proper size and design to enable the work to be done in a proper manner. Broken, damaged and unsuitable tools shall not be used.

* 6.14.5 Assembly and disassembly of amusement devices shall be done under light conditions sufficient to permit the work to be properly performed and inspected.

* 6.14.6 A sufficient number of persons to do the work properly shall be engaged for the assembly or disassembly of amusement devices. Persons not so engaged shall be prevented from entering the area in which the work may create a hazard.

*6.14.7 The owner of an amusement device shall comply with the manufacturers construction manual for the assembly and disassembly of the device. The manufacturers construction manual shall be kept with the amusement device and shall be available for use by an authorized representative of the Department.

*6.15 LIGHTING.

*6.15 Amusement devices access thereto and means of egress therefrom shall, while in operation or occupied, be provided with illumination by natural or artificial means sufficient to guard against injuries to the public.

PART III OPERATION

7.0 NOTICE.

7.0.1 No amusement device shall be used at any time or location unless prior notice of intent to use the same has been given to the Commissioner.

*7.0.2 Notice of planned schedules shall (1) be in writing, (2) identify the device, (3) state the intended dates and locations of use, and (4) be given to the Department's Elevator Division and Bureau of Electrical Control at least five days before the first intended date of use.

7.1 DAILY INSPECTION AND TEST.

*7.1.1 In addition to the requirement set forth in Sections 5.0, 5.1 and 5.2 an amusement device shall be inspected and tested on each day before it is intended to be used. The inspection and test shall be made by a qualified person experienced and instructed in the proper assembly and operation of the device and shall be performed before the device is put into normal operation.

7.1.2 The inspection and test shall include the operation of control devices, speed-limiting devices, brakes and other equipment provided for safety.

*7.1.3 In addition to the requirements of 5.2.1. a record of each inspection and test shall be made at once, upon completion of the test, and shall be kept with the amusement device and available to the Commissioner or authorized representative for at least one year.

*7.2 LOCATION OF CONTROLS. Controls for the starting and stopping of amusement devices shall be so located that the operator of the device has a clear view of the point at which passengers are loaded and unloaded.

*7.3 CONTROL OF OPERATION. Amusement devices shall be operated only by designated competent operators who have secured a Certificate of Competence from the Commissioner in accordance with the provisions of Code §27-1005.

*7.3.1 The device operator shall operate no more than one device at any given time.

*7.3.2 The device operator shall have knowledge of the use and function of all normal and emergency operating controls and the proper use of the device.

*7.3.3 The device operator shall be in the immediate vicinity of the operating controls during operation and no other person shall be suffered or permitted to handle such controls during normal operations. This provision shall not apply to amusement devices designed to be operated or controlled safely by a passenger.

*7.3.4 The device operator shall not operate any device when under the influence of alcohol or drugs.

*7.3.5 The device operator shall operate the device in accordance with the manufacturers operating manual. The manufacturers operating manual shall be kept with the amusement device or in an office on the same premises and shall be available for use by an authorized representative of the Department.

*7.3.6 The device operator shall lock-out the electrical disconnect switch when restoration of electrical power to amusement device could create a hazard to persons during the performance of maintenance, repair, inspection or an emergency evacuation of passengers, and insure that it retains lock-out until such time that restoration of power will not create hazard.

*7.4 OVERLOAD AND OVERSPEED.

*7.4.1 An amusement device shall not be overcrowded, or loaded in excess of its safe carrying capacity.

*7.4.2 An amusement device shall not be operated at an unsafe speed or at a speed beyond that recommended by the manufacturer.

*7.5 WIND AND STORM HAZARD. An amusement device which is exposed to wind or storm shall not be operated under dangerous conditions except to release or discharge occupants.

*7.6 UNSAFE. If the Commissioner finds that an amusement device presents an imminent danger, he may attach to said device an UNSAFE notice, warning all persons against the use of the device. Such notice shall not be removed until the device is made safe, and then only by a representative of the Commissioner. The device shall not be used during the time that the notice is attached.

*7.7 CLEANLINESS.

*7.7.1 A suitable number of metal containers shall be provided in and around amusement devices. Excessive accumulations of trash or refuse shall be promptly removed.

*7.7.2 All parts of amusement devices and temporary structures used by passengers or customers shall be maintained in a clean condition.

*7.8 PASSENGER CONDUCT.

*7.8.1 The owner shall have the right to refuse any member of the public admission to a device if his bearing or conduct will endanger himself or other members of the public.

*7.8.2 The owner shall have the right to refuse admittance to any device if the intended passengers health or physical condition makes it unsafe for him to use the device.

*7.8.3 The owner shall refuse a passenger seeking admission to an amusement device if the passenger cannot meet a guardian or height restriction if the device is subject to such a restriction. Legible signs to this effect shall be posted in full view of the public seeking admission to the amusement device. Refer to the requirements of the Department of Consumer Affairs.

*7.9 WARNING SIGNS.

*7.9.1 Where an amusement device exposes a passenger

to high speed, substantial centrifugal force or a high degree of excitement, the owner shall post a conspicuous warning sign at the entrance to the device advising the public of the risk to passengers.

* 7.9.2 The sign required by 7.9.1 shall be at least 2 feet by 2 feet in sharply contrasting colors.

* 7.9.3 The sign required by 7.9.1 shall read as follows or express an equivalent warning.

The following people should not ride this amusement device:

1. Those under the influence of alcohol.
2. Those under influence of narcotics.
3. Those with heart conditions.
4. Pregnant women.
5. Handicapped people.
6. Those subject to motion sickness.
7. Those with back ailments.

* 7.9.4 The following additional signs may be required to be posted:

* 7.9.4.1 Passengers shall remain seated until device comes to complete halt!

* 7.9.4.2 No Standing!

* 7.9.4.3 No Smoking!

* 7.9.4.4 No Food or Drink!

PART IV. BUILDING AND STRUCTURES THAT ARE A FUNCTIONAL PART OF AN AMUSEMENT DEVICE.

8.0 SCOPE. This part shall apply to the construction of buildings and structures that are a functional part of an amusement device. To be a functional part of an amusement device, the building or structure shall be a contributing factor to the amusement, pleasure, thrill or excitement of the device.

8.1 CONSTRUCTION. Building Code Occupancy group classification, assembly, designation F-2, shall apply to buildings and structures constructed according to this part.

8.2 OCCUPANCY SAFETY. The following shall be provided in buildings and structures that are a functional part of an amusement device.

8.2.1 Posted signs indicating the number of persons who may safely occupy the space.

8.2.2 Illuminated exit signs in compliance with Article 6 of Subchapter 6 of the Code.

8.2.3 Not less than two fire extinguishers of a 10 pound ABC multi-purpose type approved by Underwriters Laboratory, Inc.

PART V. ENCLOSED BUILDINGS AND STRUCTURES WHICH IN THEIR ENTIRETY CONSTITUTE THE AMUSEMENT DEVICE.

9.0 SCOPE. This part shall apply to the construction of enclosed buildings and structures which in their entirety constitute the amusement device. It functions by pedestrians passage (by persons and/or children) through the enclosed building or structure which activates devices which contribute to their pleasure, thrill or excitement.

9.1 CONSTRUCTION. Building Code occupancy group classification, assembly, designation F-3, shall apply to buildings and structures constructed according to this part. Fun houses and haunted houses are representative occupancies.

9.2. OCCUPANCY SAFETY. The following shall be provided in buildings and structures occupied in accordance with this part:

*9.2.1 A posted sign at a prominent entrance location of 4 inch high letters stating:

OCCUPANCY BY MORE THAN 75 PERSONS IS UNLAWFUL.

9.2.2 A posted sign at a prominent entrance location stating:

NO SMOKING OR OPEN FLAME.

*9.2.3 Illuminated exit signs in compliance with Article 6 of Subchapter 6 of the Code.

*9.2.4 Automatic Fire Detectors in compliance with reference standards RS 17-3 and RS 17-5E. Closed circuit supervised detectors shall be installed in accordance with the above referenced standards.

9.2.4.1 Closed circuit supervised means all detector loops are complete. Should a break occur in the loop wiring, a trouble signal will sound at the control panel.

*9.2.5 Emergency lighting in compliance with Code §27-542; and activated at the same time as the automatic fire detection system.

9.2.6 Not less than two fire extinguishers of a 10 pound ABC multi-purpose type approved by Underwriters Laboratory, Inc.

PART VI. PHYSICAL INFORMATION TO BE PROVIDED FOR AMUSEMENT DEVICES.

10.0 SCOPE.

*10.0.1 ANSI/ASTM F698-1988. Standard Specification for Physical Information to be provided for Amusement Devices, as modified.

*10.0.2 The specification in section 10.1 covers the minimum requirements for information regarding amusement devices that shall be provided to the end user by the manufacturer or seller of amusement devices.

*10.1 SIGNIFICANCE AND USE.

*10.1.1 The purpose of this specification is to provide the minimum information necessary for the proper identification, placement, erection and operation of each amusement device.

*10.2 INFORMATION REQUIREMENTS.

*10.2.1 The information in sections 3.2 to 3.16 shall be either included or indicated as not applicable for all amusement devices by the manufacturer or seller at the time of sale of such amusement device.

*10.2.2 DEVICE SERIAL NUMBER.

A manufacturers issued unique identifying number or code affixed to the device in a permanent fashion.

*10.2.3 DEVICE MODEL NUMBER. A manufacturers issued unique identifying number or code assigned to each manufactured type of device having the same structural design or components.

*10.2.4 DATE OF MANUFACTURE. The date (month and year) determined by the manufacturer that the given device met his required construction specifications.

*10.2.5 TRAILERING INFORMATION. Each trailer necessary for the transport of a portable amusement device shall be provided with the following information: height, width, length and weight.

10.2.6 STATIC INFORMATION. The following information shall be provided for the amusement device when it is in a non-operational state with no passengers: height, width, diameter and weight.

10.2.7 DEVICE SPEED.

*10.2.7.1 Maximum revolutions per minute, or

*10.2.7.2. Maximum feet per second or miles per hour.

*10.2.8 DIRECTION OF TRAVEL. When the proper direction of travel is essential to the design operation of the device, the manufacturer shall designate the direction of travel, including reference point for this designation.

*10.2.9 POWER REQUIREMENTS.

*10.2.9.1 ELECTRICAL. Total electrical power required to operate the device designated in watts, volts and amperes, including minimum and maximum voltage limits.

*10.2.9.2 MECHANICAL. Minimum horsepower necessary to operate the device properly.

*10.2.10 LOAD DISTRIBUTION PER FOOTING.

*10.2.10.1 Maximum static loading of each footing of an amusement device, and

*10.2.10.2 Maximum dynamic loading of each footing of an amusement device.

*10.2.11 PASSENGER CAPACITY.

*10.2.11.1 Maximum total passenger weight, and

*10.2.11.2 Maximum number of passengers.

*10.2.12 RIDE DURATION. The actual time the ride is in operation or a passenger is exposed to the elements of the device functions, including passenger restrictions to maximum exposure time shall be included.

*10.2.13 RECOMMENDED BALANCE OF PASSENGER LOADING OR UNLOADING.

When passenger distribution is essential to the proper operation of the device, the appropriate loading and unloading procedure, with respect to weight distribution shall be provided.

*10.2.14 RECOMMENDED PASSENGER RESTRICTIONS. Where applicable, any recommended passenger limitations such as, but not limited to, height, weight, age, passenger placement, or any other appropriate restrictions.

*10.2.15 ENVIRONMENTAL RESTRICTIONS. Recommendations for operational restrictions relating to environmental conditions such as, but not limited to, wind, rain, salt corrosion, and extreme heat or cold.

****** 11-91 BCR; 934-84 BCR***

****DOB 3-8-96***

REFERENCE STANDARD RS-19
SAFETY OF PUBLIC AND PROPERTY DURING CONSTRUCTION OPERATIONS

* LIST OF REFERENCED NATIONAL STANDARDS

ANSI A10.3 Power Actuated Fastening Systems-Safety Requirements, as Modified.....1985
ANSI A10.11 American national standard for personnel and debris nets used during construction, repair and demolition operations, as modified.....1989
Local Law 61-1987; 111-90 BCR; 234-90 BCR; 1155-80 BCR

** REFERENCE STANDARD RS 19-1

ANSI A10.31-985-Power-Actuated Fastening Systems-Safety Requirements, as Modified.

Modifications.-The provisions of ANSI A10.3-1985 shall be subject to the following modifications. The section numbers are from that standard.

Amend section 4.2.2.1 to read as follows:

4.2.2.1 Medium-velocity tools, indirect-acting (piston) type, as defined in section 3, shall (meet the requirements of 4.1) not be accepted.

Delete sections 4.2.2.2, 4.2.2.3 and 4.2.2.4.

Amend section 4.2.3.1 to read as follows:

†4.3.2.1. High velocity tools, direct-acting or indirect-acting type, as defined in section 3, shall (meet the requirements of 4.1) not be accepted.

Delete sections 4.2.3.2, 4.2.3.3 and 4.2.3.4.

†As enacted, but "4.2.3.1" probably intended

Add the following new section:

5.6 Selection of load.-No employer shall knowingly furnish to an employee for use in a tool any cartridge or load not suitable for safe use in that tool, whether by reason of excessive power, improper design or poor material. The operator shall use due care to select the proper cartridges or power loads, or other means of controlling the force of the explosion so that is develops no more than the necessary pressure to bring about the desired penetration. In doing so, the operator shall be guided by the manufacturer's specifications.

5.6.1 Proper Load.-When doubt exists (as to proper load), the operator shall make a trial shot to test the surface and the strength of the material to be penetrated. The trial shot shall be made with the lowest power level and then increasing strength until a proper fastening is made. During this test, the operator and all bystanders shall adhere to all safety rules including, but not limited to wearing goggles and hard hats required for the job.

Add the following sentence before the first sentence in section 7.10:

7.10 The operator shall always verify the thickness and type of material into which the stud, pin or fastener is to be driven.

Add the following sections:

9.4 Storage of power loads shall be in accordance with the requirements of Fire Prevention Directive 2-62 R, dated February 21, 1979, Division of Fire Prevention, entitled "Regulations Governing the Use and Storage of Ammunition for the Construction and Alteration of Buildings."

10.3.1 The authorized instructors' card shall list the specific model(s) of powder actuated tool(s) for which training may be given.

10.6 All authorized instructors shall hold a Certificate of Fitness issued by the Fire Department.

11.4.1 The qualified operator's card shall list the specific model(s) of powder actuated tool(s) which may be used.

11.6 All qualified operators shall hold a Certificate of Fitness issued by the Fire Department.

12. Materials and Equipment Acceptance Division.

12.1. Powder-actuated tools using ammunition (power loads) accepted by the Materials and Equipment Acceptance Division and shall be accompanied by such a label.

12.2 Labeling.-The MEA acceptance label may be attached to the tool box or to the operator's manual in lieu of attaching it to the tool but, in any event must be kept available for inspection.

13. Fire Department Requirements.

13.1 The requirements of Fire Department, Division of Fire Prevention, Directive 2-62 R, dated February 21, 1979, entitled "Amended Regulations Governing the Use and Storage of Ammunition for the Construction and Alterations of Buildings" shall be complied with.

13.1.1. The following is extracted from such regulations:

a. Powder actuated tools utilizing ammunition (power loads) shall be used only by a person holding a Certificate of Fitness issued by the Fire Department upon a submission of evidence that person has satisfactorily completed a training program in the safe use of such equipment, acceptable to the Fire Department.

b. No powder actuated tool utilizing ammunition (power loads) shall be used unless the Certificate of Fitness holder establishes a safe zone behind the work area by the use of a one-quarter inch steel back-up plate and/or maintenance of an area clear of all people.

*****111-90 BCR***

*** RS 19-2 POWER OPERATED CRANES AND DERRICKS

1.0 Scope.-This standard applies to the construction, installation, inspection, maintenance and use of power

operated cranes and derricks used for hoisting and/or rigging purposes; or used for the construction, alteration, demolition, excavation and maintenance purposes, including highways or sewers; or used for the installation of piles; or used for the hoisting or lowering of any article on the outside of any building or structure.

1.1 Exemptions.-Exempt from the requirements of this reference standard are the following:

1.1.1 Cranes or derricks used in industrial or commercial plants or yards and floating cranes, floating derricks and cranes and derricks used on floating equipment. Also augers, churn-drills and other drilling equipment. Operators of such equipment shall be exempt from any licensing requirements.

1.1.2 Operators of cranes described in section C26-1909.4(a)(3) and (4) of the administrative code shall be exempt from any licensing requirements where the cranes are used in connection with the installation or maintenance of street lighting or public utility overhead power distribution systems.

1.1.3 Derricks having a maximum rated capacity not exceeding one ton.

2.0 Definitions.-

2.1 ACCESSORY.-A secondary part of assembly of parts which contributes to the overall function and usefulness of a machine.

2.2 APPOINTED.-Assigned specific responsibilities by the employer or by the employers representative.

2.3 ANGLE INDICATOR (boom).-An accessory which measures the angle of the boom to the horizontal.

2.4 AUXILIARY HOIST.-(See Whipline).

2.5 AXIS OF ROTATION.-The vertical axis around which the crane superstructure rotates.

2.6 AXLE.-The shaft or spindle with which or about which a wheel rotates. On truck and wheel mounted cranes it refers to an automotive type of axle assembly including housing, gearing, differential, bearings and mounting appurtenances.

2.7 AXLE (bogie).-Two or more automotive type axles mounted in tandem in a frame so as to divide the load between the axles and permit vertical oscillation of the wheels.

2.8 BASE (mounting).The base or carrier on which the rotating superstructure is mounted such as a truck, crawler or platform.

2.9 BOOM.A timber or metal section or strut. The heel (lower end) is affixed to a base, carriage or support, and the upper end supports a cable and sheaves where the load is lifted by means of wire rope and hook.

2.10 BOOM ANGLE. The angle between the longitudinal centerline of the boom and the horizontal. The boom longitudinal centerline is a straight line between the boom foot pin (heel pin) centerline, and boom point sheave pin centerline.

2.11 BOOM HARNESS. The block and sheave arrangement on the boom point to which the topping lift cable is reeved for lowering and raising the boom.

2.12 BOOM HOIST-A hoist drum and rope reeving system used to raise and lower the boom.

2.13 BOOM POINT.-The outward end of the top section of the boom.

2.14 BOOM STOP.-A device used to limit the angle of the boom at the highest position.

2.15 BRAKE.-A device used for retarding or stopping motion by friction or power means.

2.16 CAB.-A housing which covers the rotating superstructure machinery and/or operators station.

2.16. 1 CABLEWAY.-A power operated system for moving loads in a generally horizontal direction in which the loads are conveyed on an overhead cable, track or carriage.

2.16.2 CLIMBER CRANE.-A crane erected upon and supported by a building or other structure which may be raised or lowered to different floors or levels of the building or structure.

2.17 CLUTCH.-A friction, electromagnetic, hydraulic, pneumatic or positive mechanical device for engagement of power.

2.18 COUNTERWEIGHT.-Weight used to supplement the weight of the machine in providing stability for lifting working loads.

2.19 CRANE.-A power operated machine for lifting or lowering a load and moving it horizontally which utilizes wire rope and in which the hoisting mechanism is an integral part of the machine.

2.20 CRAWLER CRANE.-A crane consisting of a rotating superstructure with power plant, operating machinery and boom, mounted on a base, equipped with crawler treads for travel.

2.21 DERRICK.-An apparatus consisting of a mast or equivalent members held at the top by guys or braces, with or without a boom, for use with a hoisting mechanism and operating rope, for lifting or lowering a load and moving it horizontally.

2.21.1 A-FRAME DERRICK.-A derrick in which the boom is hinged from a cross member between the bottom ends of two upright members spread apart at the lower ends and joined at the top; the boom point secured to this junction of the side members, and the side members are braced or guyed from the junction point.

2.21.2 BASKET DERRICK.-A derrick without a boom, similar to a gin pole with its base supported by ropes attached to corner posts or other parts of the structure. The base is at a lower elevation than its supports. The location of the base of a basket derrick can be changed by varying the length of the rope supports. The top of the pole is secured with multiple reeved guys to position the top of the pole to the desired location by varying the length of the upper guy lines. The load is raised and lowered by ropes through a sheave or block secured to the top of the pole.

2.21.3 BREAST DERRICK-A derrick without a boom. The mast consists of two side members spread farther apart at the base than at the top and tied together at top and bottom by rigid members. The mast is prevented from tipping forward by guys connected to its top. The load is raised and lowered by ropes through a sheave or block secured to the top crosspiece.

2.21.4 CHICAGO BOOM DERRICK.-A boom which is attached to a structure, an outside upright member of the structure serving as the mast, and the boom being stepped in a fixed socket clamped to the upright. The derrick is complete with load, boom and boom point swing line falls.

.**21.5 GIN POLE 2 DERRICK**-A derrick without a boom. Its guys are so arranged from its top to permit leaning the mast in any direction. The load is raised and lowered by ropes reeved through sheaves or blocks at the top of the mast.

2.21.6 GUY DERRICK.-A fixed derrick consisting of a mast capable of being rotated, supported in a vertical position by guys, and a boom whose bottom end is hinged or pivoted to move in a vertical plane with a reeved rope between the head of the mast and the boom point for raising and lowering the boom, and a reeved rope from the boom point for raising and lowering the load.

2.21.7 SHEARLEG DERRICK-A derrick without a boom. The mast, wide at the bottom and narrow at the top, is hinged at the bottom and has its top secured by a multiple reeved guy to permit handling loads at various radii by means of load tackle suspended from the mast top.

2.21.8 STIFFLEG DERRICK-A derrick similar to a guy derrick except that the mast is supported or held in place by two or more stiff members, called stifflegs, which are capable of resisting either tensile or compressive forces. Sills are generally provided to connect the lower ends of the stifflegs to the foot of the mast.

2.22 DRUM.-The cylindrical members around which ropes are wound for raising and lowering the load or boom.

2.23 DYNAMIC (loading).-Loads introduced into the machine or its components by forces in motion.

2.23.1 ENGINEER.-The word engineer as used in these regulations shall mean a licensed professional engineer except that the certifications for matters relating to crane design may be made by an engineer licensed by any state or foreign jurisdiction or upon proof, to the satisfaction of the commissioner, of his professional competence.

2.23.2 FOLDING BOOM.-A boom constructed of hinged sections which is articulated in a folding manner and may be folded for storage or transit.

2.24 GANTRY(A-Frame)-A structural frame, extending above the superstructure of a mobile crane, to which the boom supports ropes are reeved.

2.25 GUDGEON PIN.-A pin connecting the mast cap to the mast, allowing rotation of the mast.

2.26 GUY.-A rope used to steady or secure the mast or other members in the desired position.

2.26.1. HOISTING MACHINE-A power operated machine used for lifting or lowering a load, utilizing a drum and wire rope, excluding elevators. This shall include but not be limited to a crane, derrick, and cableway.

2.26.2 HYDRAULIC BOOM.-A boom which is operated by means of a hydraulic system.

2.27 JIB.-An extension attached to the boom point to provide added boom length for lifting specified loads. This jib may be in line with the boom or offset to various angles.

2.27.1 LAY.-That distance measured along a cable in which one strand makes a complete revolution around the cable axis.

2.28 LOAD (working).-The external load, in pounds, applied to the crane or derrick, including the weight of auxiliary load attaching equipment such as load blocks, shackles, and slings.

2.29 LOAD BLOCK (upper).-The assembly of hook or shackle, swivel, sheaves, pins, and frame suspended from the boom point.

2.30 LOAD BLOCK (lower).-The assembly of hook or shackle, swivel, sheaves, pins and frame suspended by the hoisting ropes.

2.31 LOAD HOIST.-A hoist drum and rope reeving system used for hoisting and lowering loads.

2.32 LOAD RATINGS.-Maximum loads that may be lifted by a crane or derrick at various angles and positions as approved by the department.

2.33 MAST.-The upright member of a derrick.

2.33.1 MOBILE CRANE.-A crawler crane; a truck crane; or a wheel mounted crane.

2.34 OUTRIGGERS.-Extendable or fixed metal arms, attached to the mounting base, which rests on supports at the outer ends.

2.35 REEVING.-A rope system in which the rope travels around drums and sheaves.

2.36 ROPE.-Refers to wire rope unless otherwise specified.

2.37 SIDE LOADING.-A load applied at an angle to the vertical plane of the boom.

2.38 SILL.-A member connecting the foot block and stiffleg or a member connecting the lower ends of a double member mast.

2.39 STANDING (GUY) ROPE.-A supporting rope which maintains a constant distance between the points of attachment to the two components connected by the rope.

2.40 STRUCTURAL COMPETENCE.-The ability of the machine and its component to withstand the stresses imposed by applied loads.

2.41 SUPERSTRUCTURE. The rotating upper frame

structure of the machine and the operating machinery mounted thereon.

2.42 SWING. Rotation of the superstructure for movement of loads in a horizontal direction about the axis of rotation.

2.43 SWING MECHANISM. The machinery involved in providing rotation of the superstructure.

2.44 TACKLE. An assembly of ropes and sheaves arranged for hoisting and pulling.

2.44.1 TELESCOPIC BOOM.A boom constructed of sections of diminishing cross sections in which the sections fit within each other. The boom may be extended in a manner similar to a telescope.

2.44.2 TOWER CRANE.-A crane in which a boom, swinging jib or other structural member is mounted upon a vertical mast or tower.

2.45 TRANSIT.-The moving or transporting of a crane from one job site to another.

2.46 TRAVEL.-The function of the machine moving from one location to another, on a job site.

2.47 TRAVEL MECHANISM.-The machinery involved in providing travel power.

2.48 TRUCK CRANE.-A crane consisting of a rotating superstructure with power plant, operating machinery and boom, mounted on an automotive truck equipped with a power plant for travel.

2.48.1 TRUCK MOUNTED TOWER CRANE.-A tower crane which is mounted on a truck or similar carrier for travel or transit.

2.49 WHEEL BASE.-Distance between centers of front and rear axles. For a multiple axle assembly the axle center wheel base measurement is taken as the midpoint of the assembly.

2.50 WHEEL MOUNTED CRANE (wagon crane).-A crane consisting of a rotating superstructure with power plant, operating machinery and boom, mounted on a base or platform equipped with axles and rubber tired wheels for travel. The base is usually propelled by the engine in the superstructure, but it may be equipped with a separate engine controlled from the superstructure. Its function is to hoist and swing loads at various radii.

2.51 WHIPLINE (auxiliary hoist).-A separate hoist rope system of lighter load capacity and higher speed than provided by the main hoist.

2.52 WINCH HEAD.-A power driven spool for handling of loads by means of friction between fiber or wire rope and spool.

3.0 Filing Applications-for Approval and Operation of Cranes and Derricks.-

* 3.1.1 The following information shall be submitted by an engineer:

1. Design calculations for:

(a) Boom or mast
(b) Jib or extensions
(c) Gantries
(d) Counterweight supports and attachments
(e) Rope
(f) Overturning stability

Only items (a), (b) and (e) of this subparagraph shall apply to derricks.

2. Load test reports where required under this reference standard.

3. A material specification statement certifying the type of steel used in the construction of items (a) through (e) of subparagraph one above.

4. A list of standards used in design and testing.

5. The requirements of subparagraphs one through four above shall be waived for cranes where such information is not available, provided that the equipment satisfies the load test requirements of section 7.0 of this reference standard, which shall apply to the following categories:

(a) Cranes which had a certificate of inspection on or after January 1, 1965.

(b) Cranes manufactured on or April 1, 1962 and prior to April 1, 1970 provided that:

(1) The application is filed with the department of buildings and a certificate of approval is obtained within two years after the enactment of this local law, and

(2) Title to the crane has been in name of the applicant since December 31, 1971.

6. Where cranes manufactured after April 1, 1970 have been tested pursuant to subdivision 6.1 of this reference standard, the requirements of paragraph 3.1.1 above shall be waived, provided that:

(a) The tests are monitored and certified by a competent individual or group, other than the manufacturer, acceptable to the commissioner, or

(b) At the discretion of the commissioner, the tests are monitored and certified by the department, or

(c) In lieu of the monitoring and certification of the tests as provided in items (a) and (b) above, the commissioner shall require design calculations for those items in paragraph 3.1.1 as he shall deem necessary to supplement the tests and reference standard RS 10-5 need not apply.

Local Law 50-1973

* **4.0 Design of Boom and Other Structural Members.-**The boom shall be designed as a beam column, subject simultaneously to axial force, torsion and bending. Stresses induced in the boom by its movement and due to wind during normal operation shall be considered. Stresses of the boom or other structural members enumerated in 1 of 3.1.1 shall not exceed those permitted by reference standard RS 10-5 for mobile cranes with hydraulic booms, for derricks and for tower and climber cranes.

Local Law 50-1973

* **5.0 Use of Special Steels.-**All steel used in the

construction of a crane or derrick not specifically accepted for use by the New York City Building Code or an appropriate reference standard thereof, must be approved by the commissioner.
Local Law 50-1973

* **6.0 Load Tests for New Mobile Cranes.-**
6.1 A prototype of each mobile crane, except those with hydraulic booms, manufactured after April 1, 1970 shall be tested for strength and stability in accordance with ANSI B30.5-1968 of the American National Standard Safety Code for Crawler Locomotive and Truck Cranes and in compliance with SAE J987 and SAE J765.
6.2 For mobile cranes with hydraulic booms, a prototype shall be tested in accordance with SAE J765.
6.3 Prior approval of the testing program shall be obtained from the department before performing any load tests after the effective date of this section. The department shall be notified in writing, at least one week in advance, of the date and location of such testing.

7.0 Load Tests for Other Mobile Cranes.-
* 7.1 Mobile cranes which comply with the provisions of 5 of 3.1.1 for which the information specified in 1 and 3 of 3.1.1. is not available, shall undergo a load test as follows:
1. Maximum load used shall not exceed 20,000 pounds.
2. The crane shall be tested at no more than two different radii determined by the commissioner to determine its compliance with manufacturer's load rated chart as required pursuant to these regulations. Upon satisfaction of this test requirement, the crane may be operated to the capacities represented on the chart.
Local Law 50-1973
** 3. A crane tested prior to July 1, 1972 shall be deemed to comply with the requirements of subdivision 13.1 of this standard, provided that the load ratings established by such tests are no greater than eighty (80%) percent of the test loads and in no case greater than those indicated on the manufacturer's load rating chart.
*****731-71 BCR; 454-71 BCR***

8.0 Certificate of On-Site Inspection.-
8.1 Use of cranes and derricks at job sites. -
8.1.1 In order to operate a crane or derrick at a job site, a certificate of on-site inspection is required as stipulated in C26-1909.4(d). The owner of the premises, building or structure, or his designated representative, shall file an application in quadruplicate at the department office in the borough where the premises is located. Such application shall be accompanied by plans showing proposed locations of the crane or derrick, pertinent features of the site such as assumed soil bearing values, ground elevations and slopes, vaults or other subsurface structures, supporting platforms or structures, and the swing of the crane or derrick. Also, a document shall be submitted, signed by a licensed engineer or registered architect which shall include the following information where the crane or derrick is to be supported by soil:
(a) That he has inspected the soil at the proposed location or locations of the crane or derrick;
(b) His estimate of the soil bearing value;
(c) That he has explored the existence of any sheeting or retaining walls supporting soil adjoining any excavation which may be affected and certifies as to its adequacy;
(d) If the crane or derrick is to be on the street, that he has explored the existence of vaults or other subsurface structures which could impair the bearing value of the street or sidewalk;
(e) That the load imposed upon the soil by the crane or derrick including supporting platform, does not exceed such bearing value under any condition of loading.
8.1.2 Where a crane not exceeding 160 feet in height, including jibs and any other extensions to the boom is to be used for a period not exceeding 24 hours, or a crane not exceeding 50 feet in height, including jibs and any other extensions to the boom with a maximum rated capacity of 20 tons, is to be positioned on the roadway or sidewalk, a certificate of on-site inspection shall be required. However, the requirements relating to plans and a document of a licensed professional engineer or registered architect enumerated in 8.1.1 of this reference standard shall not apply nor shall the three regular working day provisions of section C26-1909.4(d) be applicable under the following conditions:
(1) That a prototype approval has been obtained showing the means required to distribute the weight of the crane and the maximum working loads.
(2) A statement from the owner of the structure, building or premises or his authorized agent that he visited the site and that there are no excavations or retaining walls and that no vaults or subsurface construction exists at the site.
8.1.3 A certificate of on-site inspection shall not be required under the following conditions:
* 8.1.3.1 For a crane not exceeding 160 feet in height including jibs and any other extensions to the boom, which is to be used for a period not exceeding 48 hours and operating entirely within the property lines and in such locations which are at least a boom length, including jibs and any extensions thereof, distant from all lot lines**.** ****Local Law 50-1973***
8.1.3.2 For service cranes and clamshells operated entirely within the property lines and within such locations which do not involve the moving of any loads over the roadway or sidewalk. This exemption shall apply only to cranes with a boom length, including jibs and any extension thereof, not exceeding 110 feet.
* 8.1.3.3 For the use of cranes as provided for in 8.1.3.1

and 8.1.3.2, notice of the operation of the crane at the job site shall be given to the division of cranes and derricks, department of buildings, by telephone and confirmed in writing. It shall be the responsibility of an appointed person to provide firm and uniform footing and, when necessary, provide substantial timbers, cribbing or other structural members sufficient to distribute the load so as not to exceed the safe bearing capacity of the underlying material.

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8.2 Cranes or Derricks Supported by a Building or Structure.-

8.2.1 Where the crane or derrick is supported by a building or a structure, the statement by the licensed engineer or registered architect referred to in 8.1.1 shall include the means of supporting and bracing the equipment. The swing of the crane or derrick shall be shown on the plans to insure clearance during operation. Computations shall be submitted with the application showing all reactions imposed on the structure by the crane or derrick, including those due to impact and wind. Such computations shall verify that the stability of the building or structure will not be impaired when the crane or derrick is in operation and that no structural members will be overstressed due to forces induced by the crane or derrick.

8.2.2 Concrete Structures.-If the structure is a concrete structure, test reports of the compression strength of the concrete shall be submitted to insure that the concrete supports of the crane or derrick have developed sufficient strength to support the crane or derrick before it is installed.

The means for establishing concrete strength before imposing crane or derrick loads upon the structure shall be indicated on the application.

8.2.3 All anchorages for cranes and derricks shall be approved by an appointed person.

8.3 Use of Pile Drivers and Clamshells.-

8.3.1 A certificate of on-site inspection shall not be required for pile drivers or clamshells operating entirely within the lot lines under the following conditions:

8.3.1.1 Where pile driving equipment is designed or supported on a platform so that the soil bearing pressure does not exceed 500 pounds per square foot, a certificate of on-site inspection shall not be required.

8.3.1.2 Where clamshells are operating on construction sites and are at least the depth of excavation height from the edge of the excavation and where the soil bearing pressure does not exceed 500 lbs. per square foot, a certificate of on-site inspection shall not be required.

8.3.1.3 Where the pressure on the soil is in excess of 500 pounds per square foot but does not exceed 2,500 pounds per square foot, a pile driver or clamshell may be operated without a certificate of on-site inspection under the following conditions:

(1) That borings have been filed with the department in the construction application under which the work is being performed, and

(2) An amendment is filed to such application by an engineer or architect certifying that on the basis of the borings, the soil is adequate to support the load to be imposed thereon by the subject equipment.

8.4 The Requirements of 8.1.1, 8.2 and Sections C26-1909.4(d) Shall also Apply to Cableways.-

**8.5 Notwithstanding the provisions of 8.0 through 8.4 where a crane is operated on the sidewalk or roadway, a permit from the department of highways shall be obtained and the pressure on such surface shall not exceed 3500 pounds per square foot. The pressure shall be distributed on the roadway by means of timber platforms extending not less than twelve (12) inches beyond the base of the outriggers on all sides and sufficiently thick to uniformly distribute the pressure as required above of all the loads including the weight of the crane. The timber mats shall have a minimum thickness of two (2) inches. All cranes equipped with steel tracks shall be supported by timber platforms not less than six inches thick and covering the entire base of the crane.

***** Local Law 73-1969; 479-77 BCR***

9.0 Unsafe Hoisting Machines.-

9.1 When it is found that equipment is dangerous or unsafe a notice or order to stop work may be issued by the commissioner, or his authorized representative. Such notice or order may be given to the owner or lessee of the equipment involved, or to the agent of any of them, or to the person or persons executing the work or operating the equipment in writing. If the operation of the hoisting machine is not discontinued, the inspector shall report same to his superior and an engineer shall be sent to reinspect. Upon confirmation of the unsafe condition by the engineer, the hoisting machine shall be red tagged. All persons shall be prohibited from using the said equipment until the danger is removed or the unsafe condition is rectified. An unsafe notice shall not be removed from the equipment, except by an authorized inspector or representative of the department of buildings.

10.0 Annual Renewal of Certificate of Operation.-

Application for renewal of a certificate of operation, as stipulated in C26-1909.4 (c), shall be accompanied by inspection and maintenance records in accordance with 15.1 and 18.1. Upon approval of the application, a new certificate of operation shall be issued after a satisfactory inspection by a department inspector.

11.0 Welded Construction.-

11.1 Welding of structural members of cranes and derricks enumerated in 1 and 2 of 3.1.1 shall conform to the recommended practices of the American Welding

Society as outlined in specifications for welded highway and railway bridges AWS D2.0-66 or other recognized standards or pursuant to RS 19-2.

11.2 For welding of steels not covered by AWS D2.0-66, for all cranes manufactured after April 1, 1970 and all welding performed after that date shall conform to recognized standards.

11.3 The commissioner may require such welds to be tested as he deems necessary.

12.0 Load Ratings and Stability of Cranes and Derricks.-

12.1 Load Ratings-Where Stability Governs Lifting Performance (Mobile Cranes).-

12.1.1 Load ratings for mobile cranes manufactured after April 1, 1970 shall be established by tests performed in accordance with crane load stability test code, SAE J765, April, 1961.

*12.1.2 The margin of stability for determination of load ratings, with booms of stipulated lengths at stipulated working radii for the various types of crane mountings shall be established at 75 percent of the load which will produce a condition of tipping or balance with the boom in the least stable direction relative to the mounting where overturning stability governs the lifting performance. The percentage may be increased to 85 percent for truck cranes which are provided with the safety devices specified in 19.1.1.

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13.0 Load Ratings Where Structural Competence Governs Lifting Performance.-

13.1 Load rating at some radii for mobile cranes and load ratings for climber, tower cranes and derricks are governed by structural competence. Therefore, the limitation on crane loading must be such that no structural member is overstressed, and load rating charts shall be subject to this limitation.

13.2 Load Rating Chart.-

13.2.1 Mobile cranes.-A durable angle and load chart with clearly legible letters and figures shall be provided with each mobile crane and securely fixed to the crane cab in a location easily visible to the operator while seated at his control station. The chart shall contain a full and complete range of crane load ratings, as approved by the department, at all stated operating radii and boom angles, and for all permissible boom lengths, job lengths and angles, also alternate ratings for use and non-use of optional equipment on the mobile crane, such as outriggers and counterweights which affect ratings. The chart shall also contain essential precautionary or warning notes relative to limitations on equipment and operating procedures, including indication of the least stable position. In addition, the chart shall include the following statement:

"Load ratings shown on this chart makes no allowance for such factors as the effect of freely suspended loads, wind, ground conditions, inflation of rubber tires and operating speeds. The operator therefore shall reduce load ratings in order to take these conditions into account."

13.2.2 Each mobile crane, excluding those used with pile driving or dragline equipment, with a maximum rated capacity exceeding one ton shall be provided with a boom angle indicator that shall make the boom angle in degrees clearly visible to the operator at all times. Such crane, except when used with a clamshell, shall be equipped with safety devices as stipulated in 19.1(a), (c), (d) and (e).

13.2.3 Tower and climber cranes.-A substantial, durable and clearly legible rating chart shall be provided with each tower and climber crane and securely affixed in the cab. The chart shall include load ratings approved by the department for specific lengths of components, counterweights, swing, and radii.

14.0 Backward Stability of Mobile Cranes.-The backward stability of a mobile crane is its ability to resist overturning in the backward direction while in the unloaded condition. The degree of resistance to backward overturning is reflected in the margin of backward stability.

14.1 The general conditions applicable to mobile cranes for determination of backward stability margin are as follows:

14.1.1 Crane to be equipped for normal crane operation with shortest recommended boom.

14.1.2 Boom positioned at minimum recommended radius.

14.1.3 Crane to be unloaded.

14.1.4 Outriggers free of the bearing surface unless specified by manufacturer for stationary use.

14.1.4 Crane to be standing on firm supporting surface level within one percent grade.

14.1.6 All fuel tanks at least half full.

14.2 The following are minimum acceptable backward stability conditions for the various types of mobile cranes:

14.2.1 Crawler cranes.-The horizontal distance between the center of gravity of the crane and the axis of rotation shall not exceed 70% of the radial distance from the axis of rotation to the backward tipping fulcrum in the least stable direction.

14.2.2 Truck and wheel mounted cranes.-

(a) With the longitudinal axis of the rotating superstructure of the crane at 90 degrees to the longitudinal axis of the carrier, the total load on all wheels on the side of the carrier under the boom shall not be less than 15 percent of the total weight of the crane.

(b) With the longitudinal axis of the rotating superstructure of the crane in line with the longitudinal axis of the carrier, in either direction, the total load on all wheels under the lighter loaded end of the carrier shall not be less than 15 percent of the total weight of the crane.

15.0 Inspection Required by Owner for Cranes and Derricks.-

15.1 Certification and inspections required.-The owner of a crane or derrick when applying for a certificate of approval in accordance with 3.0 shall certify that all applicable regulations regarding inspection and maintenance will be complied with. All inspections required by the owner shall be performed only by appointed personnel. The inspections shall be performed to provide information requested in a department supplied chart and all deficiencies shall be corrected. No record of information not required by such chart shall be required to be maintained in writing.

15.2 Inspection classification.-Inspection procedure for cranes and derricks in regular service is divided into two general classifications based upon the intervals at which inspection should be performed. The intervals in turn are dependent upon the nature of the critical components of the crane or derrick and the degrees of their exposure to wear, deterioration or malfunction. The two general classifications are herein designated as "frequent" and "periodic" with respective intervals between inspections as defined below:

15.2.1 Frequent inspection.-Daily to monthly intervals.

15.2.2 Periodic inspection.-1 to 12 month intervals or as specifically recommended by the manufacturer.

*__15.3 Frequent inspection.-__Items such as the following shall be inspected for defects at intervals as defined in 15.2.1 or as specifically indicated, including observation during operation for any defects which might appear between regular inspections. Any defects revealed by inspection shall be corrected. Where such defects constitute a safety hazard, the crane or derrick shall not be operated until such defects are corrected.

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15.3.1 All control mechanisms for maladjustment interfering with proper operation.-Daily.

15.3.2 All control mechanisms for excessive wear of components and contamination by lubricants or other foreign matter.

15.3.3 All safety devices for malfunction.

15.3.4 Deterioration or leakage in air or hydraulic systems.-Daily

*15.3.5 Crane or derrick hooks with deformations or cracks.-Refer to 17.3.3(c).

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15.3.6 Rope reeving for non-compliance with crane or derrick manufacturer's recommendations.

15.3.7 Electrical apparatus for malfunctioning, signs of excessive deterioration, dirt, moisture accumulation, weatherproofing and grounding.

15.3.8 Tension in derrick guys.-Daily.

15.3.9 Plumb of derrick mast.

15.3.10 Hoist brakes, clutches and operating levers.-Check daily for proper functioning before beginning operations.

*__15.4 Periodic inspections of cranes and derricks__.-Complete inspections of the crane or derrick shall be performed at intervals as generally defined in 15.2.2, depending upon its activity, severity of service, and environment, or as required by 15.5.1 or 15.5.2. These inspections shall include the requirements of 15.0, and in addition, items specifically indicated below. Any defects revealed by inspection shall be corrected. Where such defects constitute a safety hazard the crane or derrick shall not be operated until such defects are corrected.

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15.4.1 Deformed, cracked or corroded members in the crane or derrick structure and boom.

15.4.2 Loose bolts or rivets.

15.4.3 Cracked or worn sheaves and drums.

15.4.4 Worn, cracked or distorted parts such as pins, bearings, shafts, gears, rollers and locking devices.

15.4.5 Excessive wear on brake and clutch system parts, linings, pawls and ratchets.

15.4.6 Load, boom angle and other indicators over their full range, for any significant inaccuracies.

15.4.7 Gasoline, diesel, electric or other power plants for improper performance or non-compliance with safety requirements.

15.4.8 Excessive wear of chain drive sprockets and excessive chain stretch.

15.4.9 Crane or derrick hooks.-Magnetic particle or other suitable crack detecting inspection should be performed at least once each year by an inspection agency retained by the owner and approved by the department. Certified inspection reports are to be made available to the department upon request.

15.4.10 Travel steering, braking and locking devices, for malfunction.

15.4.11 Excessively worn or damaged tires.

15.4.12 Derrick gudgeon pin for cracks, wear and distortion each time the derrick is to be erected.

15.4.13 Foundation or supports shall be inspected for continued ability to sustain the imposed loads.

15.5 Cranes or derricks not in regular use.-

15.5.1 A crane or derrick which has been idle for a period of one month or more, but less than six months, shall be given an inspection by the owner conforming with requirements of 15.3 and 18.1.3 before an application for a certificate of on-site inspection in accordance with C26-1909.4(d) is submitted to the department.

15.5.2 A crane which has been idle for a period of over six months shall be given a complete inspection by the owner conforming with requirements of 15.3, 15.4 and 18.13 before an application for a certificate of on-site inspection in accordance with C26-1909.4(d) is submitted to the department.

16.0 Testing Required for Cranes and Derricks, Manufactured After April 1, 1970, by Manufacturer

or Owner.-

16.1 Operational test.-

16.1.1 In addition to prototype tests and quality control measures, each new production crane and derrick shall be tested by the manufacturer to the extent necessary to insure compliance with the operational requirements of this section, including functions such as the following:

(a) Load hoisting and lowering mechanisms.
(b) Boom hoisting and lowering mechanisms.
(c) Swinging mechanism.
(d) Traveling mechanism.
(e) Safety devices.

16.1.2 Where the complete production crane or derrick is not supplied by one manufacturer such tests shall be conducted at final assembly.

6.1.3 Operational test and production test results certified by the manufacturer or a licensed professional engineer shall be made available to the department with each application for a certificate of approval for a crane or derrick, in accordance with 3.0.

16.1.4 For all cranes and derricks, where electrically powered, the trip setting of hoist limit switches shall be determined by tests with an empty hook traveling in increasing speeds to the maximum speed. The activating mechanism of the limit switch shall be located so that it will trip the switch under all conditions in sufficient time to prevent contact of the hook or load block with any part of the derrick or crane.

17.0 Maintenance of Cranes and Derricks.-

17.1 Preventive maintenance.-

17.1.1 A preventive maintenance program based on the crane or derrick manufacturer's recommendations shall be established. Dated and detailed records shall be readily available to the department.

17.1.2 It is recommended that replacement parts be obtained from the original equipment manufacturer.

17.2 Maintenance procedure.-

17.2.1 Before adjustments and repairs are started on a crane or derrick, the following precautions shall be taken as applicable:

(a) Crane or derrick placed or arranged where it will cause the least interference with other equipment or operations in the area.
(b) All controls at the "off" positions.
(c) Starting means rendered inoperative.
(d) Warning or "out of order" signs placed on the crane or derrick and hoist.
(e) Power plant stopped or disconnected at take-off.
(f) Boom lowered to the ground if possible or otherwise secured against dropping.
(g) Lower load block lowered to the ground or otherwise secured against dropping.

17.2.2 After adjustment and repairs have been made, the crane or derrick shall not be operated until all guards have been reinstalled, safety devices reactivated and maintenance equipment removed.

17.3 Adjustments and Repairs.-

*17.3.1 Any unsafe conditions disclosed by the inspection requirements of 15.0 shall be corrected before operation of the crane or derrick is resumed. Adjustments and repairs shall be done only by competent personnel.

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17.3.2 Adjustments shall be maintained to assure correct functioning of components. The following are examples:

(a) All functional operating mechanisms.
(b) Safety devices.
(c) Control systems.
(d) Power plants.
(e) Tie downs or anchorages.
(f) Signal system.
(g) Guys.

17.33 Repairs or replacements shall be provided promptly as needed for safe operation. The following are examples:

(a) All critical parts of functional operating mechanisms which are cracked, broken, corroded, bent or excessively worn.

(b) All critical parts of the crane or derrick structure which are cracked, bent, broken or excessively corroded.

* (c) Crane or derrick hooks showing defects described in 15.3.5 shall be discarded. Repairs by welding or reshaping are not acceptable unless written approval of the department is obtained.

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(d) Pitted or burned electrical contacts should be corrected only by replacement and in sets. Controller parts should be lubricated as recommended by the manufacturer.

17.3.4 All replacement parts or repairs shall have at least the original safety factor and be in accordance with the specifications of the manufacturer. Approval of the department shall be required for the replacement or repair of main structural members as enumerated in 1 and 2 of 3.1.1 for which no fee will be required.

17.4 Lubrication of Cranes and Derricks.-

17.4.1 All moving parts of the crane or derrick and hoist for which lubrication is specified, including rope and chain, shall be regularly lubricated. Lubricating systems shall be checked for proper delivery of lubricant. Particular care should be taken to follow manufacturer's recommendations as to point and frequency of lubrication, maintenance of lubricant levels and types of lubricants to be used. Lubrication shall be performed under the supervision of the crane operator, oiler or maintenance engineer.

*17.4.2 Machinery shall be stationary while lubricants are being applied and protection provided as called for in 17.2.1(b) through 17.2.1(e) inclusive, unless such machinery is equipped for automatic lubrication.

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18.0 Rope Inspection, Replacement and Maintenance by Owner for Cranes and Derricks.-

18.1 Inspection.-

*18.1.1 All ropes in continuous service should be visually inspected once every working day. A thorough inspection of all ropes in use shall be made at least once a month. All inspections shall be performed by an appointed person. Any deterioration resulting in measurable loss of original strength, such as described below shall be carefully noted and determination made as to whether further use of the rope would constitute a safety hazard:

(a) Reduction of rope diameter below nominal diameter due to loss of core support, internal or external corrosion or wear of outside wires.

(b) A number of broken outside wires and the degree of distribution of concentration of such broken wires.

(c) Worn outside wires, "birdcaging," or kinks.

(d) Corroded or broken wires at end connections.

(e) Corroded, cracked, bent, worn or improperly applied end connections.

(f) Severe kinking, crushing, cutting or unstranding.

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18.1.2 Heavy wear and/or broken wires may occur in sections in contact with equalizer sheaves, or other sheaves where rope travel is limited, or with saddles. Particular care shall be taken to inspect ropes at these locations.

18.1.3 All rope which has been idle for a period of a month or more due to shutdown or storage of the crane or derrick on which it is installed shall be given a thorough inspection before it is placed in service. This inspection shall be for all types of deterioration and shall be performed by an appointed person whose approval shall be required for further use of the rope.

18.1.4 Particular care shall be taken in the inspection of non-rotating rope.

18.2 Rope Replacement.-

18.2.1 Safety in regard to rope replacement shall depend upon the use of good judgment by an appointed person in evaluating strength in used rope.

18.2.2 Conditions such as the following should be sufficient reason for replacement:

(a) In running ropes, six randomly distributed broken wires in one lay or three broken wires in one strand in one lay.

(b) Wear of one-third the original diameter of outside individual wires.

(c) Kinking, crushing, bird caging or any other damage resulting in distortion of the rope structure.

(d) Evidence of any heat damage from any cause.

(e) Reductions from nominal diameter of more than 3/64 inch for diameters to and including 3/4 inch, 1/16 inch for diameter 7/8 inch to 1 1/8 inches inclusive, 3/32 inch for diameters 1 1/4 inches to 1 1/2 inches inclusive.

(f) In standing ropes, more than two broken wires in one lay in sections beyond and connections or more than one broken wire at an end connection.

(g) In standing or running ropes noncompliance with section C26-1909.2(b), (c) or (d).

18.2.3 Discarded rope should not be used for slings.

18.3 Rope Maintenance.-

18.3.1 Rope shall be stored to prevent damage or deterioration.

18.3.2 Unreeling or uncoiling of rope shall be done as recommended by the rope manufacturer and with extreme care to avoid kinking or inducing a twist.

18.3.3 Before cutting a rope, seizings shall be placed on each side of the place where the rope is to be cut to prevent unlaying of the strands. On preformed rope, one seizing on each side of the cut is required. On non-preformed ropes of 7/8 inch diameter or smaller, two seizings on each side of the cut are required, and for non-preformed rope of one inch diameter or larger, three seizings on each side of the cut are required.

18.3.4 During installation care shall be observed to avoid dragging of the rope in dirt or around objects which will scrape, nick, crush, or induce sharp bends in it.

18.3.5 Rope should be maintained in a well lubricated condition. It is important that lubricant applied as part of a maintenance program shall be compatible with the original lubricant and to this end the rope manufacturer should be consulted. Those sections of rope which are located over sheaves or otherwise hidden during inspection and maintenance procedures require special attention when lubricating rope. The object of rope lubrication is to reduce internal friction and to prevent corrosion. Periodic field lubrication is particularly important for non-rotating rope.

* **19.0 Safety Devices Required.-**

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* **19.1** All cranes or derricks having a maximum rated capacity exceeding one ton shall be equipped with safety devices as provided herein, except equipment used exclusively for pile driving, clamshell and dragline used for excavation. These safety devices shall be acceptable to the commissioner.

*19.1.1 All mobile cranes, including truck mounted tower cranes, shall be equipped with:

(a) A warning light and an acoustical signal located at the operator's position or cab to indicate overload and shall consist of either of the following devices:

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(1) A load measuring device in combination with a load radius or boom angle measuring device with presettable load and angle or radius limits to activate the warning signals and to be used in conjunction with the approved load radius chart.

(2) A load and radius measuring device pre-programmed to continuously relate the measured data to the load radius chart as a direct reading of load or

percentage of rated load.
(b) Where electrically powered, a deadman control on control levers in the cab or crane operator's station.
(c) An effective audible warning and operating signal on the outside of the cab.
(d) Boom stops and boom hoist safety shutoffs. However, boom stops shall not be required for telescoping booms.
(e) An indicator for leveling the crane.
19.1.2 All tower cranes and climber cranes excluding truck-mounted tower cranes, shall have the following safety devices:
(a) Warning light shall be activated at 100% allowable overturning moment.
(b) Acoustic signal shall sound at 105% allowable overturning moment.
(c) Automatic stop if 110% allowable overturning moment is reached.
(d) Automatic stop if load exceeds maximum rated load in high gear.
(e) Automatic stop if load exceeds maximum rated load in intermediate gear.
(f) Automatic stop if load exceeds maximum rated load in low gear.
(g) Predeceleration before top position of the hook.
(h) Limit switch for top position of the hook.
(i) Predeceleration before low position of the hook.
(j) Limit switch for the trolley traveling out.
(k) Limit switch for the trolley traveling in.
(l) Acceleration limitation on the hoist movement.
(m) Acceleration limitation on the swing movement.
(n) Acceleration limitation on the trolley movement.
(o) Deadman control on both joy sticks in box.
*19.1.3 Safety devices for derricks shall be acceptable to the commissioner and shall be installed within six months after said devices are accepted. However, where electrically powered, a deadman control on control levers shall be installed prior to applying for a cerificate pursuant to section C26-1909.4.
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*19.1.4 Any safety device previously approved by the board of standards and appeals shall be acceptable as meeting the requirements of the applicable subparagraphs of 19.1.1.
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20.0 Characteristic and Special Requirements for Mobile Cranes.-
20.1 Hoists, load and swing mechanisms.
20.1.1 Boom hoist.
(a) The boom hoist shall be capable of lifting the boom when the outer end is at the level of the surface on which the crane rest.
(b) The hoisting mechanism shall be provided with a suitable clutching or power engaging device permitting immediate starting or stopping of the boom drum motion. The hoisting mechanism also shall be provided with a self-setting safety brake, capable of supporting all rated loads, with recommended reeving.
(c) Brakes and clutches shall be arranged to be readily adjusted to compensate for wear and to maintain adequate tension in springs where used.
(d) The hoisting mechanism shall be provided with an auxiliary ratchet and pawl or other positive locking device for use as an added safety feature.
* (e) The hoist drum shall have sufficient rope capacity to operate the boom at all positions between the horizontal and the highest angle recommended by the manufacturer and submitted to the department of buildings for the appropiate reeving and rope size, and
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(1) At least two full wraps of rope shall remain on the drum when the boom point is lowered to the level of the crane supporting surface.
(2) The drum end of the rope shall be anchored by a clamp securely attached to the drum or a wedge socket arrangement approved by the crane or rope manufacturer and submitted to the department of buildings.
(f) The drum diameter shall be sufficient to provide a first layer rope pitch diameter of not less than 15 times the nominal diameter of the rope used.
20.1.2 Load hoist.-
(a) The load hoist assemblies shall have power and operational characteristics adequate to perform all load hoisting and lowering functions required in crane service when operated under conditions recommended by the manufacturer and submitted to the department of buildings.
(b) Where brakes and clutches are used to control the motion of the load hoist drums, they shall be of sufficient size and thermal capacity to control all rated crane loads with minimum accepted reeving.
* (c) Load hoist drums shall have sufficient rope capacity size and reeving to perform crane service within the range of boom lengths, operating radii and vertical lifts stipulated by the manufacturer and submitted to the department of buildings.
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* (d) No less than two full wraps of rope shall remain on the drum when the hook is in its extreme low position.
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* (e) The drum end of the rope shall be anchored by a clamp securely attached to the drum or by a wedge socket arrangement approved by the crane or rope manufacturer and submitted to the department of buildings.
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(f) Drums shall be provided with a means to prevent rope from jumping off the drum.
(g) The diameter of the load hoist drum shall be sufficient to provide a first layer rope pitch diameter of not less than 18 times the nominal diameter of the rope used.
(h) Positive means, controllable from the operator's station, shall be provided to hold the drum from rotating in the lowering direction and be capable of holding the

rate load indefinitely without further attention from the operator.

* (i) Drum rotation indicators shall be provided and located to afford easy sensing by the operator except when a crane is used exclusively with a clamshell or dragline for excavation purposes or for pile driving.

20.1.3 Load hoist brakes.-

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(a) When power-operated brakes having no continuous mechanical linkage between the actuating and braking means are used for controlling loads, an automatic means shall be provided to prevent the load from falling in event of loss of brake actuating power.

* (b) Foot-operated brake pedals shall be constructed so that the operator's feet will not easily slip off. Means for latching brake in the applied position shall be provided.

(c) Brakes and clutches shall be provided with adjustments where necessary to compensate for wear and to maintain adequate tension in springs where used.

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* 20.1.4 Optional power-controlled lowering.-A power-controlled lowering device may be provided to obtain precision lowering and to reduce demand on the load brake. Such device shall be capable of handling rated loads and speeds as specified by the manufacturer and submitted to the department of buildings.

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20.1.5 Swing control.-

(a) The swing mechanism shall be capable of smooth starts and stops with the varying degrees of acceleration and deceleration required in normal crane operation.

(b) A brake having adequate holding power in both directions shall be provided to prevent movement of the rotating superstructure, when desired under normal operation. The brake shall be capable of being set in the holding position and remaining so without attention on the part of the operator.

(c) A device for positively locking the rotating superstructure shall be provided. It shall be so constructed as to prevent accidental engagement or disengagement.

20.2 Travel controls.-

20.2.1 General.-

(a) On all mobile crane types except truck cranes the controls for the travel function shall be located at the operator's station in the crane cab.

(b) On truck cranes the main travel controls shall be located in the truck cab. Auxiliary travel controls may be provided in the crane cab.

20.2.2 Travel mechanism.-

(a) On crawler cranes, the travel and steering mechanism shall be arranged so that it is not possible for both crawlers to become disconnected simultaneously from the power train and to free wheel.

(b) On truck cranes, the carrier transmission shall have a gear-ratio pattern and adequate control to minimize stalling.

20.2.3 Travel brakes and locks.-

(a) On crawler cranes, brakes or other locking means shall be provided to hold the machinery stationary during working cycles on level grade or while the machine is standing on maximum grade recommended for travel. Such brakes or locks shall be arranged to remain in engagement in event of loss of operating power.

(b) On truck and wheel-mounted cranes, means shall be provided to control completely the crane carrier travel when descending maximum grades specified by the manufacturer under maximum loading conditions. Brakes shall be provided to bring the machine to a stop on level ground within a distance of 32 feet from a speed of 15 miles per hour. Where long or steep grades are to be negotiated, a retarder or similar device should be provided. Means shall be provided to hold the machine stationary on the maximum grade for travel recommended by the manufacturer.

20.3 Operating controls.-

20.3.1 General.-

(a) All controls used during the normal crane operating cycle shall be located within easy reach of the operator while seated at his station.

(b) Arrangement of controls shall be in accordance with applicable requirements of SAE recommended practice crane-shovel basic operating control arrangements, J983 as approved April 1967. Controls for load hoist, boom hoist, and swing clutches shall be provided with means for holding in neutral position, without the use of positive latches.

(c) Shielded panel lights shall be installed over controls.

20.3.2 Control forces and movements.-

(a) When the crane is operated within the ratings and reeving accepted by the department of buildings, controls shall meet the following requirements:

1-Forces required to operate shall not be greater than 35 pounds on hand levers nor greater than 50 pounds on foot pedals.

2-Travel distance on hand levers shall not be greater than 14 inches from the neutral position on two-way levers and not greater than 24 inches on one way levers. Travel distance on foot pedals shall not be greater than 10 inches.

20.3.3 Power plant controls.-Controls for operating the superstructure power plant shall be within easy reach of the operator and shall include:

(a) Means to start and stop.

(b) Means to control speed of internal combustion engines.

(c) Means for shifting selective transmission.

*20.3.4 Engine clutch.-All cranes with a direct mechanical drive to any crane function shall be provided with a clutch for disengaging power. The clutch control shall be within reach from the operator's position.

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20.4 Ropes and reeving accessories.-

20.4.1 Ropes.-

(a) The hoisting rope shall be of a construction

submitted to the department of buildings for crane service. Non-rotating rope shall not be used for boom hoist reeving nor for multiple part reeving.

(b) Socketing shall be done in a manner specified by the manufacturer of the assembly and submitted to the department of buildings.

(c) If a load is supported by more than one part of rope, the tension in the ropes shall be equalized.

(d) Whenever exposed to temperatures at which fiber cores would be damaged, ropes having an independent wire-rope or wire-strand core, or other temperature-damage-resistant core shall be used.

*(e) Replacement rope shall be the same size, grade and construction as the original rope furnished by the crane manufacturer and submitted to the department of buildings. Alternate replacement ropes may be used only if specifically recommended by a wire rope manufacturer or the crane manufacturer and submitted to the department of buildings.

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20.4.2 Rope safety factors.-

(a) For supporting rated loads (including boom suspensions):

1-The safety factor for live or running ropes that wind on drums or pass over sheaves shall be not less than 3.5.

2-The safety factor for boom pendants or standing ropes shall not be less than 3.0.

* (b) For supporting the boom and working attachments at recommended travel or transit positions and boom lengths, the safety factor shall be:

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1-For live or running ropes, not less than 3.5.

2-For boom pendants or standing ropes, not less than 3.0.

* (c) For supporting the boom under boom erection conditions, the safety factor shall be:

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1-For live or running ropes, not less than 3.0.

2-For boom pendants or standing ropes, not less than 2.5.

20.4.3 Reeving accessories.-

* (a) Eye splices shall be made in an approved manner and rope thimbles shall be used in the eye.

* (b) U-bolt clips shall have the U-bolt section on the dead or short-end, and the saddle on the live or long end of the rope. Spacing and number of all types of clips shall be in accordance with the clip manufacturer's recommendation and submitted to the department of buildings. Clips shall be drop-forged in all sizes manufactured commercially. When a newly installed rope has been in operation for one hour, all nuts on the clip bolts shall be retightened, and they shall be checked for tightness at frequent intervals thereafter.

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* (c) Swaged, compressed or wedge-socket fittings shall be applied as recommended by the rope or crane manufacturer or fitting manufacturer and submitted to the department of buildings.

20.4.4 Sheaves.-

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(a) Sheave grooves shall be smooth and free from surface defects which could cause rope damage. The cross sectional radius at the bottom of the groove shall be such as to form a close-fitting saddle for the size of rope used and the sides of the groove shall be tapered outwardly to facilitate entrance of the rope into the groove. Flange corners shall be rounded and the rims shall run true about the axis of rotation.

(b) Sheaves carrying ropes which may be momentarily unloaded shall be provided with close-fitting guards or other suitable devices to guide the rope back into the groove when the load is reapplied.

(c) The sheaves in the lower load block shall be equipped with close-fitting guards that will prevent ropes from becoming fouled when the block is lying on the ground with ropes loose.

(d) Means shall be provided to prevent chafing of the ropes.

(e) All sheave bearings shall be provided with means for lubrication unless permanently lubricated bearings are provided.

20.4.5 Sheave sizes.-

(a) Boom hoisting sheaves shall have pitch diameters of not less than 15 times the nominal diameter of the rope used.

(b) Load hoisting sheaves shall have pitch diameters not less than 18 times the nominal diameter of the rope used.

(c) Load block sheaves shall have pitch diameters not less than 16 times the nominal diameter of the rope used.

20.5 Crane cabs.-

20.5.1 Crane cab construction.-

(a) Insofar as practical, all cabs shall be constructed to enclose the superstructure machinery, brakes and the operator's station to provide protection from the weather.

* (b) All windows shall be of, safety glass or equivalent. Windows shall be provided in the front and on both sides of the cab or operators compartment for visibility forward and to either side. Visibility forward shall include a vertical range adequate to cover the boom point at all times. The front window may have a section which can be readily removed or held open if desired. If the section is of the type held in the open position, it shall be well secured to prevent accidental closing.

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(c) All cab doors whether of sliding or swinging type shall be adequately restrained from accidental opening or closing while traveling or operating the machine. The door adjacent to the operator, if of the swinging type, shall open outward and, if of the sliding type, shall slide rearward to open.

(d) A clear passageway shall be provided from the operator's station to an exit door on the operator's side.

(e) Principal walking surfaces in cabs shall be of anti-skid type.
(f) Outside platforms, if furnished, shall be provided with guard rails. Where platforms are too narrow to use guard rails, handholds shall be provided at convenient points above the platform.
20.5.2 Access to cab.-On all crawler, truck and wheel mounted cranes, suitable handholds and steps shall be provided to facilitate entrance to and exit from the operator's cab and the truck cab.
20.5.3 Access to cab roof.-Where access to the cab roof is necessary for rigging or service requirements, a ladder or steps shall be provided to give access thereto and the cab roof shall be capable of supporting, without permanent distortion, the weight of a 200 pound man.

21.0 Characteristics and Special Requirements for Derricks.-

21.1 Load ratings.-

* 21.1.1 Rated load marking.-

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(a) For derricks, a substantial, durable and clearly legible load rating chart shall be provided for each particular installation. The rating chart shall be securely affixed where it is visible to personnel responsible for the operation of, the equipment. The chart shall include but not be limited to the following data:

1-manufacturer's load ratings as approved by the department at corresponding ranges of boom angle or operating radii.

2-specific lengths of components on which the load ratings are based.

3-required parts for hoist reeving.

4-size and construction of all ropes shall be shown either on the rating chart or in the operating manual.

(b) For all other derricks, the manufacturer shall provide sufficient information from which capacity charts can be prepared and approved by the department for the particular installation. The capacity charts shall be located either at the derrick or the job site office.

21.2 Construction.-

21.2.1 General.-Derricks shall be constructed to adequately meet all stresses imposed on all members and components.
21.2.2 Guy derricks.-
(a) The minimum number of guys is six. Preferably, the guys should be equally spaced around the mast.
(b) The manufacturer shall furnish complete information recommending:

1- the number of guys.

2- the spacing around the mast;

3- the maximum vertical slope and initial tension or sag of all guys;

4- the size and construction of rope to be used in each.

(c) The mast base shall permit free rotation of the mast with allowance for slight tilting of the mast caused by guy slack.
(d) The mast cap shall:

1 - permit free rotation of the mast;

2 - adequately withstand tilting and cramping action imposed by the guy loads;

3 - be secured to the mast to prevent disengagement during erection;

4 - be provided with means for attachment of guy ropes.

21.2.3 Stiff leg derrick. -
(a) The mast shall be supported in the vertical position by two stiff legs one end of each being connected to the top of the mast and the other end securely anchored. The stiff legs shall be capable of withstanding the loads imposed by the boom at any point within its range of swing.
(b) The mast base shall:

1 - permit free rotation of mast;

2 - permit slight inclination of the mast without binding;

3 - provide means to prevent the mast from lifting out of its socket when the mast is in tension.

(c) The stiff leg connecting member at the top of the mast shall:

1 - permit free rotation of the mast;

2 - adequately withstand the loads imposed by the action of the stiff legs;

3 - be so secured as to oppose lift off forces at all times.

21.3 Ropes and reeving accessories.-

21.3.1 Guy ropes.-
(a) Guy ropes shall be of suitable size, grade and construction to withstand the maximum load imposed.
(b) The nominal breaking strength of each rope shall be no less than three times the load applied to the rope.
(c) Tie downs or kicker devices which may be easily loosened shall have locknuts or other suitable provision to prevent loosening.
21.3.2 Boom hoist ropes.-
(a) Boom hoist ropes shall be of suitable size, grade and construction to withstand the maximum load imposed.
(b) The live rope reeving system in a boom suspension shall withstand the maximum load imposed and be of sufficient length to permit lowering the boom point to horizontal position with at least three full wraps of rope remaining on the hoist drum.
(c) The nominal breaking strength of the most heavily loaded rope in a system shall be no less than three and a half times the loads applied to that rope.
21.3.3 Main hoist ropes.-
(a) Main hoist ropes shall be of a suitable size and construction to withstand the maximum load imposed.
(b) Ropes in the main hoisting system shall be of sufficient length for the entire range of movement specified for the application with at least three full wraps of rope on the hoist drum at all times.

(c) The nominal breaking strength of the most heavily loaded rope in a system shall be no less than three and a half times the load applied to that rope.
21.3.4 Reeving accessories.-
(a) Socketing shall be done in the manner specified by the manufacturer of the assembly.
(b) Rope end shall be anchored securely to the drum.
(c) Eyes shall be made in an approved manner and rope thimbles should be used in the eye.
(d) U-bolt clips shall have the U-bolt on the dead or short end, and the saddle on the live or long end of the rope. Spacing and number of all types of clips shall be in accordance with the clip manufacturer's recommendation and submitted to the department. Clips shall be drop-forged steel in all sizes manufactured commercially. When a newly installed rope has been in operation for an hour, all nuts on the clip bolts shall be retightened, and they should be checked for tightness at frequent intervals thereafter.
(e) Swaged, compressed, or wedge-socket fittings shall be applied as recommended by the rope, derrick, or fitting manufacturer.
(f) Where a half wedge socket is used it shall be of a positive locking type.
(g) If a load is supported by more than one rope, the tension in the parts shall be equalized.
21.3.5 Sheaves.-
(a) Sheave grooves shall be smooth and free from surface defects which could cause rope damage. The cross sectional radius at the bottom of the groove should be such as to form a close fitting saddle for the size rope used and the sides of the groove should be tapered outwardly to facilitate entrance of the rope into the groove. Flange corners should be rounded and the rims should run true about the axis of rotation.
(b) Sheaves carrying ropes which can be momentarily unloaded shall be provided with close fitting guards or other suitable devices to guide the rope back into the groove when the load is applied again.
(c) The sheaves in the lower load block shall be equipped with close-fitting guards that will prevent ropes from becoming fouled when the block is lying on the ground with ropes loose.
(d) Means should be provided, if necessary, to prevent chafing of the ropes.
(e) All running sheaves shall be equipped with means for lubrication. Permanently lubricated, sealed and/or shielded bearings shall be acceptable.
(f) Boom and hoisting sheaves shall have pitch diameters not less than eighteen times the nominal diameter of the rope used.
(g) Boom point sheaves should be provided with suitable guides to limit the offlead angle of the rope when entering the grooves from either side.

21.4 Anchoring and guying.-

21.4.1 Guy derricks.-
(a) The mast base shall be securely anchored. Maximum horizontal and downward vertical thrusts encountered when handling rated loads with the particular guy slope and spacing stipulated for the application are among the design factors for which provision must be made.
(b) The guys shall be secured to the ground or other firm anchorage. Maximum horizontal and vertical pulls encountered while handling rated loads with the particular guy slope and spacing stipulated for the application are among the factors for which provision must be made.
21.4.2 Stiff leg derricks.-
(a) The mast base shall be securely anchored. Maximum horizontal and upward and downward vertical thrusts encountered while handling rated loads stipulated for the application with the particular stiff-leg spacing and slope are among the factors for which provision must be made.
(b) The stiff legs shall be securely anchored. Maximum horizontal and vertical upward and downward thrusts encountered while handling rated loads with the particular stiff-leg arrangement stipulated for the application are among the factors for which provision must be made.

21.5 Hoist.-

21.5.1 The hoist shall be suitable for the derrick work intended and shall be securely anchored to prevent displacement from the imposed loads.
* 21.6 Cranes manufactured prior to April 1, 1970 shall be modified to conform to the provisions of 20.1.1(d) and (f), 20.1.2(h) and (i), 20.2.3, 20.3.1(b) and (c), 20.3.2(a)(2), 20.4.5, 20.5.1(b) and derricks manufactured prior to April 1, 1970 shall be modified to conform to the provisions of 21.3.5(f), unless it can be shown to the satisfaction of the commissioner that the crane can not feasibly or economically be altered to comply.
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22.0 Operation Cranes and Derricks. -

22.1 Operators.-

22.1.1 Cranes and derricks shall be operated only by the following persons:
(a) Persons licensed as operators by the department of buildings in accordance with section B26-5.0.
(b) Learners in the presence of and under the direct supervision of a licensed operator.
22.1.2 No person other than those listed under paragraph 22.1.1 above and persons such as oilers and supervisors, whose duties require them to do so, shall enter the cab of a crane and then only in the performance of his duties and with knowledge and consent of the operator.

22.2 Operating practices.-

22.2.1 The operator shall not engage in any practice which will divert his attention while actually engaged in operating the crane or derrick hoist.
22.2.2 The operator shall respond to signals only from the appointed signal men.
22.2.3 The operator shall be responsible for the operation of the crane or derrick hoist.
* 22.2.4 For mobile cranes, the warning signal shall be sounded each time before on-site traveling and intermittently during such travel, particularly when

approaching workmen.

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22.2.5 Before leaving his crane or derrick unattended, the operator shall:

(a) Land any attached load, bucket, lifting magnet, or other device.

(b) Disengage clutches.

(c) Set travel, swing, boom brakes and other locking devices.

(d) Put controls in the "off" position.

(e) Stop the engine.

(f) Secure mobile cranes against accidental travel.

(g) Lock and secure the equipment against unauthorized operation.

22.2.6 On leaving a mobile crane overnight, ground chocks shall be set and crane booms shall be lowered to ground level or otherwise fastened securely against displacement by wind loads or other external forces.

22.2.7 If there is a warning sign on the switch or engine starting controls, the operator shall not close the switch or start engine until the warning sign has been removed by the person placing it there.

22.2.8 Before closing the switch, or starting the engine, the operator shall see to it that all controls are in the "off " position and all personnel are in the clear.

22.2.9 If power fails during operation, the operator shall:

(a) Set all brakes and locking devices.

(b) Move all clutch or other power controls to the "off " position.

(c) Communicate with the appointed individual in charge of operations.

(d) If practical, the suspended load should be landed under brake control.

22.2.10 The operator shall familiarize himself with the equipment and its proper care. If adjustments or repairs are necessary, or any defects are known he shall report the same promptly to his employer or other person responsible for the equipment and shall also notify the next operator of the defects upon changing shifts.

22.2.11 All controls shall be tested by the operator at the start of a new shift. If any controls do not operate properly, they shall be adjusted or repaired before operations are begun.

22.2.12 Booms of mobile cranes which are being assembled or disassembled on the ground with or without support of the boom harness (equalizing sheaves, bridal and boom pendants) should be securely supported by proper blocking to prevent dropping of the boom sections.

23.0 Handling the Load.-No crane or derrick shall be loaded beyond the rated load.

23.1 Size of load.- On all operations involving cranes or derricks which are not equipped with those safety devices which make use of load measuring systems, there shall be a competent appointed individual assigned on a full-time basis to be responsible for determining the magnitude of loads to be lifted or lowered. The operator shall not make a lift unless he has first determined the weight of the load or is informed of such weight by the appointed person responsible for the operation.

23.2 Attaching the load.-

23.2.1 The hoist rope shall not be wrapped around the load.

23.2.2 The load shall be attached to the hook by means of slings or other approved devices.

23.3 Moving the load.-

23.3.1 The appointed individual directing the lift shall see that:

(a) In the case of a mobile crane, the crane is level and where necessary, chocked properly.

(b) The load is well secured and properly balanced in the sling or lifting device before it is lifted more than a few inches.

23.3.2 Before starting to hoist, he shall take care that:

(a) Hoist ropes are not kinked.

(b) Multiple part lines are not twisted around each other.

(c) The hook is brought over the load in such a manner as to prevent swinging.

(d) If there is a slack rope condition, the rope is properly seated on the drum and in the sheaves.

23.3.3 During hoisting, care should be taken that:

(a) There is no sudden acceleration or deceleration of the moving load.

(b) The load does not contact any obstructions.

23.3.4 Side loading of booms shall be limited to freely suspended loads. Cranes shall not be used for dragging loads sideways. Derricks shall not be used for side loading.

23.3.5 The operator shall not lift, lower, swing or travel while any person is on the load or hook. The operator shall not carry loads over people or over any occupied building.

23.3.6 On truck cranes, loads shall be lifted over the front area only as recommended by the manufacturer and submitted to the department of buildings.

23.3.7 The operator shall test the brakes each time a load approaching the rated load is handled by raising it a few inches and applying the brakes.

23.3.8 For mobile cranes, outriggers shall be used when the load to be handled at that particular radius exceeds the rated load without outriggers as given by the manufacturer for that crane and approved by the department of buildings.

23.3.9 Neither the load nor the boom shall be lowered below the point where less than three full wraps of rope remain on their respective drums.

23.3.10 When two or more cranes are used to lift one load, one appointed person shall be responsible for the operation. He shall analyze the operation and instruct all personnel involved in the proper positioning, rigging of the load, and the movements to be made.

23.3.11 In transit, the following additional precautions for mobile cranes shall be exercised:

(a) The boom shall be carried in line with the direction of motion.

(b) The superstructure shall be secured against rotation. When negotiating turns or when the boom is supported on a dolly, the superstructure may be rotated by a licensed crane operator only.

(c) The empty hook shall be lashed or otherwise restrained so that it cannot swing freely.

23.3.12 Before traveling a crane with a load, proposed travel should be shown on a plan of operation and

approved by the department. Such data shall be filed with an application for on-site inspection.
23.3.13 A crane shall not be traveled with the boom so high that it may bounce back over the cab.
23.3.14 When rotating the crane or derrick, sudden stops shall not be made. Rotational speed shall be such that the load does not swing out beyond the radii at which it can be controlled. A tag or restraint line shall be used when rotation of the load is hazardous.
23.3.15 When a crane is to be operated at a fixed radius, the boom hoist pawl or other positive locking device shall be engaged.
23.3.16 Use of winch heads:
(a) Ropes shall not be handled on a winch head without knowledge of the operator.
(b) While a winch is being used, the operator shall be within convenient reach of the power unit control lever.

23.4 Holding the load.-
23.4.1 The operator shall not leave his position at the controls while the load is suspended.
23.4.2 People shall not be permitted to stand or pass under a load.
23.4.3 If the load must remain suspended for any considerable length of time, the operator shall hold the drum from rotating in the lowering direction by activating the positive controllable means at the operator's station.
23.4.4 In all cases, when booms are raised or lowered from the horizontal, load blocks including hooks and weight balls shall be left on the ground or deposited to the ground before raising or lowering booms.

23.5 Securing derrick booms.-
23.5.1 Dogs, pawls, or other positive braking mechanism on the hoist shall be engaged. When not in use, the derrick boom shall:
(a) Be laid down;
(b) Be secured to a stationary member, as nearly under the head as possible, by attachment of a sling to the load block; or
(c) Hoisted to a vertical position and secured to the mast.

24.0 Signals.-
24.1 A signalman shall be provided when the point of operation is not in full and direct view of the operator unless an approved mechanical signaling or control device is provided for safe direction of the operator.
24.2 Only persons who are dependable and fully qualified by experience with the operation shall be used as signalmen.
24.3 A signalman or other appropriate controls shall be provided when operations or equipment on or adjacent to a highway create a traffic hazard.
24.4 Signalmen shall wear high visibility gloves.
24.5 A uniform hand signal system shall be used on all operations of a similar nature. The system in use by the U.S. Corps of Engineers (EM 385-11) may be used as the model.
24.6 Manual hand signals may be used when the distance between the operator and the signalman is not more than 60 feet, but manual hand signals shall not be used when atmospheric conditions prevent clear visibility to the operator.
24.7 Mechanical signal systems shall be protected against unauthorized use, breakage, weather or obstruction which will interfere with safe operation. In the event of any malfunction, all motion shall be stopped immediately.

25.0 Miscellaneous.-
25.1 Ballast or counterweight. - Cranes shall not be operated without the full amount of any ballast or counterweight in place as specified by the maker, and approved by the department.
25.2 Wind speed limitations. - No crane or derrick operator shall start an operation when the wind speed exceeds 30 m.p.h., or when the wind is predicted to reach 30 m.p.h. before the operation can be completed. The U.S. weather bureau data from the nearest reporting station may be used for the determination of wind speed.
25.3 Operating near electric power lines. -
25.3.1 No crane or derrick shall be operated in such a location that any part of the machine or of its load shall at any time come within 15 feet of an energized power line.
25.3.2 Before the commencement of operations near electrical lines, the appointed person responsible for the operation shall notify the owners of the lines or their authorized representatives providing them with all pertinent information and requesting their cooperation.
25.3.3 Any overhead wire shall be considered to be an energized line unless and until the person owning such line or the electrical utility authorities certify that it is not an energized line.

25.4 Electrical equipment.-
25.4.1 General.-
(a) Wiring and equipment shall comply with the electrical code of the City of New York.
(b) The voltage used on control circuits shall not exceed 750 volts.
25.4.2 Equipment.-
(a) Electric equipment shall be so located or enclosed that live parts will not be exposed to accidental contact.
(b) All motor, controller and switch frames shall be grounded.
(c) Electric equipment shall be thoroughly protected from dirt, grease and oil, and where exposed to the weather, shall be thoroughly protected therefrom.
(d) Guards for live parts shall be substantial and so located that they cannot be deformed so as to make contact with the live parts.
(e) Name plates shall not be removed.
25.4.3 Controllers.-
(a) Each cage operated crane and derrick shall be provided with a device which will disconnect all motors from the line on failure of power and will not permit any motor to be restarted until the controller handle is brought to the "off " position, or a reset switch or button is operated.
(b) Lever operated controllers shall be provided with a notch or latch which in the "off" position prevents the

handle from being inadvertently moved to the "on" position.
(c) The controller operating handle shall be located within convenient reach of the operator.
(d) As far as practicable, the movement of each controller handle shall be in the same general directions as the resultant movements of the load.
(e) For floor operated cranes and derricks, the controller or controllers, if rope operated, shall automatically return to the "off" position when released by the operator.
25.4.4 Grounding.-Each crane, which may be operated in the vicinity of a live power line, shall be effectively grounded as hereinafter provided. The crane shall be provided with a permanent clamp or other means for convenient and effective attachment of a grounding conductor. The cable connecting the clamp to the ground shall be equivalent to a No. 2 AWG or larger single conductor, superflexible, rope stranded copper, composed of not less than 1,600 individual wires, with 600 volt covering for mechanical protection and with terminal parts that insure a good connection with hand type screw clamps. An effective ground shall be one having a resistance of 25 ohms or less, which shall be measured, or a connection to a continuous underground metallic water piping system.

25.5 Demolition.-
25.5.1 Crane or derrick operation when used for mechanical demolition shall comply with section C26-1905.4(d) of the building code and, in addition, a crane or derrick operating with a demolition ball shall meet the following requirements:
(a) The weight of the demolition ball shall not exceed fifty percent of the rated capacity of the boom length at its maximum radius.
(b) The swing of the boom shall not exceed thirty degrees from the centerline, front to back of the crane mounting.
(c) The load line and attachment of the demolition ball to the load line shall be checked at least twice daily.
(d) Truck cranes without outriggers extended shall not be used to swing a demolition ball.

26.0 Storage.-
26.1 Necessary clothing and personal belongings shall be stored in or about the crane or derrick in such a manner as to not interfere with access or operation.
26.2 Tools, oil cans, waste, extra fuses, and other necessary articles shall be stored in a tool box and shall not be permitted to lie loose in or about the cab or cage.

27.0 Refueling.-
27.1 Refueling shall comply with section C26-1909.1(c).
27.2 Machines shall not be refueled with the engine running.

28.0 Fire Extinguishers.-
28.1 A carbon dioxide, dry chemical or equivalent fire extinguisher shall be kept in the cab or in the vicinity of the crane or derrick.
28.2 Operating and maintenance personnel shall be familiar with the use and care of the fire extinguishers provided.

29.0 Filing for Prototype Equipment.-Where the equipment is a duplicate of equipment previously filed with design information and approved by the department, the previous approval shall be accepted for the design. Evidence shall be submitted that the welding and other manufacturing processes affecting the structural integrity of the crane were performed in accordance with applicable specifications and that required controls were maintained and tests performed**.**

30.0 Waiver of Modification of Rules and Regulations.-
The commissioner may, at his discretion, modify or waive any of the foregoing requirements where practical difficulties in complying with particular sections exist and the public safety is not endangered thereby.
******Local Law 73-1969***

*** RS 19-3 CABLEWAYS

1.0 Scope.-This standard applies to the use of cableways for the construction, alteration and repair of buildings.
2.0 Definition.-
2.1 A power operated system for moving loads in a generally horizontal direction in which the loads are conveyed on an overhead cable, track or carriage.
3.0 An on-site inspection shall be required for cableways used for the erection, alteration and repair of buildings. The provisions of article 9.0 of RS 19-2 shall apply and for this purpose the word, "cableway" shall be substituted for "crane" or "derrick" where those words appear in article 9.0**.**
******Local Law 73-1969***

** REFERENCE STANDARD RS 19-4 SAFETY NETS

ANSI A10.11-1989-American national standard for personnel and debris nets used during construction, repair and demolition operations, as modified.
Modifications-The provisions of ANSI A10.11-1989 shall be subject to the following modifications:
(1) Section 3.1 of such national standard shall be deemed to read as follows:
3.1 Safety nets shall be provided in accordance with sections 27-1021 and 27-1022 of the administrative code.
(2) Such national standard shall be deemed to include two new sections 10.8 and 10.9 to read as follows:
10.8 On each elevation of a building, the open sided permanent floor edges shall be guarded by a vertical net lining or its equivalent up to a height of not less than sixty inches.
10.9 When nets are installed vertically, they shall be supported so as to be capable of withstanding a lateral force of two hundred pounds.
****Local Law 61-1987; 234-90 BCR***

APPENDIX A

SELECTED RULES OF THE DEPARTMENT OF BUILDINGS TITLE 1 OF THE RULES OF THE CITY OF NEW YORK

Cite as:
For chapters: Title No. **RCNY** Chapter No.—*example*: 1 **RCNY** Chapter 4
For sections: Title No**. RCNY** §No.—*example:* 1 **RCNY** §4-02

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APPENDIX A
DEPARTMENT OF BUILDINGS

Promulgation of Amendments to Regulations Relating to Public Access to Records

CHAPTER 1 MATERIAL AND EQUIPMENT APPLICATION PROCEDURES

§1-01 Material and Equipment Application Procedures.

(a) *Jurisdiction.* Pursuant to New York City Administrative Code §27-131, all materials which in their use are regulated by the Building Code must be approved by the Commissioner of the Department of Buildings (the "department").

(b) *Filing of applications.* (1) All applications for acceptance of material or equipment which is subject to the approval of the Commissioner shall be submitted to the department on forms so provided and labeled "Attention: Material and Equipment Acceptance Division" ("MEA").

(2) A complete application shall consist of a transmittal letter addressed to the commissioner, and the appropriate application fee together with all test reports and information required in the application and, on matters involving reference standards RS 7-3, 8-1, 13-1, 13-3, 13-6, 13-16, Sections p 102.4(b)(5), p 105.4, p 114.12 and p 115.8 of 16, 17, 18-1, 19-1 and paint spray booths, an affidavit attesting that a complete application

has been served on the Fire Commissioner of the City of New York, Bureau of Fire Prevention, Technology Management Unit, in the same manner service is made on the department. An application, accompanied by the required fee, will be assigned a filing number. Any application which is not submitted with all information and test reports within sixty (60) calendar days of initial filing will be administratively closed. The application fee shall be non-refundable.

(c) *Applications filed with MEA and thereafter abandoned.* Applications for acceptance, which have been disapproved in whole or in part, and upon which no further action has been taken by the applicant within one year after the notice of disapproval is given shall be processed as follows:

(1) The application shall be deemed abandoned.

(2) The applicant shall be notified, by certified by mail at the address last furnished, that the application has been deemed abandoned and that he or she has the opportunity to remove reports and other information from the application, exclusive of the application forms, within 21 days of the date of the said notification.

(3) Upon completion of such 21 day period, applications and remaining reports and other supplementary information may be removed from the files and destroyed.

(4) Except for matters requiring consultation with the fire department, the Director of MEA may vary the procedure as may be necessary to avoid hardship, when same is warranted due to unusual and exceptional conditions beyond the control of the applicant.

(d) *Fees.* The fees for an application for the approval of material and equipment or an application for the amendment of prior approval of material or equipment shall be pursuant to Administrative Code §26-214 (11).

(e) *MEA review.* MEA shall review all applications for acceptance of material or equipment for which there is a code prescribed test method or a recognized test method acceptable to the commissioner and shall approve or deny such application on behalf of the commissioner. No material or equipment application which is required to be forwarded to the fire department pursuant to §1-01(b)(2) shall be approved unless comments have been received from the fire department or fifteen (15) business days have elapsed from the time of filing of the complete application with the department, whichever is sooner.

(f)*Advisory committee review*. The commissioner shall appoint an advisory committee consisting of members of the department, the fire department, a registered architect, a professional engineer and representatives of the building and construction industry. The advisory committee shall be chaired by the Deputy Commissioner for Technical Affairs.

(1) *Absence of a code prescribed test method or an acceptable recognized test method.* In the event there is neither a code prescribed test method nor an acceptable recognized test method for material or equipment whose approval is under the jurisdiction of the department, an application for such material or equipment approval shall be referred to the advisory committee. The advisory committee shall prepare for the commissioner a detailed report and recommendation which sets forth the basis for approval or denial of the material or equipment application. In addition, on applications involving RS 5, where there is neither a code prescribed test method nor an acceptable recognized test method, the department shall be responsive to fire safety concerns and shall forward such applications to the fire department as appropriate.

(2) *Conflicting or ambiguous test results.* In the event MEA determines that submitted test reports are conflicting or ambiguous, MEA may refer the application to the advisory committee. The advisory committee shall prepare a detailed report and recommendation to the commissioner which sets forth the basis for approval or denial of the material or equipment application for which MEA found conflicting or ambiguous test results. Where necessary, the advisory committee may request the submission of additional information.

(3) *Consultation with the fire department.* The commissioner shall not take any final action in approving material or equipment applications which are required to be submitted to the fire department, pursuant to §1-01(b)(2), unless comments have been received from the fire department or fifteen (15) business days have elapsed from the date of the advisory committee's recommendation to the commissioner, whichever is sooner.

(g) *Appeals.* (1) Any denial by MEA may be referred to the advisory committee for its recommendation, upon applicant's written request within thirty (30) calendar days of the denial. The advisory committee shall issue a detailed report and recommendation to the commissioner who shall issue a final determination.

(2) A denial by MEA shall not be deemed a final determination of the Department until thirty (30) calendar days have lapsed.

(3) The final determination shall state the basis for the determination, with specific reference to test methods and test results.

(4) An applicant may challenge a final determination of the commissioner by initiating an article 78 proceeding in State Supreme Court.

(h) *Amendments.* All amendments to material or equipment applications previously approved by the MEA or the Board of Standards and Appeals, including amendments relating to a manufacturer's name or to the material, or equipment design, shall be processed in the same manner as any new application.

CHAPTER 2 BOILER INSPECTIONS

§2-01 Low Pressure Boiler Inspections by Qualified Boiler Inspectors and Welding Repairs by Certified Welders.

(a) *Definitions*.

Authorized insurance company. A company approved by the New York State Department of Labor.

Qualified boiler inspector.

(1) An inspector who has been issued a Certificate of Competence by the New York State Department of Labor and who is employed by an Authorized Insurance Company

(2) A licensed New York City High Pressure Boiler Operating Engineer

(3) A licensed New York City Class A and B Oil Burning Equipment Installer

(4) A licensed New York City Master Plumber

(5) A Journeyman Plumber acting under the direct and continuing supervision of a New York City Master Plumber

Certified welder.

(1) An organization in possession of a valid National Board or New York State Repair Certificate of Authorization

(2) An organization in possession of a valid American Society of

Mechanical Engineers ("ASME") Certificate of Authorization

(b) *Boiler identification and records.*

(1) The owner of a boiler or any other person acquiring a new or replacement boiler shall file the forms as shown in the instructions for "Boiler Filing Submission for Replacement, Repair, Installation or Legalization," where required.

(2) The Department of Buildings boiler number is to be affixed to the boiler by a non-combustible tag, painted on the boiler, or clearly visible and appropriately displayed in close proximity to the boiler.

(3) The Department of Buildings boiler numbers are to be used in all correspondence between qualified boiler inspectors and the Department. Boiler numbers can be obtained in any one of the borough offices via the public access terminals.

(4) The owner of a boiler is to notify the Department of Buildings Boiler Division within 30 days of the owner's change of address. The Department of Buildings boiler number is to be used in all correspondence.

(c) *Inspection and filing requirements.*

(1) All low pressure boiler annual inspection reports by qualified boiler inspectors shall be submitted on forms supplied by the Department of Buildings within 30 days following the inspection.

(2) "Low Pressure Boiler Annual Inspection Reports" are to be submitted with a $30.00 filing fee to the Department of Buildings.

(3) If an inspection reveals any dangerous condition in a boiler which threatens life or safety and which requires an immediate shut down of the boiler, the qualified boiler inspector must send immediate notification of the condition to the Chief Boiler Inspector at the Department of Buildings at the address provided in the City's website, http://www.nyc.gov.

(d) *Revocation of qualified boiler inspector's authorization to submit boiler inspection reports to the department.*

(1) qualified boiler inspector's failure to comply with any of these rules or a qualified boiler inspector's falsification of any form or inspection report filed with the Department may result in revocation of authorization to submit boiler inspection reports to the Department, pursuant to Rule 13-11 of Title 1 of the Rules of the City of New York (1 RCNY §13-01).

(e) *Low pressure boiler welding repairs.*

(1) All low pressure boiler welding repairs shall be performed by certified welders, as required by the New York State Industrial Code Rules 4-6.2 (12 NYCRR 4-6.2) and 14-3.2 (12 NYCRR 14-3.2).

(2) All welded repairs must have a metal tag attached to the weld. The metal tag shall list the name of the certified welder, the certified stamp number of the certified welder and the date of the welded repair.

(f) *Failure to comply.*

(1) The failure to comply with requirements relating to boiler inspections and welding repairs may result in the issuance of a notice of violation and related enforcement proceedings.

§2-02 Reduction of Penalties for Late Filing of Annual Low Pressure Boiler Inspection Reports.

(a) Pursuant to Section 27-793(c) of the New York City Administrative Code ("the code"), each owner of a boiler that is subject to periodic inspection must file with the Department an annual statement accompanied by a qualified boiler inspector's signed report of a boiler inspection. The first report must be filed within thirty (30) days of the installation of a new boiler. Thereafter, such report must be filed on or before December 31 of the year of each annual inspection.

(b) Penalties for the late filing of reports listed in (a) above are set forth in Section 26-125(d) of the code. Pursuant to Section 26-125(e) of the code, such penalties may be reduced in cases where [*sic*] sufficient evidence is submitted to prove that the required annual inspection was performed prior to December 31 of the year for which the inspection report was due or within thirty (30) days of initial installation but the inspection report was filed late. This rule sets forth the procedures that must be followed to obtain a reduction of penalties for the late filing of annual boiler inspection reports pursuant to Section 26-125(e).

(c) All requests for the reduction of penalties for the late filing of annual boiler inspection reports must be made in writing and accompanied by the supporting evidence listed in paragraphs (d) and (e) below. The requests must be addressed to the Department of Buildings, Boiler Division at the address provided in the City's website, http://www.nyc.gov.

(d) All requests for a reduction in penalties must be accompanied by a copy of the inspection report and by a notarized statement from the qualified boiler inspector who performed the inspection or from the authorized insurance company whose employee performed the inspection indicating the date that the required annual boiler inspection was performed. If the boiler inspection was performed by a licensed New York City Oil Burner Equipment Installer or a licensed New York City Master Plumber, the statement must contain the seal of the licensee.

(e) In addition to the statement listed in paragraph (d) above, additional evidence must be submitted to prove the date of inspection. Examples of such evidence include but are not limited to the following**:**

(1) Invoices for completed inspections;

(2) Canceled checks to qualified boiler inspectors for completed inspection;

(3) Route sheets of inspectors employed by authorized insurance companies indicating dates and addresses of inspections;

(4) Receipts of payment for completed inspections; and

(5) Executed contracts with authorized insurance companies and other qualified boiler inspectors indicating dates of inspection.

CHAPTER 3 VACANT AND UNGUARDED BUILDINGS

§3-01 Sealing and Protection of Vacant and Unguarded Buildings.

Where buildings are vacant, unguarded, open to unauthorized entry and are required to be sealed pursuant to the provisions of an unsafe building order issued by the Department of Buildings or a determination by the Department of Housing Preservation and Development that the condition is dangerous to life, health and safety, they shall be sealed and protected in the following manner:

(a) *Buildings with exterior walls constructed of brick or other masonry.*

(1) All exterior openings including door openings, which are in the cellar, basement and first story, or which are less than ten (10) feet from grade, shall be sealed with concrete block or stucco on plywood as provided below. All exterior openings which are on the course of a fire escape or are above the first

story and less than six (6) feet measured horizontally from an opening in an adjoining building shall be sealed with concrete block or stucco on plywood as provided below. One door opening, readily visible from the street, may, at the discretion of the owner, be sealed with a padlocked metal roll-up door, one (1) hour fire rating metal door or an exterior door of one (1) and three-quarter (3/4) inch solid wood covered with twenty six (26) U.S. gage [*sic*] galvanized metal with edging turned over and nailed with flat head galvanized nails. The door of solid wood shall be hung in such a manner that no screws are exposed on the outside of the door on either the hinges or the hasps. Hinges shall not have removable hinge pins. Two hasps and locks shall be provided, located so as to divide the height of the door in equal sections.

(2) *Concrete Block Seal.*

(i) Concrete block shall conform to the provisions of Reference Standard RS-10 of the New York City Building Code.

(ii) All door and window frames shall be removed before concrete blocks are installed. Brickwork which new concrete blocks will abut, shall be cleaned and thoroughly wetted before blocks are installed.

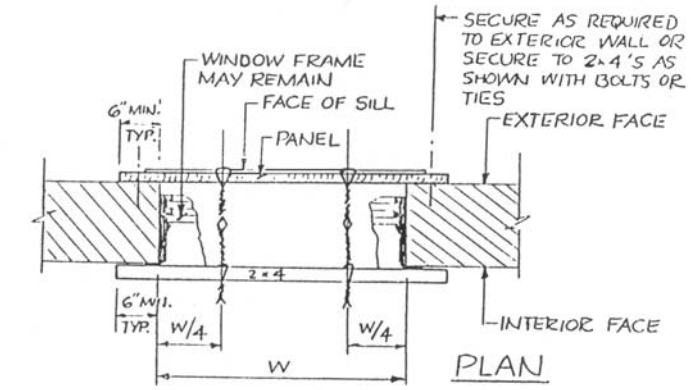
(iii) Doors and windows, not exceeding three (3) feet in width, shall be sealed with concrete block at least four (4) inches in thickness. Openings exceeding three (3) feet in width shall be sealed with concrete blocks at least eight (8) inches in thickness.

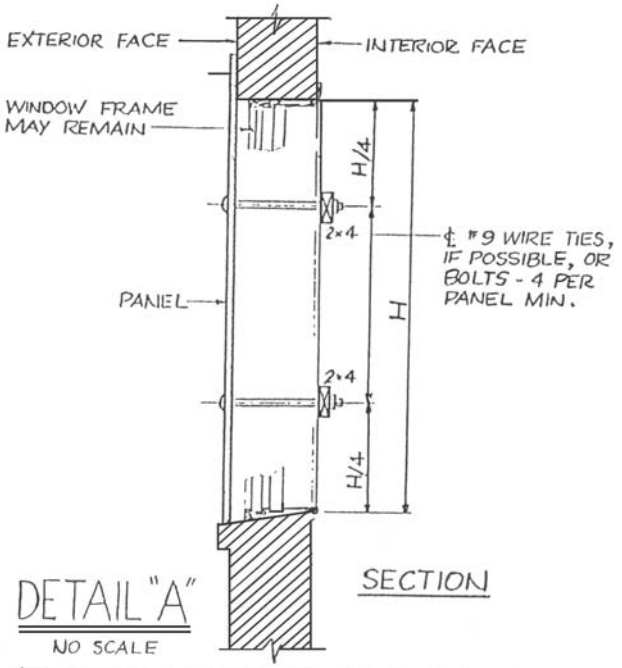
(iv) Concrete blocks shall be laid in masonry cement mortar with a mix of not more than three (3) parts of sand for each part of masonry cement by volume. Joints in masonry shall be broken and exterior faces shall be struck. Blocks shall not extend beyond the brick line. Masonry cement shall conform to the provisions of Reference Standards RS-10 of the Building Code.

(3) *Stucco on Plywood Seal.* (i) If the window frame is in a condition whereby plywood can be secured to it, five-eighths (5/8) inch CDX grade plywood shall be nailed into such frame openings with eight d (8d) common nails every twelve (12) inches. Galvanized wire lath [*sic*] shall then be nailed to plywood using one (1) inch roof nails every twelve (12) inches. Wire lath [*sic*] shall be covered by an one (1) inch coat of portland cement with a float finish. Cement shall not extend beyond the opening's brickline.

(ii) If a window or door frame is in a condition whereby such plywood cannot be secured to it, the frame shall be removed. The opening shall then be framed-out with new grade one (1) wood or metal two (2) x four (4) inch top and bottom plates with wood or metal studs every sixteen (16) inches on center.

(iii)Openings exceeding three (3) feet shall be framed-out





ALTERNATE METHOD OF SECURING PANELS TO WINDOW OPENINGS. SIMILAR FOR OTHER OPENINGS.

with new grade one (1) two (2) x four (4) inch top and bottom plates with wood or metal studs every sixteen (16) inches on center.

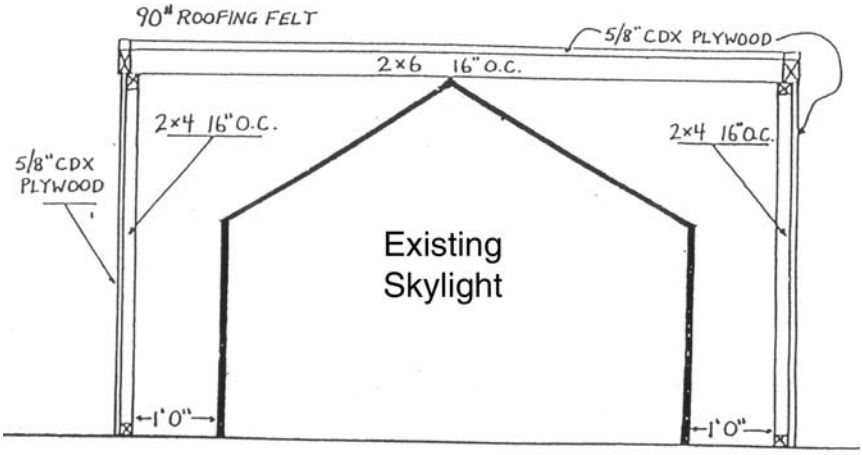
(b) *Buildings with exterior walls constructed of material other than masonry.* All exterior openings including door openings, which are in the cellar, basement and first story, on the course of a fire escape, are less than six (6) feet measured horizontally from an opening in an adjoining building or which are less than ten (10) feet from grade, shall be sealed with stucco on plywood as provided in this section or with five-eighths (5/8) inch CDX grade plywood which may be nailed directly to the window frame if such frame is in a condition that will enable such plywood to be attached, fastened directly to the exterior wall, or secured with bolts and battens in accordance with Detail "A" (annexed below). If such frame is not in a condition to enable such plywood to be attached, the opening shall be framed-out with new grade one (1) wood or metal two (2) x four (4) inch top and bottom plates with wood or metal studs every sixteen (16) inches on center. One door opening, readily visible from the street, may, at the discretion of the owner, be sealed with a padlocked metal roll-up door, one (1) hour fire rating metal door or an exterior door of one (1) and three-quarter (3/4) inch solid wood covered with twenty six (26) U.S. gage [*sic*] galvanized metal with edging turned over and nailed with flat head galvanized nails. The door of solid wood shall be hung in such a manner that no screws are exposed on the outside of the door on either the hinges or the hasps. Hinges shall not have removable hinge pins. Two hasps and locks shall be provided, located so as to divide the height of the door in equal sections.

(c) *Openings in roofs which are accessible from an adjoining building shall be sealed as follows:*

(1) Ventilating equipment and similar protruding structural elements in roofs shall be completely removed, except that dumbwaiter shafts extending above roof level need not be removed if the door opening into the shaft is sealed with concrete blocks or stucco on plywood. Openings remaining after removal of such equipment and/or protruding structural elements shall be sealed with one (1) inch thick tongue and groove boards, not less than six (6) inches in nominal width or with five-eighths (5/8) [*sic*] inch CDX plywood, nailed onto three (3)-inch by eight (8)-inch joists, not more than sixteen (16) inches on center. Joists shall be secured to the roof timbers framed about the openings in a sound and secure manner. Boards shall be covered with ninety (90) pound roofing felt secured by one (1) inch roofing nails every twelve (12) inches or roofing cement to provide a watertight durable cover. Skylights at the top of the dumbwaiter shafts shall be sealed by removing the assembly, framing out the opening with new grade one (1) two (2) x four (4) inch joists on edge, sixteen (16) inches on center and then covered with five-eighths (5/8) inch CDX grade plywood. Such plywood shall then be covered with ninety (90) pound roofing felt secured by one (1) inch roofing nails every twelve (12) inches or roofing cement to provide a watertight durable cover.

(2) Roof skylights shall be secured by constructing a frame which encloses all sides of the skylight. The frame shall be constructed using new grade one (1) two (2) x four (4) inch single bottom plate and double top plate with wood or metal studs every sixteen (16) inches on center. Bottom plates shall be nailed to the building's roof joists with sixteen d (16d) common nails or sixteen d (16d) concrete nails every twelve (12) inches. Top plates shall overlap at the corners. New grade one (1) two (2) x six (6) inch joists on edge with headers, every sixteen (16) inches on center, shall bear on top plates. The entire frame shall then be covered with five-eighths (5/8) inch CDX grade plywood. A watertight durable cover shall be provided on the top of the frame using (90) pound roofing felt secured by one (1) inch roofing nails every twelve (12) inches or roofing cement. A diagram for enclosure of roof skylight is provided at Detail "B" below.

(3) Public hall roof bulkheads shall be sealed as follows: Windows of bulkheads shall be removed and sealed with concrete blocks or stucco on plywood as provided in this section. Doors of bulkheads may be secured shut if the frame and door are in a condition whereby the door may be adequately secured. If not in such condition, the door and frame shall be removed and the opening shall be sealed with concrete blocks or stucco on plywood as provided in this section. Openings at top of roof bulkheads shall be sealed by removing the assembly, framing out the opening with new grade one (1)



Detail "B"
Enclosure For Roof Skylights

two (2) x eight (8) inch joists on edge, sixteen (16) inches on center and then covered with five-eighth (5/8) inch CDX grade plywood. Such plywood shall then be covered with ninety (90) pound roofing felt secured by one (1) inch roofing nails every twelve (12) inches or roofing cement to provide a watertight durable cover.

(d) *Notification to Utilities*. Notification shall be made to the steam, electric and gas utility companies which provide service to the buildings to request discontinuance of service to the buildings. In addition, water service to the building shall be discontinued and certification to that effect from the Department of Environmental Protection shall be filed with the department.

(e) *Rubbish Removal and Examination*. Prior to the completion of sealing of exterior openings as set forth in this section, all decomposable debris and rubbish shall be removed from the yards, courts and any area at the perimeter of the premises and the building shall be treated to exterminate rodents by a licensed exterminator.

(f) *Hazardous Combustible Material Within Buildings*. If hazardous materials which could cause a fire or explosion are discovered within the building, they shall be removed and disposed of in an appropriate manner prior to sealing.

§3-02 Obtaining Access to Keys of Sealed Premises.

(a) *Submission of Request.*

Persons wishing to have access to the keys to a premises sealed by the Department of Buildings must appear in person at the Executive Offices of the New York City Department of Buildings. At this time they must submit form OP-14, "Request for Access to Sealed Premises," with sections "A - Ownership Interest" and "B - Statement of Intent" both completed and notarized. Copies of the form are available at the Executive Offices of the Department of Buildings.

(b) *Verification of Ownership Interest.*

(1) The General Counsel's Office reviews the form to verify an ownership or leasehold interest in the premises.

The person seeking to obtain access must provide the General Counsel's Office with some identification including a photograph (e.g. driver's license, passport) and whatever document establishes the person's ownership or leasehold interest in the premises.

Examples of such documents include the following:

(i) a copy of a recorded deed;

(ii) a signed lease, along with the owner's name(s), address(es) and telephone number(s);

(iii) a mortgage agreement;

(iv) a State certified Certificate of Incorporation;

(v) signed partnership documents; and

(vi) any other document deemed acceptable by the Commissioner.

(2) A representative of the General Counsel's Office will review the above documentation to verify ownership interest. If ownership interest is verified, the representative will sign and date the form where indicated. This representative gives a copy of the signed form to the person seeking to obtain access and gives the original form to the office of Borough Operations.

(c) *Obtaining the Key*.

(1) Once the General Counsel's Office signs the form verifying ownership interest, the person seeking to obtain access must bring the following documents to the Office of the Executive Chief Inspector to substantiate the affirmations required by subdivision c of Section 26-127.1 of the Administrative Code:

(i) a copy of Form OP-14 signed by the General Counsel's Office:

(ii) a copy of the computer index sheet listing the application and violations for the premises**;**

(iii) a copy of the vacate order;

(iv) a copy of all relevant outstanding violations;

(v) a copy of any relevant work permit issued by the Department of Buildings;

(vi) a copy of all relevant plans approved by the Department; and

(vii) any other document deemed necessary by the Commissioner.

(2) A representative of the office of the Borough Operations will review the above documentation to determine if the person has the requisite need to gain access to the premises. If it is determined that access should be granted, the representative of the office of the Borough Operations will:

(i) have a photograph taken of the person seeking to obtain access, initial the photograph and attach it to the form;

(ii) obtain a copy of the identification including a photograph (e.g. drivers license, passport) and attach it to the form;

(iii) indicate on the form reasons for granting access;

(iv) specify on the form the date by which the keys must be returned;

(v) sign the form; and

(vi) give a copy of both sides of the completed form to the person receiving the key.

(d) *Returning the key*.

(1) All keys must be returned to the office of Borough Operations by the date indicated on the form.

(2) If a vacate order has been rescinded, all locks and chains must be returned with the keys.

(3) In order to obtain an extension of time for keeping the key, the person seeking access must appear in person at the Executive Offices with a notarized letter stating the reason for this request. A representative from the office of Borough Operations will review the request and, if accepted, will note the new return date on the original form and initial the change. The notarized letter will be attached to the original form.

§3-03 Hearings to determine whether sealing orders were properly issued.

(1) Hearings to determine whether sealing orders were properly issued by the Department of Buildings may be arranged through the General Counsel's office. A person challenging a sealing order may obtain a hearing by submitting a written request to the office of the General Counsel.

(2) The office of Administrative Trials and Hearings (OATH) will be notified to schedule a hearing after the General Counsel's office receives the written request for the hearing. OATH will set the date and time for the hearing. The General Counsel's office will notify the person requesting the hearing as soon as OATH calendars the hearing. In the event that the person seeking the hearing fails to appear, the Commissioner's Order to seal the premises will remain in effect.

3-04 Obtaining Access to Keys of Premises Sealed Pursuant to §26-127.2 of the Administrative Code.

(a) *Submission of Request.* Persons wishing to have access to the keys to a premises sealed by the Department of Buildings

pursuant to §26-127.2 of the Administrative Code must appear in person at the Executive Offices of the New York City Department of Buildings. At this time they must submit the form, "Request for Access to Premises Sealed for Zoning Violations," with section "A - Ownership Interest" and "B - Statement of Intent" both completed and notarized. Copies of the form are available from the Administrative Enforcement Unit ("AEU") at the Executive Offices of the Department of Buildings.

(b) *Verification of ownership interest.* (1) The AEU reviews the form to verify an ownership or leasehold interest in the premises. The person seeking to obtain access must provide the AEU with some identification including a photograph (e.g. driver's license, passport) and whatever document establishes the person's ownership or leasehold interest in the premises. Examples of such documents include the following:

(i) a copy of a recorded deed;

(ii) a signed lease, along with the owner's name(s), address(es) and telephone number(s);

(iii)a mortgage agreement;

(iv)a State certified Certificate of Incorporation;

(v) signed partnership documents; and

(vi) any other document deemed accepted by the Commissioner.

(2) A representative of AEU shall review the above documentation to verify ownership interest. If ownership interest is verified, the representative will sign and date the form where indicated. A copy of the signed form shall be provided to the person seeking to obtain access.

(c) *Obtaining the key*. (1) Once the AEU signs the form verifying ownership interest, the person seeking to obtain access must submit copies of the following documents to the AEU:

(i) Form entitled "Request for Access to Premises Sealed for Zoning Violations," with section A signed by AEU;

(ii) the sealing order;

(iii)any other document deemed necessary by the commissioner.

(2) A representative of the AEU will review the above documentation to determine if the person has the requisite need to gain access to the premises. If it is determined that access should be granted, the representative of the AEU will:

(i) have a photograph taken of the person seeking to obtain access, initial the photograph and attach it to the form;

(ii) obtain a copy of the identification including a photograph (i.e. driver's license, passport) and attach it to the form;

(iii) indicate on the form reasons for granting access;

(iv)specify on the form the date by which the keys must be returned;

(v) sign the form; and

(vi) give a copy of both sides of the completed form to the person receiving the key.

(d) *Returning the key*. (1) All keys must be returned to the AEU by the date indicated on the form.

(2) If a sealing order has been rescinded, all locks and chains must be returned with the keys.

(3) In order to obtain an extension of time for keeping the key, the original person seeking access must appear in person at the AEU with the key and a notarized letter stating the reason for this request and, if accepted, will note the new return date on the original form and initial the change. The notarized letter will be attached to the original form.

CHAPTER 4 CERTIFICATES OF OCCUPANCY, LIVE LOADS AND OCCUPANCY LOADS

§4-01 Posting Requirements.

(a) A copy of the Certificate of Occupancy indicating the live loads and occupant loads shall be posted within every building for which a Certificate of Occupancy has been issued, except in one and two-family dwellings, and such posted Certificate of Occupancy shall be deemed in full compliance with §27-225 of the Administrative Code. In a commercial or industrial structure for which no Certificate of Occupancy was issued, a sign shall be posted and maintained in a conspicuous place on each floor stating the live loads.

(b) The copy of the Certificate of Occupancy shall be posted in the main entrance hall or lobby leading to the elevator of each building when there are elevators and to the main entrance hall to the stairs when there are no elevators and shall be posted near the main entrance door when there is no entrance hall to stairs or elevators.

(c) The Certificate of Occupancy shall be posted in a frame having a size sufficient to accommodate properly the Certificate of Occupancy.

(d) The frame shall be faced with glass or other transparent facing which will permit the Certificate of Occupancy to be read without difficulty.

(e) Frames shall be constructed of corrosion resistant metal or durable [*sic*] impact and flame resistant plastic.

(f) Frames shall be constructed in such manner as to prevent removal of the facing or the Certificate of Occupancy, without the use of special tools.

(g) Certificates shall be placed in such location as to be readily available to interested persons, and the bottom of the frame shall be located between 54 to 66 inches above the floor.

(h) Sufficient lighting shall be provided to make the Certificate of Occupancy legible at all times when the building is occupied.

(i) In place of posting the Certificate of Occupancy in a location specified under §4-01(b), it may be located as specified in this rule but only in those buildings where there is a resident caretaker or superintendent on the premises or where there is a building manager on the premises and where such caretakers, superintendents or managers or their assistants are present in the building at all times when the building is occupied. In such buildings, the Certificate of Occupancy may be posted within the entrance hall of the apartment or office of the caretaker or superintendent or inside the entrance to an office of a building manager. The Certificate of Occupancy shall be posted in such locations in the manner specified by the foregoing rules.

(j) A diagrammatic plan approved by the Department of Buildings, as required by §27-564 of the Administrative Code, shall be posted in accordance with the requirements for a Certificate of Occupancy indicated in these rules showing:

(1) the weight of any piece of machinery or equipment weighing more than 1,000 pounds and its identifying description and location.

(2) the maximum design wheel load and the total maximum

weight of any vehicle that may be brought into the building.
(3) the equivalent uniform partition loads, or in lieu of this, a statement to the effect that the design was predicated on actual partition loads.
A diagrammatic key plan shall not be required where the above information is clearly noted on the posted Certificate of Occupancy.
Section 4-01(j) shall not apply to any structure or portion thereof erected and altered in compliance with any code in effect prior to December 6, 1968. Notice of the permitted floor loads in such buildings shall be posted as required by the former code.

CHAPTER 5 CONCRETE

§5-01 Conveyance by Pumping Methods.
The specified compressive strength f'c, of concrete conveyed by pumping methods shall not exceed 5,000 pounds per square inch.
(b) *Mix Proportioning.*
(1) All controlled concrete to be pumped shall:
(i) Comply with all provisions of §27-605: Mixes
(ii) [*sic*] Normal and Heavyweight Concrete to [*sic*] be proportioned in accordance with ACI 211.1-74, utilizing Table 1.

Table 1. Volume of Coarse Aggregate per Unit of Volume of Concrete[1]

Maximum size of aggregate	Volume of dry-rodded coarse aggregate per unit. Volume of concrete for different finness** Moduli of Sand[2]			
	2.40	2.60	2.80	3.00
3/8	.475	.456	.437	.418
½	.561	.542	.523	.504
¾	6.27	.608	.509	.570
1	.675	.656	.637	.617
1 ½	.712	.693	.675	.655
2	.741	.722	.703	.684
3	.779	.760	.741	.722

1.Values established at Median-Point (reduced 5%). See footnote Table 5.3.6 ACI 211.1-74.
2.The type and gradation [*sic*] of the course aggregate, delivery system and job conditions may require these values to be varied. However in no event shall the variations exceed the maximum allowance noted in ACI 211.1-74 Table 5.3.6.

(iii) For sand lightweight concrete [*sic*] proportioned in accordance with ACI 211.2.-69 utilizing Table 2 except that the air dry unit weight of the concrete may exceed 115 lb. per cu. ft. when tested at age 56 days in accordance with procedure in ASTM C 567.

Table 2. Volume of Coarse Lightweight Aggregate per Cubic Yard of Concrete[1]

Maximum size lightweight aggregate, in	Fineness Module of Natural Sand 2.40	2.60	2.80	3.00
	Course* aggregate cu. Ft. per yard[2]			
3/8	9.3	8.9	8.5	8.1
½	11.1	10.7	10.3	9.9
¾	13.2	12.8	12.4	12.0

Notes:
1.Volumes are based upon lightweight aggregate at a total moisture content of 8 percent in loose conditions as described in ASTM C29.
2.These values may be increased based upon the type, gradation [*sic*] and moisture content of the aggregates, delivery system and job conditions.

2) (i) The type, gradation [*sic*] and moisture content of the aggregate delivery system and job conditions may affect the slump necessary at the mixer for the proper conveying of the concrete. For these reasons in addition to the recommended mix established from the preliminary trial mix data obtained in accordance with §27-605(a)(2), two alternate mixes also shall be recommended. These alternate mixes shall be based upon the water cement ratio curve in the preliminary test data to produce concrete having slumps greater than the maximum specified in §27-605(a)(2) in increments of 1-inch for concrete manufactured with gravel or stone aggregate but [*sic*] not to exceed 8 inches or increments of 2 inches for concrete manufactured with lightweight aggregates but not to exceed 9 inches.
(ii) It shall be permissible to use these mixes interchangeably during the course of the work, providing the slump at [*sic*] the mixer is equal to or less than that provided for the applicable recommended mix.
(iii) The recommended preliminary trial mix shall indicate the design unit weight in lbs. per cu. ft. of the fresh concrete and the estimated air dry unit weight at 56 days.
(c) *Testing and inspection of controlled concrete.*
(1) Those samples of concrete for test purposes required by RS-10-3, §4.3.1. which are designated to be "taken out of the bucket, hopper or forms" shall be obtained by passing a receptacle completely through the discharge stream of the delivery line or by completely diverting the discharge into a container. Transport the sample concrete to the place where fresh concrete tests of slump, air content, temperature and unit weight are to be performed and where specimens for strength tests are to be molded in accordance with RS-10-51 and RS 10-52 as directed by the Architect or Engineer designated for controlled concrete inspection. Each of the foregoing three (3) test cylinders per one hundred and fifty (150) cubic yards required under §4.3.1 of RS 10-3 shall be taken from a different delivery vehicle.
(2) Where the concrete is discharged directly into the forms by pumping methods the slump taken at the end of the delivery line shall be used to determine conformance with the slump specified for the work.
(3) The results of tests of samples taken at the end of the pump delivery line shall be shown on the same report with corresponding tests of samples taken from the same batch at the mixer.
(4) (i) Included in the duties of the on-site inspector as provided by §27-607 shall be:
(A) That water is added only to the mixer or under the following circumstances to the hopper of the pump:
When a portion of the concrete is discharged from the mixer into the pump hopper at a slump below that specified in the preliminary trial mix and too low for pumpability, water may be added to this concrete in the pump hopper to bring it to the specified slump provided all pumping action is stopped. Before pumping is resumed the concrete in the hopper must be thoroughly re-mixed for a minimum period of 2 minutes after all of the water has been added. If the concrete cannot be properly re-mixed it shall be removed from the hopper and discarded.
The balance of the batch in the mixer shall be adjusted to the specified slump before further discharge.

(B) Examination of the conveying line for leakage of cementitious material.
(C) Verify that no aluminum pipe is used.

(ii) Included in the duties of the batch plant inspector as provided for in §27-605(a).
(5) A.B., shall be:

(i)To make adjustments for variations in fineness modulus of the fine aggregate as per ASTM C 33, Section 3.4. When the difference of fineness modulus of the fine aggregate is more than 0.2 for each 0.2:
(A) Below the Design Fineness Modulus deduct 50 lbs. from the dry batch weight of the fine aggregates and add 50 lbs. for normal weight (20 lbs. lightweight) to the dry batch weight of the coarse aggregates.
(B) Above the Design Fineness Modulus add 50 lbs. to the dry batch weight of the fine aggregate and deduct 50 lbs. for normal weight (20 lbs. lightweight) from the dry batch weight of the coarse aggregates.

(ii) To test lightweight aggregates for total moisture content each day before the first concrete for the project is batched and thereafter at appropriate intervals during the day or whenever a moisture change may be evident. The moisture content of each test shall be reported on the corresponding inspection ticket accompanying each load of concrete.

(iii) To immediately notify the concrete producer and the contractor when the total moisture content of the lightweight aggregate [*sic*] is 8 percent or less, that a change to an alternate mix may be necessary to maintain the water cement ratio and the slump specified for the work as determined at the end of the delivery line**.**

(d) *Job Practices.*
(1) Slump shall be maintained as uniformly as possible from batch to batch in conformance with the specified slump.
(2) Delivery systems shall be in good condition. No dented or worn thin section shall be used.
(3) All connections shall have clean grooves, be equipped with gaskets and securely coupled except at the end of the system where sections are being reconnected gaskets may be omitted.
(4) All vertical risers shall be straight and firmly secured. Pipe bends shall also be restrained against movement caused by the pumping action.
(5) Clean out procedures shall assure that there is no uncontrolled ejection of concrete or clean out devices at the end of the delivery line. If pressure water is used for cleanout, care shall be taken that the water is not deposited into the form.
(6) Care shall be taken that portland cement and sand slurry used to prime the delivery line shall not be deposited in the form without the approval of the architect or engineer designated for Controlled Inspection. All other types of printing liquids shall not be permitted to be placed in the form.
(7) Pumping aids, coloring agents, and all other admixtures shall be permitted only when included in the preliminary trial mix design.
(8) Flexible hose, used in the system shall be handled so as to permit the full flow of the concrete without restriction, reduction of cross sectional area of kinking.
(9) Free hanging, coupling connected sections of flexible delivery line shall have additional restraint between each section across each joint.
(10) Personnel shall avoid standing close to the outlet end of the concrete pump.

(e) *Quality Control.*
(1) The engineer who designed the structure shall specify on his plans, or an amendment thereto, that concrete may be conveyed by pumping.
(2) The placement of concrete by pumping shall be suspended on any project where required test reports are not submitted to the Borough Superintendent within six weeks from the date of placement and sampling.

§5-02 Licensing of Concrete Testing Laboratories.

(a) *General.* (1) Each laboratory shall have in responsible charge a Director who shall be professionally qualified and who shall personally supervise all technical functions of the laboratory relating to testing of concrete and concrete materials. Sections 27-605 and 27-607 of the Administrative Code require that a licensed Professional Engineer or a Registered Architect supervise the testing of materials and the inspection of concrete construction.
(2) All technicians shall be qualified to perform all tests they may be required to conduct under the supervision of the Director.
(3) The laboratory shall annually furnish to the Department of Buildings a list of all personnel who are supervising and performing tests and their qualifications.

Note: §502(b)(6) shall also be complied with.
(4) The laboratory shall furnish to the Department of Buildings a list of all the equipment used to perform tests on concrete and concrete materials.
(5) The laboratory shall request and have an inspection made of its procedure and equipment by the "Cement and Concrete Reference Laboratory" whenever the "Cement and Concrete Reference Laboratory" is inspecting laboratories in this area on its cyclical tour of inspection. These inspections shall be made at the cost and expense of the laboratory seeking a license. A copy of the inspection report shall be promptly submitted to the Department of Buildings.
(6) The laboratory shall correct within 10 days any condition ordered by the Department of Buildings which in its judgement may adversely affect the results of any test.
(7) A license shall be issued to each applicant upon proof of compliance with these rules and upon payment of a fee of one hundred dollars ($100).
(8) The annual renewal fee shall be fifty dollars ($50).
(9) A violation of any of these rules or the falsifying or misrepresentation of any fact in any required report shall constitute cause for revocation or suspension of the license by the Commissioner, after a hearing upon prior notice of at least ten calendar days. However, notwithstanding the foregoing, when the public safety may be imminently jeopardized or when false report has been made, the Commissioner shall have the power, pending a hearing and determination of charges, to forthwith suspend the license for a period not exceeding five working days. The presence of batch tickets at a plant filled in on any day other than the day the specific batch is to be delivered to the construction site, whether signed or unsigned, shall constitute a false report.
(10) All reports submitted by the laboratory shall bear its name and its license number.
(11) Renewal of licenses or certificates of qualification, heretofore issued, and issuance of new licenses shall be conditioned upon and subject to the provisions of §§26-131 through 26-139 and 26-

200 through 26-204 of the Administrative Code.
(12) The laboratory shall display a copy of its license on its premises.
(13) The Director shall furnish all of his employees an identification card with a photograph of the employee affixed thereto.
(14) The Director shall maintain a daily record of the activities of all of his employees, indicating the time of departure to and return from batch plant or construction site inspections, the construction project to which the employee is assigned, and the batch plant visited. This record shall be maintained for 2 years and shall be made available to the department personnel.

(b) *Personnel.*
(1) The Director shall be qualified by virtue of education and experience to supervise all tests of concrete and concrete materials conducted by the laboratory. He shall be qualified to practice Professional Engineering or Architecture in the State of New York.
(2) All technicians performing tests on the chemical composition of cement shall be qualified analytical chemists.
(3) All other technicians, field personnel, and all personnel having direct supervision of technical staff shall be qualified by education and experience to take samples and perform required tests. Qualifying education and experience may include a degree in engineering, suitable experience in concrete construction, suitable training in concrete industry sponsored programs and the like.
(4) Satisfactory proof of such qualifications for concrete field testing technicians shall include certification resulting from the ability to pass a qualification test following the guidelines of the American Concrete Institute as set forth in ACI publication CP-2(82).
(5) All concrete field testing technicians shall be qualified pursuant to §5-02(b)(4) on or before July 1, 1985.
(6) The Department of Buildings shall annually publish in the City Record, on or before the first of July, a listing of concrete field testing technicians qualified pursuant to §5-02(b)(4).
(7) The Director shall submit to the department an affidavit that all technicians and field personnel are qualified to perform their designated tasks and shall keep on the premises a record of the qualifications of all personnel, which shall be made available to the department upon request.

(c) *Reports.* Reports shall be presented in a form acceptable to the Department of Buildings.

(d) *Tests.*
(1) The following specifications of the American Society for Testing and Materials (ASTM) shall be considered as part of these rules:

C29-78 Test for Unit Weight and Voids in Aggregate.
C31-85 Methods of Making and Curing Concrete Test Specimens in the Field.
C39-84 Test Method for Compressive Strength of Cylindrical Concrete Specimens.
C40-84 Test Method for Organic Impurities in Fine Aggregates for Concrete.
C42-84a Methods of Obtaining and Testing Drilled Cores and Sawed Beams of Concrete.
C70-79 Standard Method of Test for Surface Moisture in Fine Aggregate.
C88-83 Test Method for Soundness of Aggregates by Use of Sodium Sulfate or Magnesium Sulfate.
C109-86 Test Method for [*sic*] Compressive Strength of Hydraulic Cement Mortars (Using 2-inch or 50 cube Specimens).
C114-85 Method of Chemical Analysis of Hydraulic Cement.
C115-79b Standard Method of Test for Fineness of Portland Cement by the Turbidimeter.
C117-84 Test Method for Material Finer than 75-um (No. 200) Sieve in Mineral Aggregates by Washing.
C127-84 Test Method for Specific Gravity and Absorption of Coarse Aggregate.
C128-84 Test Method for Specific Gravity and Absorption of Fine Aggregate.
C136-84a Method for Sieve Analysis of Fine and Coarse Aggregates.
C138-81 Standard Method of Test for Unit Weight, Yield and Air Content (Gravimetric) of Concrete.
C143-78 Test Method for Slump of Portland Cement Concrete.
C151-84 Test Method for Autoclave Expansion of Portland Cement.
C172-82 Method of Sampling Fresh Mixed Concrete.
C173-78 Standard Method of Test for Air Content of Freshly-Mixed Concrete by the Volumetric Method.
C183-83a Method of Sampling and Acceptance of Hydraulic Cement Mortar.
C184-83 Test for Fineness of Hydraulic Cement by the 150-um (No. 100) and 75-um (No. 200) Sieves.
C187-86 Test Method for Normal Consistency of Hydraulic Cement.
C190-85 Test Method for Tensile Strength of Hydraulic Cement Mortars.
C191-82 Test Method for Time of Setting of Hydraulic Cement by Vicat Needle.
C192-81 Method of Making and Curing Concrete Test Specimens in the Laboratory.
C204-84 Test Method for Fineness of Portland Cement by Air Permeability Apparatus.
C230-83 Specification for Flow Table for Use in Tests of Hydraulic Cement.
C231-82 Standard Method of Test for Air Content of Freshly-Mixed Concrete by the Pressure Method.
C260-86 Specification for Air-Entraining Admixtures for Concrete.
C266-77 Test for Time of Setting of Hydraulic Cement by Gillmore Needles.
C494-86 Specification for Chemical Admixtures for Concrete.
C131-81 Resistance to Abrasion of Small-Size Coarse Aggregate by Use of Los Angeles Machine.
C535-81 Resistance to Degradation of Large-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine, Test for
C803-82 Penetration Resistance to Hardened Concrete, Test for
E4-83a Practices for Load Verification of Testing Machines.

(2) All testing of cement shall be conducted in accordance with the Standard Specifications of the American Society for Testing and Materials (A.S.T.M.).

(e) *Curing and testing of concrete specimens.*

(1) The laboratory shall be equipped with a suitable size enclosed room for the curing of all concrete test specimens. It shall be of such size that specimens can be easily handled during storage and preparation for testing. The room shall be equipped with the necessary equipment to maintain a temperature of 73.4 degrees ± 3.0 degrees F. at all times, as per A.S.T.M. C-192. The room also shall be equipped to maintain a relative humidity of 95 percent plus in order that the specimens will be maintained in a moist condition in which free water is on the surface at all times. The test specimen shall not be exposed to a stream of running water.
(2) The laboratory shall have equipment for determining relative humidity and temperature of the room and recording devices to monitor them.
(3) The laboratory shall be equipped with a power operated testing machine with a variable speed control. It shall be of sufficient capacity and capable of applying load without shock at a rate of loading prescribed in §4(b) of A.S.T.M. C-39.
(4) The testing machine shall be equipped with two steel bearing blocks with hardened faces, one of which is a spherically seated block that normally will bear on the upper surfaces of the specimen and the other a plain rigid block on which the specimen will rest. The bearing faces of these blocks used for compression testing of concrete shall have a Rockwell hardness of not less than 55 HRC. The bearing faces shall be at least as large and preferably slightly larger than the surface of the specimen to which the load is applied. The bearing faces when new shall not depart from a plan by more than 0.0005-inch at any point and they shall be maintained within a permissible variation limit of 0.001-inch. The movable portion of the spherically seated block shall be designed so that the bearing face can be rotated freely and tilted through small angles in any direction.
(5) The machine, if hydraulic, shall be equipped with a dial gauge having a sufficient diameter to allow the increments of load to be read within plus or minus 1/2 percent of the load being applied.
(6) The machine shall show a certificate of calibration or verification within the time limits set by requirements of A.S.T.M. E-4. If any major repairs have been made on the testing machines, the machine shall be re-calibrated.

(f) *Equipment.* The laboratory shall provide and maintain in proper working condition the following equipment as a minimum requirement:
(1) Necessary for concrete mix designs:
(i) Concrete mixer
(A) 1 1/2 cubic foot capacity
(B) 3 1/2 cubic foot total drum volume
(ii) Slump cone 8-inches in diameter at the base and 4-inches at the top of a height of 12-inches and conforming to A.S.T.M. C143.
(iii) A tamping rod consisting of a round, straight steel rod 5/8-inch in diameter.
(iv) Cylindrical metal measures of 1/2 cubic foot and a cubic foot capacity conforming to the requirements of A.S.T.M. C138.
(v) A sturdy, flat plate about 15-inches square for striking off the concrete in the measure.
(vi) Appropriate air meter.
(vii) Necessary scoops, wood floats, trowels.
(viii) A balance or scale sensitive to 0.1 pound, having a capacity of not less than 100 pounds.

(1) Necessary equipment for preparation of concrete test cylinders:
(i) for compression tests:
(A) Capping plates for cement or plaster caps. Plate glass at least 1/4-inch thick, or machined metal plates at least 1/2-inch thick or polished stone plates of suitable materials, such as granite or diabase and at least 3-inches thick. A capping plate shall be at least 1-inch greater in diameter than the specimen.
(B) Capping plates for use with mixtures of sulphur and granular materials, or similar materials and dimensions, recessed to retain the molten mixture.
(C) The surface of any capping plate shall not depart from a plane by more than .002-inch in the diameter of the specimen.
(D) Straight edge and feeler gauges to check planeness of capping plates and caps.
(E) Calipers and rule for checking size of cylinders.
(F) Controlled temperature melting pot if sulphur mixtures are to be used. Mixing pans, scoops, spoons, trowels, spatulas, etc., if cement or plaster caps, are to be used.
(G) Appropriate grinding equipment may be substituted for the capping equipment.
(ii) Materials Required:
(A) For cement or plaster caps, any of the following:
Type I Portland Cement
High Alumina Cement (Lumnite)
Type III Portland Cement
High strength gypsum plasters such as: Hydrostone and Hydrocal White
(Note: Plaster of Paris is not satisfactory).
(B) For sulphur caps either of the following:
Laboratory prepared mixtures of sulphur and granular materials
Proprietary mixtures such as: Vitroband, Leadite, Cylcap, etc.
(Note: See A.S.T.M. C1982 for limitations of various type caps).
(3) Necessary for analysis of fine and coarse aggregates:
(i) Square or round mesh sieves, Pan Nos. 200, 100, 50, 30, 16, 8, 4, 1/4-inch, 3/8-inch, 1/2-inch, 3/4-inch, 1-inch, 1 1/2-inches, 2-inches, 3-inches, 3 1/2-inches, No. 12.
(ii) Sieve shaking equipment.
(iii) Scales:
(A) Gram scale sensitive to at least 0.1 gram.
(B) Gram scale with at least 5,000 gram capacity and sensitive to 1 gram.
(C) Pound scale sensitive to 1/4-ounce.
(D) Steel brush to brush sieves.
(E) Oven-heat continuously between 221 degrees and 230 degrees F.
(F) Containers for holding solutions.
(G) Perforated containers for immersing aggregates in solutions - wire baskets.
(H) Calibrated Volumetric (milliliters) graduate, 500 milliliters capacity.
(I) Conical metal mold 1 1/2-inches diameter at top, 3 1/2-inches diameter at bottom, 2 7/8-inches high.
(J) Tamping rod - 12-ounces, having a flat circular tamping face 1-inch in diameter.
(K) Tamping rod - 5/8-inch diameter, 24-inches length.
(L) Cubic foot cylindrical measure either 1/2 cubic foot, 1/4 cubic foot, 1/3 cubic foot, 1/10 cubic foot or 1 cubic foot.
(M) 500 milliliters flask.
(N) Thermometer - heats over 100 degrees C.

(4) Necessary for field testing and inspection:
(i) Thermometer, 0 degrees-200 degrees F.
(ii) Scale, 100 lbs. capacity.
(iii) 6-inch round by 12-inch long container.
(iv) Slump cone and 5/8-inch by 24-inch rod.
(v) Air meter.
(vi) Rule, 12-inches.
(g) *Cement testing.*
(1) *Introduction.* Cement testing shall be done in laboratories equipped to make the basic tests required for evaluating cement.
(2) *Division into physical and chemical tests.* These tests are divided into two parts, physical and chemical and all physical test specimens shall be prepared in a room or area where the temperature is controlled within the limits of 20 to 27.5 degrees C. and the humidity at not less than 50 percent.
(3) Physical test equipment:
(i) Analytical balance complete with calibrated weights.
(ii) Scale of 2,000 gram capacity accurate to 0.1 percent.
(iii) Wagner Turbidimeter or Blaine permeability apparatus calibrated with standard cement from the Bureau of Standards.
(iv) One 325 mesh sieve as well as 100, 50, 30 and 16 mesh sizes.
(v) Electrically driven mixer bowl and paddle.
(vi) Flow table and flow mould.
(vii) Trowel and tamper for cubes.
(viii) Cube moulds and sealing compound.
(ix) Autoclave, moulds and comparator with steel reference bar.
(x) Vicat apparatus and moulds.
(xi) Gillmore needles and glass plates for samples.
(xii) LeChatelier flask.
(xiii) Supply of graded Ottawa Sand.
(xiv) Glass graduates of 100, 150 and 200 ml. capacity.
(xv) Cylindrical measure of 400 ml.
(xvi) Straight edge and spatula.
(xvii) Calibrated testing machine of not less than 30,000 lbs., capacity equipped with spherically seated upper steel block of not more than 3 1/2 inch [*sic*]diameter.
(4) A.S.T.M. standard tests for cements. Standard tests for cements as required by A.S.T.M. are as follows:
Fineness
Soundness
Time of setting
Air content of mortar
Compressive tests of 2-inch by 2-inch cubes.
(5) Chemical composition of cement:
(i) The laboratory shall be equipped with an analytical balance and standard weights, platinum and porcelain crucibles, curettes, pipettes, etc.
(ii) Distilled water and all reagents necessary for the determination of the oxides of silica, iron, aluminum, magnesium, sulphur, calcium, and insoluble residue by one of approved.
(iii) All tests shall be performed in a room equipped with fume chamber, gas burners, working benches, by a qualified analytical chemist.
(iv) Special tests such as the alkalis of sodium and potassium shall be made as outlined by the A.S.T.M.

§5-03 Approval of Prequalified Concrete Mixes.

(a) *Source of concrete.*
Concrete proportioned according to prequalified mixes shall be produced only from batch plants, approved by the Commissioner pursuant to rules and regulations of the department.
(b) *Mix designs not previously accepted.*
Each concrete producer or group of producers seeking approval of mix designs that have not been previously accepted by the Department shall file an application with the M.E.A. Division, Department of Buildings at the address provided in the City's website, http://www.nyc.gov. and shall furnish the following:
(1) A compilation of the proposed mix designs listing the batch weights, types of aggregates and other ingredients together with a numbering system that will provide identification of each mix for testing and recording purposes. Each compilation shall contain a title sheet upon which a master list of all the mixes shall be designated. Opposite each mix a space shall be provided for the signature of the examiner and the date of the approval of that particular mix.
When a mix has been approved for use as a "PREQUALIFIED MIX", the examiner shall affix his signature and the date in the space provided, and then he shall affix the approval stamp of the Commissioner of Buildings.
(2) For each mix utilizing a different combination of aggregates, admixtures, cement type, water-cement ratio, etc., a report of preliminary trials made by a testing laboratory licensed under §26-200 together with an attestation by the Architect or Engineer who supervised the making of the preliminary tests. The laboratory report shall include the following information:
(i) *Fine and coarse aggregate.*
Type (natural or manufactured sand, gravel, stone, etc.).
Weight per. cu. ft. dry rodded.
Specific gravity.
Percentage of voids.
Percentage of absorption.
Fineness modulus (see ASTM Definitions C125).
Gradation and comparison to ASTM C-33; also size of coarse aggregate.
(ii) Cement-type.
(iii) Batch weights.
(iv) Admixtures-type and amount.
(v) Test results of each particular mix design being submitted for approval. Separate tests shall be made for each compressive strength.
(vi) Attestation of the Architect or Engineer engaged by the producer or producers to supervise the tests.
(vii) Board of Standards and Appeals Cal. No. for items requiring Board approval, such as lightweight aggregate admixtures, etc.
(viii) Such other information required by §§27-605(a) (1), (2) and(3).
(3) Each concrete producer or group of producers that submits for approval the information required hereabove, shall be assigned an application number which is to be known as the "PREQUALIFIED MIX REFERENCE NUMBER". This REFERENCE NUMBER shall be valid only for the calendar year for which it is issued. All applications shall be submitted before November 1 of each year for review and for prequalification for the calendar year next following.
When the concrete proposed for use is to be produced using the mix designs from a summary compilation that has been approved, the architect or engineer who has been retained to make or supervise the Controlled Inspection shall verify that the mixes have been approved as

"PREQUALIFIED MIXES" and shall file a statement for each project setting forth the PREQUALIFIED MIX REFERENCE NUMBER from which the concrete mix proportions are to be selected.

(c) *Mix designs previously approved and used.*

(1) Each concrete producer making an application shall be assigned a PREQUALIFIED MIX REFERENCE NUMBER in the same manner as designated in Rule §5-03(b)(3).

(2) The application shall set forth the details of location, date and laboratory that pertained to the previous project. It also shall include a statement setting forth the average strength obtained from tests made at the job, together with a summary of the total number of tests made and, of those tests, how many fell below the specified strength.

(3) A copy of the laboratory report that was originally accepted shall be submitted. It shall contain the information listed under Rule §5-03(b)(2) (Reports with the water-cement ratios selected at a point on the curve established by preliminary mix tests corresponding to a strength of concrete 15% higher than the minimum ultimate strength called for on the plans shall not be accepted, unless the water-cement ratio complying with section §27-605(a)(2) can be determined).

(4) The Architect or Engineer retained for the Controlled Inspection shall file a statement similar to the one mentioned in §5-03(b)(3).

§5-04 Approval of Concrete Production Facilities.

(a) The scope of these rules relating to facilities for the production of concrete under Article 5 of Subchapter 10 of Chapter 1 of Title 27 of the Administrative Code shall be applicable to batch plant installations of either a permanent or temporary nature, located on or off the site of construction.

(b) Application for approval of a batch plant shall be made on behalf of the owner by an engineer on department forms filed with the Commissioner of Buildings at the address provided in the City's website, http://www.nyc.gov. No off-site batch plants will be acceptable unless the legal use of the premises as a batch plant has been previously approved by either the Department of Buildings or the Department of Small Business Services.

(c) The concrete producer shall supply a list of all plant equipment to be used in the batching of concrete on forms furnished by the department.

(d) The concrete producer shall engage a Licensed Professional Engineer, not in his regular employ, to inspect the batching facilities. This inspection shall be made at the cost and expense of the concrete producer seeking plant approval. A copy of the verification of the inspection shall be submitted with the application for plant approval on forms furnished by the department.

(e) The applicant shall follow inspection procedures and complete the check list on forms furnished by the department which shall accompany the application for plant approval.

(f) The concrete producer shall promptly correct any objection made by the department which in its judgement it deems may adversely affect the quality of the concrete being placed. Should the department find any objection because of the producer's failure to meet the necessary standards for plant approval, corrections shall be made within 30 working days after the receipt, by the producer, of a written notice from the department.

(g) Approval of plant facilities shall be fully reviewed every two years upon a renewal submission for approval by the concrete producer provided the plant is not relocated during the two-year period.

(h) If a concrete plant is relocated from the location as filed on the original application form after initial approval is received, a new submission shall be required.

(i) During the two-year approval period, if any equipment is changed, added to, modified or moved within the same premises as originally filed, notification will be sent to the Commissioner of Buildings, Materials and Equipment Acceptance Division at the address provided in the City's website, http://www.nyc.gov. Accompanying said notification shall be an amendment to the application verified by an affidavit from a professional engineer not in the regular employ of the concrete producer stating that the modification meets all requirements of the check list.

(j) The concrete producer shall be required to produce concrete in accordance with all applicable provisions of the Building Code and all pertinent reference standards referred to therein.

(k) The concrete producer shall be required to submit attestations and certifications specified in §§27-605 and 27-606 promptly for the appropriate type of concrete for each construction project. Where automated batching equipment is used, the tapes recording the batched weights shall be available for inspection for a period of two years.

(l) Concrete produced for the construction of buildings subject to controlled inspection of concrete shall not be batched and delivered to the construction site unless a person designated for batch plant inspection is present at the plant. However, it shall be permissible to deliver the concrete in the absence of the person designated for inspection when there are extenuating circumstances, provided the design architect or engineer and the architect or engineer designated for control inspections are notified promptly by phone with a `circumstances under which the uninspected concrete was shipped and shall supply all necessary facts such as the times and dates and volume of concrete batched and delivered, the design strength and mix proportions, and the application number, location, and contractor that the concrete is being delivered to. Similarly, the appropriate Borough Superintendent's office is to be promptly notified by phone with a follow-up letter together with copies of the other required notification letters.

(m) Approval shall be for a period of two years. However, temporary approval of batch plants may be authorized at the discretion of the Commissioner for a period of ninety days, provided an application for approval with necessary information furnished on appropriate forms is filed, and provided the application is otherwise acceptable in other respects. Temporary approvals may be renewed for additional ninety day periods, at the discretion of the Commissioner.

(n) Concrete producers shall be required to permit complete plant inspections by department personnel periodically.

(o) A copy of the batch plant approval will be forwarded to the owner of each facility and shall be posted in a conspicuous place at the plant.

(p) A violation of any of these rules or the falsifying or misrepresentation of any fact in the application or in any report shall constitute cause for revocation or suspension of any approval by the Commissioner, after a hearing upon prior notice of at least ten calendar days. For temporary approvals,

the falsifying or misrepresentation of any fact in the application or in any report shall be cause for immediate revocation of such temporary approval by the Commissioner. However, notwithstanding the foregoing, when the public safety may be imminently jeopardized, or when a false report has been made, the Commissioner shall have the power, pending a hearing and determination of charges, to forthwith suspend any approval for a period not exceeding five calendar days.

CHAPTER 6 CRANES

§6-01 Erection and Dismantling of Climber/Tower Cranes. An Erection and Dismantling Plan and Procedure for Climber/Tower Cranes, other than truck and crawler mounted tower cranes; shall be submitted to the Crane and Derrick Division of the Department of Buildings by a Licensed Professional Engineer or Registered Architect for the erection of any such Climber/Tower Cranes.
The procedure and plan submitted shall include the following:

(a) Identification of the equipment used; including all machines used in the erection or dismantling.

(b) A detailed identification of the assemblies and sub-assemblies for the erection and dismantling of the equipment.

(c) Location of the equipment, sidewalk sheds (or Department of Transportation street closing permits, if applicable), surrounding buildings, protection for their roofs and the pick-up points and loads and radius of swing of all loads. In addition, the safe load from the approved load radius chart shall be submitted for lift radius.

(d) A weight list of all assemblies and sub-assemblies that are to be lifted. Components are to be clearly marked with their weight painted on the assembly or stamped on metal tags attached to the assembly.

(e) The center of gravity of all unsymmetrical components shall be located and shown.

(f) The manufacturer of the Climber/Tower Crane shall certify as to the weight of assemblies and sub-assemblies. Alternately the Professional Engineer or Registered Architect applicant shall certify an erection or dismantling weight list with indication how such weights were determined.

(g) The approved Erection and Dismantling procedure and sequence with weights of assemblies and sub-assemblies, shall be given to the operator of the crane or derrick and to the rigger prior to commencement of the work.

(h) All accepted or approved installed safety devices on a crane involved in the erection or dismantling procedure shall be calibrated within the preceding three months. The certification of the calibration shall be submitted to the Crane and Derricks Division. The safety device
.s of the Climber/Tower Crane shall be checked as a part of the inspection procedure.

(i) A time schedule including date and time of day that the erection or dismantling is to take place. Erection or dismantling shall not be conducted prior to sunrise, or subsequent to sunset, and shall be limited by
§24-224, of the Administrative (Air Pollution) Code.

(j) No Climber/Tower Crane shall be erected, operated, or disassembled in any roadway, sidewalk, or street unless a permit is first obtained from the Bureau of Highways of the NYCDOT.

(k) The Licensed Master Rigger or [*sic*] Licensed Climber/Tower Rigger, and the Site Safety Coordinators shall be present at the job site during erection and dismantling. Their names as well as the company performing the work, shall be included in the data submitted.

(l) Cranes used to erect or dismantle Climber/Tower Cranes or Derricks located either within the lot line or on the street shall be indicated; and continue to be subject to the on-site inspection permit Buildings Notice procedures but such application shall be submitted to the Cranes and Derricks Division.

(m) A load radius chart approved by the Cranes and [*sic*] Derricks Division of the Buildings Department shall be posted in the cabin of crane.

CHAPTER 8 DEMOLITION

§8-01 Commencement of Demolition. (a) *Definition*.
(1) Commencement of demolition. Commencement of demolition shall mean the removal of partitions, ceilings, flooring, windows, piping and fixtures for plumbing and heating or any component parts of a vacant building or structure to be demolished. The removal of interior wood doors shall not be considered commencement of demolition.
(2) Heavy duty and light duty sidewalks sheds. A sidewalk shed is for heavy duty use or light duty use.

(i) A heavy duty sidewalk shed is designed to carry a live load of at least 300 pounds per square foot (psf). Live load, including storage of materials, shall not exceed 300 psf unless the sidewalk shed is designed to carry a live load greater than 300 psf, and an application for a permit thereof is filed by a licensed architect or engineer and approved by the Department.

(ii) A light duty sidewalk shed is designed to carry a live load of at least 150 pounds per square foot. Storage of materials of any kind is not permitted on light duty sheds.

(b) No demolition of a building or structure shall commence until a complete application has been filed and a permit has been obtained from the Department of Buildings.

(c) Prior to filing of an application for a demolition permit, the applicant must submit a pre-demolition report to the Department and obtain a pre-demolition inspection and sign-off by the Department**.**

(d) *Posting of signs.* (1) Prior to the filing of an application for a demolition permit, the demolition contractor shall post a sign in a readily visible location on the front of the building to be demolished or on the sidewalk shed or other protective structure listed in §26-252(a) of the Administrative Code of the City of New York adjacent to such building with the following information:

Demolition Contractor
Name of the Contractor
Business Address
Business Telephone No.
Department of Buildings Complaint Number
Date of Expiration of Sidewalk Shed Permit, if applicable
A space shall be reserved on the sign for the posting of the demolition permit

(2) Where a sidewalk shed is erected, the sign shall also state whether it is a heavy duty sidewalk shed or light duty

sidewalk shed. If the shed is for light duty use, the sign shall include the statement that storage is not permitted on the shed.
(3) After a demolition permit is obtained, the sign shall also contain a copy of the approved demolition permit.
(4) The sign shall be posted prior to the commencement of demolition, shall measure 25 square feet and the lettering shall be block lettering with a minimum height of three inches. The sign shall be posted upon the wall or fence or shed and shall be of contrasting color from the background. No sign shall be required when the building to be demolished does not exceed 15 feet in height. The sign must be in place 24 hours prior to commencement of any demolition activity and remain visible at the site until all work is completed.
(5) Other than as set forth above and in 1 RCNY §27-03, there shall be no other information, pictorial representations, or any business or advertising messages posted on the sidewalk shed or bridge or other structure listed in §26-252(a) of the Administrative Code which is erected at the demolition site.

(e) Requirements for demolition permits.
(1) A complete application shall be filed with the Department, along with all the necessary reports and certifications.
(2) The building or structure, or affected part thereof, shall be vacant and unoccupied.
(3) All gas, electric, water, steam or other supply lines shall be disconnected and certifications by the respective utility companies or agency to that effect are to be filed pursuant to Administrative Code
§27-168. Where the use of electricity or water is required during demolition, such electric or water lines as are necessary may be maintained provided they are protected as required by the Departments of Building and Environmental Protection; provided further that the consent of the utility company is filed for the maintenance of the electric service and a certification is filed from the Bureau of Water Supply of the Department of Environment Protection that a permit for the use of water in the demolition has been issued.
(4) The building or structure shall be treated effectively for the extermination of rats and a certification shall filed to that effect by a licensed exterminator or the Health Department.
(5) Where a sidewalk shed is required a permit for its erection shall be obtained and the sidewalk shed erected in accordance with Administrative Code §27-1021.
(6) Where renewal for an application for a sidewalk shed or other protective structure listed in §26-252(a) of the Administrative Code of the City of New York and pursuant to §27-1021 of the Administrative Code is required, such application must be signed by the owner of the affected property.
(7) A permit will not be issued if the applicant demolition contractor has outstanding violations of the Building Code on other demolition jobs where such applicant (i) has failed to respond to notices of violation of an administrative tribunal issued for such violations within the time required by law and has failed to cure such default and/or (ii) has failed to appear on the return date or dates or any subsequent return date or dates of any summonses issued in a criminal proceeding for such violations and has failed to remedy such non-appearance and/or (iii) has failed to comply with orders to correct such violations and/or (iv) has failed to certify such correction to the department within the time required by law and has failed to remedy such non-compliance.

CHAPTER 9 RIGGING OPERATIONS

§9-01 Supervisory Responsibilities of a Licensed Master or Special Rigger. (a) *Applicability*. In accordance with section 26-172 of the Administrative Code, all rigging work, other than work exempted under section 26-173 of such code, must be performed by or under the supervision of a licensed special or master rigger. The rules in this section set forth the specific supervisory responsibilities of a licensed special or master rigger.

(b) *Definitions.*
Rigging Foreman. "Rigging Foreman" shall mean an individual, male or female, designated by a licensed master or special rigger in accordance with subdivision i of this section. Such person shall have the qualifications set forth in subdivision h of this section.
Critical Picks. "Critical Picks" shall mean rigging operations involving loads that:

(i) are at or above 95% of approved rated capacity of the crane or rigging equipment,

(ii) are asymmetrical or have a wind sail area exceeding 500 square feet,

(iii) may present a problem because of clearance, drift, or other interference,

(iv) are fragile or of thin shell construction and are not provided with standard rigging ears,

(vi) require multiple cranes or derricks (tandem picks), or

(vi) require out of the ordinary rigging equipment, methods or setup.

(c) *Planning*. Except as otherwise specifically provided in subdivision (g)(2) of this section, the licensee must personally plan the equipment set-up and operation of all rigging operations. This responsibility may not be delegated.

(d) *Supervision of rigging operations other than critical picks.* Except as otherwise provided in subdivision e of this section, a licensee need not be personally on site during rigging operations provided that a rigging foreman designated by the licensee pursuant to subdivision i of this section is continuously on site and he or she performs and/or manages the work under the off site supervision of the licensee as follows:
(1) the licensee and the rigging foreman at the work site are in frequent and direct contact with each other
during the course of the rigging operation,
(2) for work involving the use of cranes, derricks, work platforms, suspension scaffolds or other rigging setup where the safe founding or support of such equipment is a cause of concern (i.e. over sidewalks, roadways or yards where vaults or other subsurface structures exist; or where hooks or clamps are used on parapet walls to support hanging scaffolds, etc.) the licensee personally visits the work site to inspect and approve the rigging equipment founding and setup prior to commencement of rigging operations and each time the founding or support changes,
(3) the licensee is readily available to provide on site supervision should the [*sic*] need arise, and
(4) the rigging foreman has in his or her possession at the work site the "Certificate of License Record" of the licensee (tear-off) issued by the Department, which shall be presented upon the demand of any enforcement officer.

(e) Supervision of critical picks. The licensee must be continuously on site during critical picks and must personally perform or personally supervise all critical picks. Off site supervision of critical picks is not permitted.

(f) *Rigging Crew*. Except as otherwise provided in subdivision (g) of this section, all members of the rigging crew must be employees on the payroll of such licensee or where the license is used by the holder thereof for or on a behalf of a partnership, corporation or other business association as provided for in section 26-138(b) of the Administrative Code such members must be employees on the payroll of such partnership, corporation or business association.

(g) *Specially Crew*. Except as otherwise provided in this subdivision and except as provided for in section 26-138(b) of the Administration Code, the licensee and/or a rigging foreman designated by a licensee may not perform or supervise rigging work for another person, corporation, partnership on business association. Where rigging work is best handled by or requires crews of a specialty trade (e.g. handling hazardous materials or chemicals such as asbestos, or climbing, erecting or dismantling tower cranes) the licensee and/or a rigging foreman designated by such licensee may perform or supervise work on behalf of a person, partnership, corporation or business association engaged in such specialty trade, subject to the following conditions:

(1) the Cranes and Derricks Division of the department must approve the licensee's written request for such proposed rigging operation,

(2) the licensee must either plan the equipment setup and operation or be an active participant of the planning team,

(3) for loads of one thousand two hundred pounds or more and for all critical picks, the licensee must provide continuous on site personal supervision to the rigging crew,

(4) for loads below one thousand two hundred pounds which are not critical picks, the licensee need not be on site if a rigging foreman designated by such licensee is continuously on site.[*sic*] He or she manages the work under the off site supervision of the licensee in accordance with the conditions set forth in items (1), (2), (3), and (4) of subdivision (d) of this section,

(5) the licensee and/or his or her designated rigging foreman must have full authority to examine rigging hardware, to approve rigging setups, to mandate changes and to stop the job,

(6) the licensee is responsible for all aspects of rigging safety on the job, and

(7) the licensee shall confirm that members of the specialty crew are insured to the minimum requirements specified in section 26-178 of the code and are covered by worker's compensation by the specialty crew's employer.

(h) Qualifications for designation as a rigging foreman.

(1) An individual designated as a rigging foreman by a licensed special or master rigger shall:

(i) be an employee on the payroll and covered by the worker's compensation insurance of the licensee or the business association of the licensee,

(ii) be at least 18 years of age,

(iii) be able to read and write English,

(iii) be able to identify critical picks,

(iv) be familiar with the relevant sections of the Building Code, OSHA safety standards and industry safety practices,

(v) have been trained to react properly to mechanical malfunctions or adverse weather, and

(vi) be able to evaluate the fitness of the rigging crew, including, where applicable, the issuance of a certificate of fitness pursuant to section 9-03 of this chapter.

(2) An individual designated as a rigging foreman by a licensed special rigger shall, in addition to the qualifications set forth in paragraph one of this subdivision, have the following additional qualifications:

(i) have at least 1 year's practical experience in the hoisting and rigging business, and

(ii) be able to explain the risks incident to such business and precautions to be taken in connection therewith.

(3) an individual designated as a rigging foreman by a licensed master rigger shall, in addition to the qualifications set forth in paragraph one of this subdivision, have the following additional qualifications:

(i) have at least 5 years practical experience in the hoisting and rigging business, and

(ii) be knowledgeable about and be able to explain the risks incident to the following, where applicable to the particular job:

(A) rigging operations and precautions to be taken in connection therewith,

(B) safe loads and computation thereof,

(C) types and methods of rigging, and

(D) pertinent hardware such as ropes, cables, blocks, poles, derricks, sheerlegs and other tools used in connection with rigging operations.

(i) Designation of a Rigging Foreman. Designation shall consist of the filing of written notification with the Department's Licensing Division of the following information:

(1) A list of all rigging foreman employed by the licensee or the business association of the licensee. Each rigging foreman's full name, home address, and home phone number shall be included on the list.

(2) The notification shall be signed by the licensee, shall contain his or her license number and shall be on the business letterhead of the licensee or of the business association of the licensee. The notification shall contain a representation by the licensee that all of the rigging foreman designated by him or her have the qualifications specified in subdivision h of this section.

(3) The list must be updated within two weeks of any change in the reported information relating to designated individuals or within two weeks of the termination of a designation by the filing of a new notification listing all rigging foreman designated by the licensee. The new notification shall contain the information set forth in items (1) and (2) above. The new list will supersede any earlier filed notification.

(j) Photo Identification Card. The licensee shall issue a photo identification card (see Exhibit 1) to each rigging foreman designated by him or her with the licensee's signature affixed thereto. Such card shall be carried by the rigging foreman at all times while he or she is engaged in any of the duties requiring such designation and shall be presented upon the demand of any authorized enforcement officer. It shall be the responsibility of the licensee to retrieve the identification card when such designation is terminated. A designation shall be terminated by the licensee if (1) the person leaves the employ of the licensee or business association of the licensee, (2) the licensee finds that the designee is not competently performing his

or her duties or, (3) the licensee finds that the designee has acted in an unsafe or irresponsible manner in performing his or her duties.

(k) Responsibility. The designation of one or more rigging foreman shall not affect the licensee's and/or business association's responsibility or liability for all aspects of rigging safety including but not limited to the actions of rigging foreman, rigging crews and specialty crews, if any.

(l) Failure to comply with rules. If these rules are not complied with the Department may order that rigging operations stop, commence disciplinary action against the licensee and/or commence proceedings for the impositions of fines or civil penalties.

§9-02 Supervisory Responsibilities of a Licensed Master or Special Sign Hanger.

(a) *Applicability*. In accordance with section 26-182 of the Administrative Code, all sign hanging work, other than work exempted under section 26-184 of such code, must be performed by or under the supervision of a licensed sign hanger. The rules in this section set forth the specific supervisory responsibilities of a licensed special or master sign hanger.

(b) *Definitions*.

Sign Hanging Foreman. "Sign Hanging Foreman" shall mean an individual, male or female, designated by a licensed master or special sign hanger in accordance with subdivision h of this section. Such person shall have the qualifications set forth in subdivision g of this section.

Critical Picks. "Critical Picks" shall mean sign hanging operations involving loads that:

(i) are at or above 95% of approved rated capacity of the crane or rigging equipment,

(ii) are asymmetrical or have a wind sail area exceeding 1500 square feet,

(iii) may present a problem because of clearance, drift, or other interference,

(iv) are fragile or of thin shell construction and are not provided with standard rigging ears,

(v) require multiple cranes or derricks (tandem picks), or

(vi) require out of the ordinary rigging equipment, methods or setup.

(c) *Planning*. The licensee must personally plan the equipment set-up and operation of all sign hanging operations. This responsibility may not be delegated.

(d) *Supervision of sign hanging operations other than critical picks*. Except as otherwise provided in subdivision e of this section, a licensee need not be personally on site during sign hanging operations provided that a sign hanging foreman designated by the licensee pursuant to subdivision h of this section is continuously on site and he or she performs and/or manages the work under the off-site supervision of the licensee as follows:

(1) the licensee and the sign hanging foreman at the work site are in frequent and direct contact with each other during the course of the sign hanging operation,

(2) for work involving the use of cranes, derricks, work platforms, suspension scaffolds or other rigging setup where the safe founding or support of such equipment is a cause of concern (i.e. over sidewalks, roadways or yards where vaults or other subsurface structures exist; or where hooks or clamps are used on parapet walls to support hanging scaffolds, etc.) the licensee personally visits the work site to inspect and approve the rigging equipment founding and setup prior to commencement of rigging operations and each time the founding or support changes, and

(3) the licensee is readily available to provide on site supervision should the need arise, and

(4) The sign hanging foreman has in his or her possession at the work site the "Certificate of License Record" of the licensee (tear off) issued by the Department, which shall be presented upon the demand of any authorized enforcement officer.

(e) *Supervision of critical picks*. The licensee must be continuously on site during critical picks and must personally perform or personally supervise all critical picks. Off site supervision of critical picks is not permitted.

(f) *Sign Hanging Crew*. All members of the sign hanging crew must be employees on the payroll of such licensee or, where the license is used by the holder thereof for or on behalf of a partnership, corporation or other business association as provided for in section 26-138(b) of the Administration Code, such members must be employees on the payroll of such partnership, corporation or business association. Except as provided for in section 26-138(b) of the Administrative Code, the licensee and/or a sign hanging foreman designated by a licensee may not perform or supervise sign hanging work for another person, corporation, partnership or business association.

(g) *Qualifications for designation as a sign hanging foreman.*

(1) An individual designated as a sign hanging foreman by a licensed special or master sign hanger shall:

(i) be an employee on the payroll of and covered by the worker compensation insurance of the licensee or the business association of the licensee,

(ii) be at least 18 years of age,

(iii)be able to read and write English,

(iv) be able to identify critical picks,

(v) be familiar with the relevant sections of the Building Code, OSHA safety standards and industry safety practices,

(vi) have been trained to react properly to mechanical malfunctions or adverse weather,

(i)be able to evaluate the fitness of the sign hanging crew, including where applicable, the issuance of a certificate of fitness pursuant section 9-03 of this chapter,

(viii) be able to read plans and specifications relating to sign construction and erection, including supporting framework and other supports,

(xi) have a knowledge of the problems and practices of sign construction and hanging, and

(xii) be familiar with the equipment and tools used in sign installations.

(2) An individual designated as a sign hanging foreman by a licensed special sign hanger shall, in addition to the qualifications set forth in paragraph one of this subdivision, have at least 3 years practical experience in sign hanging work,

(3) An individual designated as a sign hanging foreman by a licensed master sign hanger shall, in addition to the qualifications set forth paragraph one of this subdivision, have at least 5 years practical experience in sign hanging work,

(h) *Designation of a Sign Hanging Foreman.* Designation

shall consist of the filing of written notification with the Department's Licensing Division of the following information:
(1) A list of all sign hanging foreman employed by the licensee or by the business association of the licensee. Each sign hanging foreman's full name, home address, and home phone number shall be included on the list.
(2) The notification shall be signed by the licensee, shall contain his or her license number and shall be on the business letterhead of the licensee or of the business association of the licensee. The notification shall contain a representation by the licensee that all of the sign hanging foreman designated by him or her have the qualifications specified in subdivision g of this section.
(3) The list must be updated within two weeks of any change in the reported information relating to designated individuals or within two weeks of the termination of a designation by the filing of a new notification listing all sign hanging foremen designated by such licensee. The new notification shall be filed in the manner and shall contain the information set forth in items (1) and (2) above. The new list will supersede any earlier filed notification.

(i) *Photo Identification Card.* The licensee shall issue a photo identification card (see Exhibit 1) to each individual designated by him or her as a sign hanging foremen with the licensee's signature affixed thereto. Such card shall be carried by the sign hanging foremen at all times while he or she is engaged in any of the duties requiring such designation and shall be presented upon the demand of any authorized enforcement officer of the city. It shall be the responsibility of the licensee to retrieve the identification card when such designation is terminated. A designation shall be terminated by the licensee if (1) the person leaves the employ of the licensee or business association of the licensee, (2) the licensee finds that the designee is not competently performing his or her duties or, (3) the licensee finds that the designee has acted in an unsafe or irresponsible manner in performing his or her duties.

(j) Responsibility. The designation of one or more sign hanging foremen shall not affect the licensee's and/or business association's responsibility or liability for all aspects [*sic*] of sign hanging safety including but not limited to the actions of sign hanging foremen and sign hanging crews.

(k) Failure to comply with rules. If these rules are not complied with the Department may order that sign hanging operations stop, commence disciplinary action against the licensee and/or commence proceedings for the imposition of fines or civil penalties.

§9-03 Minimum Requirements for Individuals Working on Suspension Scaffolds

(a) *Applicability*. In accordance with section 26-172 and 26-182 of the Administrative Code and Subchapter 19 of Chapter 1 of Title 27, "Safety of Public and Property During Construction Operations," the rules in this section establish minimum requirements for all individuals working on or operating suspension scaffolds, either performing construction or alteration work pursuant to a permit issued by the Department, or performing rigging or sign hanging work under the supervision of a licensed master or special rigger or a master or special sign hanger.

(b) Minimum Requirements. Only the following individuals may work on or operate a suspension scaffold:
(1) Where work is performed either by or under the supervision of a licensed rigger or sign hanger, the following persons may work on or operate a suspension scaffold:

(i) a licensed master or special rigger,

(ii) a licensed master or special sign hanger,

(iii) a rigging or sign hanging foremen as described in §9-01 and §9-02, or

(iv) a rigging or sign hanging crew member issued a certificate of fitness by the licensed rigger or sign hanger or his or her designate rigging or sign hanging foreman.

(2) (i) Where construction or alteration work is performed pursuant to a permit issued by the Department and, in accordance with §26-173 and §26-184 of the Administrative Code, such work is not performed by or under the supervision of a licensed rigger or sign hanger, the following persons may work on or operate a suspension scaffold:
(A) a person who holds a certificate of completion from a recognized scaffold safety training course as set forth in subdivision (d)(1) and (d)(3) of this section, or
(B) an apprentice in a recognized program, as set forth in subdivision (d)(2) of this section, or
(C) a person who holds a challenge examination certificate
(D) from a recognized administrator of challenge examinations, as set forth in subdivision (d)(4) of this section.

(ii) In accordance with §27-1045, it shall be the responsibility of the superintendent of construction to ensure that any person working on or operating a suspension scaffold on or the job site has the necessary certificate of completion or challenge examination certificate or is enrolled in a recognized apprenticeship program. The superintendent of construction must maintain written records to such effect.

(3) In addition to those persons listed in (b)(1) and (b)(2) above, a registered architect or professional engineer who is familiar with rigging hardware, rigging equipment setup and operation, pertinent Building Code provisions, Federal OSHA and State safety standards, emergency procedures, and recommended industry safe work practices may work on or operate a suspension scaffold, provided, however, that a registered architect or professional engineer not familiar with such codes, standards, procedures and practices may ride on a scaffold to perform inspections as long as the architect or engineer does not perform work from or operate the scaffold.

(b) Certificate of Fitness.

(1) *Minimum Requirements.* A person issued a certificate of fitness must:

(i) be found capable of performing the scaffold work in a safe and responsible manner by the issuer at the time of issuance, and

(ii) be able to communicate without difficulty with the supervising licensed rigger, licensed sign hanger, rigging or sign hanging foreman, or superintendent of construction on site, and either

(iii) possess a certificate of completion from a recognized scaffold safety training course in accordance with subdivision (d)(1) and (d)(3) of this section, or

(iv) be enrolled in a recognized scaffold apprenticeship program

in accordance with subdivision (d)(2) of this section, or

(v) possess a challenge examination certificate in accordance with subdivision (d)(4) of this section.

(2) *Persons Authorized to Issue a Certification of Fitness*. The following persons may issue a certificate of fitness:

(i) a licensed master or special rigger,

(ii) a licensed master or special sign hanger, or

(iii) a rigging or sign hanging foreman designated pursuant to sections 9-01 or 9-02 of these rules, as agent of the licensee.

(3) *Duty of Licensee to Ensure Compliance*. It shall be the sole responsibility of the licensee who issues the certificate of fitness, either personally or through a designated foreman, to ensure that the individual who receives the certificate meets the requirements of subdivision (c)(1) of this section for the particular job. It shall be the licensee's responsibility to maintain written records and copies relating to whom and when certificates were issued, as well as each certificate holder's certificate of completion from a recognized scaffold safety training course or apprentice program or challenge examination certificate, which substantiates the individual's fitness. If a person issued a certificate of fitness is later found to be unqualified or to have failed to work on a suspension scaffold in a safe and workmanlike manner, it shall be the licensee's responsibility to rescind the certificate of fitness and to remove the subject person from the job.

(4) The Certificate of Fitness. The certificate of fitness must include the name of the holder, the date of the issuance, the name, and license number of the licensee, the name, address, and telephone number of the company, and the signature of the issuer.

(i) Job-specific certificate of fitness for crew members employed only for a particular job or jobs. The certificate of fitness must contain the job location for which such certificate is valid as well as the duration of the job (see exhibit 2). Such certificate of fitness, as well as a photo identification of the certificate holder acceptable to the Department, must be available on site for inspection.

(ii) Certificate of fitness for regular members of the licensee's rigging or sign hanging crew. Notwithstanding the provisions of subdivision (c)(4)(i) of this section, at the option of the issuer, a permanent non job-specific photo identification or certificate of fitness may be issued to regular members of the licensee's business association's rigging or sign hanging crews.

(d) Recognized Scaffold Safety Training Courses and Apprenticeship Programs. (1) Recognized Scaffold Safety Training Course. Any organization (e.g. private, governmental, non-profit, or trade union) or institute may apply to the Department for recognition of its scaffold safety training course. Such application shall be made to the Department's Cranes and Derricks Division and shall include: instructors' qualifications, curriculum, teaching schedule, and materials used. The training course must include a significant field component, including instruction in rigging hardware (e.g. ropes, blocks, motors, scaffolds, controls, etc.), methods (e.g. reeving, suspension, startup procedures, netting, etc.), and applicable laws (NYC Building Codes and Rules, OSHA standards, etc.) The Department may participate in or observe any training course without prior notification, and reserves the right to rescind recognition. The Department shall inform or approve a recognized course in writing, and shall maintain a list of approved training courses. Any organization or institute that offers the recognized scaffold safety training course must also offer a challenge examination outlined in subdivision(d)(4) of this section, either free or at a nominal cost to all applicants.

(2) *Recognized Apprenticeship Program.* Any organization (e.g. private, governmental, non-profit, trade union) may apply to the Department for recognition of its scaffold safety training apprenticeship program. The requirements for recognition are the same as for a recognized scaffold safety training course as set forth in subdivision (d)(1) of this section. (3) *Certificate of Completion*. The organization providing a recognized scaffold safety training course or apprenticeship program may issue identification cards or certificates of completion to individuals who successfully complete the recognized course or program. The certificate of completion issued must include the name and address of the issuing organization, the date of issuance, and the name of the recipient, and must state "NYC DOB Recognized Scaffold Safety Training Course" or "Apprenticeship Program." Such certificate must be signed by the course administrator.

(4) *Challenge Examination and Challenge Examination Certificate*. The challenge examination shall be administered by organizations or institutes that conduct a recognized scaffold safety training course or recognized apprenticeship program. The challenge examination shall consist of written and hands-on tests that enable successful candidates to demonstrate a minimum level of knowledge and skills equivalent to graduates of a recognized scaffold safety training course or apprenticeship program. A person passing the challenge examination shall be issued a challenge examination certificate by the course or examination administrator. This challenge examination certificate shall be the equivalent to the certificate of completion and shall consist of similar data, format and signature as set forth in subdivision (d)(3) of this section. Written and hands-on tests for the challenge examination shall be submitted to and pre-approved in writing by the Department of Buildings, Cranes and Derricks Division. The Cranes and Derricks Divison reserves the right to monitor the test to ensure its quality and fairness, and to revoke any approval if guidelines are not adhered to. Organizations or institutes that offer recognized scaffold safety training or apprenticeship programs in English or in any other language must offer an equivalent challenge examination in the appropriate language to any applicant regardless of his or her gender, race, national origin, organization or union membership, religion or creed.

(e) Compliance. Failure to comply with the above rules, including but not limited to any person working on a suspension scaffold unable to produce either a valid certificate of fitness or, where applicable, a certificate of completion or a challenge examination certificate and a photo identification card, may result in the Department's ordering all work stopped, issuing violations, and commencing disciplinary action against the licensee, and/or commencing proceedings for the imposition of fines or civil penalties.

(f) Effective date. The provisions of this section 9-03 shall take effect on and after May 1, 2001.

Designation of Rigging or Sign Hanging Foreman

Picture

Contact number
[Work] W
[Pager] Pg
[Other]

I, [Rigger's/Sign Hanger Name]
a duly licensed [Master]/[Special][Rigger/Sign Hanger] License number [License Number], hereby declares [Name of Rigging or Sign Hanging Foreman] satisfies all requirements of a "Rigging or Sign Hanger Foreman" under NYCDOB rule §9-01 or 9-02 and under my supervision is appointed to oversee rigging safety and setup for [Company's Name]

[Name of Rigging/Sign Hanging Foreman]
[Address]

Signature of Licensee Date

Exhibit 1

Certificate of Fitness

for operating on a two point suspension scaffold

Name:
[Name of individual]

Work Location:
[Job site location]

Starting date:
[Commencement date]

Approx. duration: _____

I, [Licensed Rigger/Sign Hanger]
a duly licensed [license type] License number [License Number], deem the following individual fit to work on a two point suspension scaffold under my supervision or the supervision of my "Rigging or Sign Hanging Foreman"

[Company's Name]
[Address & Phone number]

Signature of Licensee Date

Exhibit 2

Certificate of Fitness

Picture

Contact number
[Work] W
[Pager] Pg
[Other]

I, [Licensed Rigger/Sign Hanger]
a duly licensed [license type] License number [License Number], deem the following individual fit to work on a two point suspension scaffold under my supervision or the supervision of my "Rigging or Sign Hanger Foreman"

[Company's Name]
[Address & Phone number]

[Name of Person Issued C.O.F.]
[Address]

Signature of Licensee

Exhibit 3

§9-04 Revocation, Suspension or Refusal to Renew License of Special or Master Rigger or Special or Master Sign Hanger.

(a) The license of a special or master rigger or of a special or master sign hanger may be suspended, revoked or not renewed and/or a fine of not more than five thousand dollars may be imposed for each instance of the following:

(1) Fraud, deceit, collusion or misrepresentation by the licensee in obtaining or renewing such license.

(2) Poor moral character that adversely impacts upon the licensee's fitness to perform his or her duties and responsibilities as a licensee.

(3) Negligence, incompetence, lack of knowledge of the Building Code and applicable rules of the Department or disregard of the Building Code and applicable rules of the Department as demonstrated in the performance of the duties and responsibilities of a licensee.

(4) Failure to comply with an order of the Commissioner or his or her designee in connection with the business or duties and responsibilities of the licensee.

(5) Making a false or misleading statement to the Department or other government agency on any form or report filed with the Department or records required to be kept by the department in relation to the business or duties and responsibilities of the licensee.

(6) Failure to file a form, report or statement or to keep records required by the Department or other government agency in connection with the business or duties and responsibilities of the licensee.

(7) Failure to comply with any of the provisions of sections 9-01, 9-02 or 9-03 of this chapter.

(8) Impeding or obstructing an investigation of the Commissioner or his or her designee relating to the business or duties and responsibilities of the licensee.

(9) Conviction of a criminal offense where the underlying act arises out of the business or duties and responsibilities of the licensee.

(10) The making, completing or altering of a written instrument of the type issued by the Department with respect to the business or duties and responsibilities of the licensee with the intent to defraud or deceive another person.

(11) Violation of or failure to comply with the provisions of the Building Code and other applicable laws and rules relating to the business or duties and responsibilities of the licensee.

(12) Failure to pay a fine or penalty imposed by the Department under this section or in any civil or criminal proceeding in a court or in a proceeding before the environmental control board arising out of the business or duties and responsibilities of the licensee.

(13) Failing to safeguard the public or property during the performance of the business or duties and responsibilities of the licensee in accordance with applicable safety standards.

(b) Except as otherwise provided in subdivision (c) of this section, no license shall be suspended or revoked or fine imposed unless prior thereto the licensee has been afforded the opportunity for a hearing on the charges before the Office of Administrative Trials and Hearings (OATH). The hearing shall be governed by the rules of procedure of OATH. A proceeding shall be commenced by the service of charges by the Department's IAD Unit by mail on the licensee. The Administrative Law Judge at OATH shall issue recommended findings of fact and a recommended decision and shall forward such findings and recommended decision and the record of the proceedings to the Commissioner who shall make a final determination on the charges and penalty as per this section.

(c) Notwithstanding any inconsistent provision of subdivision b of this section, where the Commissioner finds that the public safety may be imminently jeopardized or that there is reasonable cause to believe that the continued use of a special or master rigger or special or master sign hanger license will create a condition of imminent peril to public safety, he or she may forthwith suspend any license pending a hearing, to be held as soon as practicable in light of the circumstances before OATH, and, determination of charges.

CHAPTER 10 DRUMS FOR DERRICK LOAD AND BOOM HOISTS

§10-01 Requirements.

Drums for derrick load and boom hoists shall be contained on the same bed frame [*sic*] operated independently by one or more engines.

Each drum shall have a separate hand brake and clutch or power down mechanism in lieu of a clutch, as well as a positive dog on the drum and a dog on the brake pedal.

The hoisting mechanism shall be in full view and under the control of a licensed hoisting machine operator at all times.

CHAPTER 11 ELEVATORS, ESCALATORS, PERSONNEL HOISTS AND MOVING WALKS

§11-01 Rules for the Certification and Qualification of Private Elevator Inspection Agencies and for the Performance of Inspections and Filing of Inspection Reports for Elevators and Escalators by such Agencies.

(a) *Certificates of approval for agency directors.* (1) A Certificate of Approval for an agency director shall be the written authorization of the commissioner to an individual who shall be the responsible representative of an entity, who carries on her, his or its business as an independent contractor that witnesses tests and inspects elevators, escalators and related equipment. Each private elevator inspection agency shall have one or more directors who supervise the operations of the agency and hold a certificate of approval from the Department of Buildings.

(2) In order to be granted an agency director's certificate of approval, an applicant must:

(i)have a minimum of ten (10) years of experience within the last fifteen (15) years immediately preceding the date of the application for a Certificate of Approval, or a minimum of five (5) years experience within the last seven (7) years immediately preceding the date of the application for a Certificate of Approval if applicant is a New York State licensed Professional Engineer or Registered Architect, in the supervision of the assembly, installation, maintenance, repair, design or inspection of elevators; and

(ii) demonstrate to the commissioner's satisfaction, including performance on any written or oral tests the Commissioner may require, that the applicant is sufficiently familiar with the

construction and maintenance of elevators, escalators and related equipment within the provisions of Subchapter 18 of Chapter 1 of Title 27 of the Administrative Code and Reference Standard 18; and

(iii)demonstrate to the commissioner's satisfaction that the applicant is of good moral character so as not to adversely impact upon his or her fitness to conduct a private elevator inspection agency; and

(iv) furnish payment to the Department for the actual cost of conducting a background investigation of the applicant.

(3) The applicant must complete such questionnaires and provide such supporting data as the commissioner may require including but not limited to a Private Elevator Inspection Qualification/Background form ("qualification/background form") provided by the Department of Buildings which describes, among other things, the applicant's required experience history as follows: job title or capacity of employment; license, if any; name and address of each employer; length of service for each employer ; and any criminal convictions. The applicant shall then submit the completed qualification/ background form to the Licensing Division.

(4) Prior to the department's issuance of a certificate of approval for the agency director, the applicant shall submit the following to the Licensing Division;

(i) the completed qualification/background form and supporting data as the commissioner may require;

(ii) the filing fee specified in §26-213(c)(a) of the Administrative Code and the actual cost of conducting a background investigation of the applicant;

(iii) a copy of the inspection agency's general liability insurance policy for the amount of one million dollars ($1,000,000), with coverage provided for the term of the certificate of approval naming the New York City Department of Buildings, Licensing Division as an additional insured on said insurance certificate;

(iv)documentation indicating compliance with the provisions of the New York State Worker's Compensation Law; and

(i) a current business address, which the applicant is responsible for keeping updated.

(5) After the applicant has complied with paragraphs 1 through 4 above, the department shall issue to the applicant an agency Director's Certificate of Approval. The preceding provisions notwithstanding , the commissioner may refuse to issue such a Certificate of Approval for any of the reasons specified as a grounds for revocation or suspension set forth in subsection

(e) below. Each agency director shall supervise the operations of only one private elevator inspection agency.

(b) *Certificates of approval for agency inspectors.* (1) A Certificate of Approval for an inspector shall be the written authorization of the commissioner to an individual to conduct periodic inspections of elevators, escalators and related equipment and who shall be employed and supervised by a director who holds a Certificate of Approval from the Department of Buildings or who shall be employed by a person or entity who carries on her, his or its business as an independent contractor to witness tests and inspect elevators, escalators and related equipment. Every inspector employed by a private elevator inspection agency shall hold a certificate of approval from the Department of Buildings.

(2) In order to be granted an inspectors' certificate of approval, an applicant must:

(i) have a minimum of five (5) years of satisfactory experience, within the last seven (7) years immediately preceding the date of application to a certificate of approval, in the assembly, installation, repair, design, or inspection of elevators, or as an elevator mechanic;

(ii) demonstrate to the commissioner's satisfaction, including performance on any written or oral tests the Commissioner may require, that the applicant is sufficiently familiar with the construction and maintenance of elevators, escalators and related equipment within the provisions of Subchapter18 of Chapter 1 of Title 27 of the Administrative Code and Reference Standard 18; and

(iii) demonstrate to the commissioner's satisfaction that the applicant is of good moral character so as not to adversely impact upon his or her fitness to conduct elevator inspection; and

(iv) complete a questionnaire and provide supporting data as the commissioner may require; and

(v) furnish payment to the Department for the actual cost of conducting a background investigation of the applicant.

(3) The applicant must complete such questionnaires and provide such supporting data as the commissioner may require including but not limited to a Private Elevator Inspection Qualification/Background form ("qualification/background form") provided by the Department of Buildings which describes the applicant's required experience history as follows: job title or capacity of employment; license, if any; name and address of each employer; length of service for each employer; and any criminal convictions. The applicant shall then submit the completed qualification/ background form to the Licensing Division.

(4) Prior to the department's issuance of a certificate of approval for an agency inspector, the applicant shall submit the following to the Licensing Division:

(i) the completed qualification/background form and supporting data as the commissioner may require;

(ii) the filing fee specified in §26-213(c)(a) of the Administrative Code and the actual cost of conducting a background investigation of the applicant;

(iii) a current business address, which the applicant is responsible for keeping updated.

(5) After the applicant has complied with paragraphs 1 through 4 above, the department shall issue to the applicant an agency inspector's certificate of approval. The preceding provisions notwithstanding, the commissioner may refuse to issue such a Certificate of Approval for any of the reasons specified as a grounds for revocation or suspension set forth in subsection (e) below. Private elevator inspectors who are employed by more than one private elevator inspection agency must have a certificate of approval for each agency by which they are employed. In such cases, an inspector shall submit a separate qualification/background form and pay a separate filing fee for each agency by which he or she is employed.

(c) Department listings of private inspection agencies. (1) Each private inspection agency shall furnish the Department of Buildings, Licensing Division with a list of directors and inspectors, its certificate of approval numbers, a complete table of organization(s), including identification of persons or titles, and a current business address. This information shall

be set forth on letterhead bearing the name and address of the private elevator inspection agency.
(2) Notification of any changes in the information required to be furnished to the Department by subsection (c)(1) shall be sent to the Licensing Division by certified mail within five (5) days of the change.
(3) All private inspection agencies must have a legal place of business within the City of New York. A post office box in New York City is not acceptable.

(c) Renewal of Certificates. (1) Every certificate of approval provided for in this section shall be renewed in person within thirty (30) days prior to its December 31 expiration date.
(2) Prior to the renewal of a certificate of approval for an agency director, the director shall submit the following to the Department of Buildings Licensing Division:

(i) the renewal fee specified in §26-213(c)(a) of the Administrative Code: and

(ii) a copy of the inspection agency's general liability insurance policy for the amount of one million dollars ($1,000,000), with coverage provided for the renewal term of the director's certificate of approval, naming the New York City Department of Buildings, Licensing Division as an additional insured on said insurance certificate; and

(iii) documentation indicating compliance with the provisions of the New York State Worker's Compensation Law; and

(iv) documentation demonstrating to the commissioner's satisfaction that the applicant continues to be of good moral character so as not to adversely impact upon his or her fitness to conduct a private elevator inspection agency.
(3) Prior to the renewal of a certificate of approval for an agency inspector, the inspector shall submit to the Department of Buildings, Licensing Division:

(i) the renewal fee specified in §26-213(c)(a) of the Administrative Code; and

(ii) documentation demonstrating to the commissioner's satisfaction that the applicant continues to be of good moral character so as not to adversely impact upon his or her fitness to conduct elevator inspections.
(4) After the director or inspector has complied with the requirements stated above, the department shall issue a renewal of the director's or inspector's certificate of approval. The preceding provisions notwithstanding, the commissioner may refuse to issue a renewal of a director's or inspector's Certificate of Approval for any of the reasons specified as a grounds for revocation or suspension set forth in subsection (e) below.
(5) Agency directors and inspectors not renewing their certificates of approval by December first of each year shall be subject to the late fee specified §26-213(c)(b) of the Administrative Code. Those agency directors and inspectors not renewing their certificates of approval by January 1 shall be suspended until the applicable late fees are paid. In the event a director or inspector's certificate of approval has lapsed for a period of five (5) years or more, the director or inspector must submit to the Department and follow the procedures for a new application.

(e) *Suspension or revocation of agency directors' or inspectors' certificates.*
(1) The commissioner or his or her designee may suspend or revoke an Agency Director's or Inspector's Certificate of Approval or impose a fine not to exceed five thousand dollars upon a finding of any of the following:

(i) fraud or deceit in obtaining a Certificate of Approval or renewal thereof;

(ii) the making of a false or misleading statement on any form or report filed with the Department or failure to file a statement, report or form required by the law of [*sic*] the Department;

(iii) the willful impeding or obstruction of the filing of a statement, report or form of another;

(iv) fraudulent dealings;

(v) negligence, incompetence, lack of knowledge of the Building Code, or disregard for the Building Code, as demonstrated in the performance of elevator inspections or the submission of any form or report filed with the Department;

(vi) exhibiting a practice of failing to timely or properly carry out the inspection of elevators;

(vii) engaging or assisting in any act that endangers the public safety and welfare;

(viii) failure to comply with or abide by an order of the commissioner;

(ix) in the case of an agency Director, delegating inspectorial duties to a person who the agency director knows or has reason to know is not qualified to inspect elevators;

(x) poor moral character that adversely impacts upon the individual's fitness to conduct a private elevator inspection agency or elevator inspections;

(xi) the conviction for a criminal offense where the underlying act arises out of that individual's professional dealings with the City of New York or with any other governmental entity;

(xii) engaging in any other conduct evidencing a willful or negligent failure to comply with provisions of federal, state or local law, or rules or regulations promulgated pursuant to statutory authority;

one or more violations of any provisions of Title 26, Chapter One of [*sic*] Title 27, Chapter One of the Administrative Code or rules adopted pursuant to such provisions related to elevator inspections.
(2) Where the commissioner or his or her designee, in his or her discretion, deems that there is probable cause to believe that the Certificate of Approval of the agency director and/or inspector should be suspended or revoked or that the director and/or inspector should be fined, unless otherwise provided, charges shall be preferred by the Department's IAD Unit and served by mail upon the appropriate party. The director and/or inspector shall be entitled to a hearing before the Office of Administrative Trials and Hearings, to be held in accordance with the provisions of Title 48 of the Rules of the City of New York, as provided by rules promulgated by the Department.
(3) Where the commissioner or his or her designee, in his or her discretion, deems that there is probable cause to believe that the continued Certificate of Approval of the agency director and/or inspector will create a condition of imminent peril to public safety, the suspension or revocation shall be effective immediately pending a hearing to be held as soon as practicable in light of the circumstances before the Office of Administrative Trials and Hearings.

(f) *Performance of inspections and filings of inspection reports* (1) In compliance with Section 27-1000 of the

Administrative Code, the mandated periodic inspection of every new and existing elevator, escalator and related equipment listed in the Building Code shall be performed by an inspector who holds a Certificate of Approval from the Department and who is supervised by a director who holds a Certificate of Approval from the Department.

(2) The mandated periodic inspection must be performed between January 1 and September 15 of each year.

(3) Each inspection or witnessed test of an elevator or escalator performed by an inspection agency shall be recorded on forms prescribed by the commissioner. Each such form shall confirm that the elevator, escalator and/or related equipment was inspected or the test was witnessed by the holder of a Certificate of Approval and shall be signed by the inspector who performed the inspection or witnessed the test, the agency director and building owner. Agency directors shall include their Certificate number on the form. The forms are to be completed legibly at the time of inspection. The completed and signed forms shall be forwarded to the building owner within five (5) calender days after the inspection and to the Department's Elevator Division within fourteen (14) calendar days after the inspection.

(4) After each inspection or test, the inspector shall affix the inspection date and his/her signature over a stamp identifying his/her private inspection agency and his/her Certificate of Approval number on the elevator car or escalator inspection certificate.

(5) During inspection and after testing, all parts of the equipment shall be inspected to determine that they are in safe operating condition and that parts subject to wear have not worn to such an extent as to affect the safe operation of the installation.

(6) If an inspection reveals that any elevator or escalator is unsafe or hazardous to life and safety, the device is to be taken out of service immediately by the inspection agency. The building owner shall be notified immediately. In addition, a copy of such notification shall be sent by certified mail to the Department of Buildings, Elevator Division within 24 hours.

§11-02 Elevator and Escalator Violations Constituting a Condition Dangerous to Human Life and Safety.

(a) *Dangerous conditions*. Any of the following elevator and escalator violations constitute a condition dangerous to human life and safety.

(1) Elevator out-of-service when there is only one elevator in the building or building section.

(2) Fireman service not functioning in premises.

(3) Badly worn, defective, or damaged hoist cables and/or governors cables.

(4) Defective hoistway doors.

(5) Defective hoistway door interlocks.

(6) Defective car door/gate.

(7) Defective car door/gate switch.

(8) Defective/missing vision panels.

(9) Defective car safety devices.

(10) Defective brake assembly.

(11) Defective hoist machine.

(12) Defective selector/assembly.

(13) Missing top emergency covers.

(14) Defective escalator fire shutters.

(15) Defective escalator comb plates.

(16) Defective escalator stop switch.

(17) Excessive escalator skirt panel clearances.

(18) Defective or non-functional safety switches.

(19) Badly worn, defective, or damaged relays or controllers and/or selector.

(20) Defective, badly worn, or damaged car safety device parts.

(21) Defective car and/or counterweight buffers.

(22) Any damaged, badly worn or defective equipment, which could result in elevator breakdown.

(b) *Civil penalties*. In the event any person fails to remove any of the violations listed in these rules, after having been served with a notice personally or by a certified mail indicating that removal of such condition exists and requiring such removal or compliance unless the removal of such condition is prevented by a labor dispute or is the result of vandalism beyond the control of the owner, he shall be liable for civil penalty of not less than one hundred fifty dollars per day commencing on the date of the service of such notice and terminating on the date that such removal or compliance has been substantially completed in addition to other penalties set forth in law. When service of such notice is made by mail to the owner, civil penalties as herein provided shall commence five days from the date of such mailing.

(c) *Discontinuance of action upon removal of violation*. Where a notice requiring removal of a violation listed in these rules has been issued, liability shall cease and the corporation counsel, on request of the commissioner, shall discontinue prosecution only if the removal or compliance so required has been completed or substantially completed within ten days after the service of such notice. The commissioner shall, upon good cause shown, grant additional time for such removal or compliance. In addition, the civil penalties shall be tolled from the date the owner certifies under oath, on [*sic*] a form prescribed by the commissioner, that the removal of the violation has been substantially completed. If subsequent inspection by the department shows a failure to have removed the violation, the civil penalties shall be deemed to have accrued as of the first day notice of violation has been served.

§11-03 Cease Use Orders for Elevators, Personnel Hoists, Escalators and Moving Walks.

A cease use order should be issued for all elevators, personnel hoists, escalators, and moving walks pursuant to §26-127 of the Administrative Code of the City of New York whenever an imminently hazardous condition exists. In addition, the device should be tagged as unsafe. This tag may not be removed without prior approval from the Department of Buildings. Such imminently hazardous conditions include but are not limited to:

(a) Elevator running with an open hoistway door or car gate/door.

(b) Elevator running with broken or non-functioning upper or lower final hoistway or machine limit switches.

(c) Hoistway or car door vision glass and grille guard missing.

(d) Unraveling or broken hoist, counterweight, governor or compensation cables.

(e) Missing hoistway door or car door gibs.

(f) Inoperable governor.

(g) Elevator running with non-functioning interlock.

(h) Emergency top exit cover missing (passenger elevator).

(i) Side emergency exit door open (passenger elevator).

(j) Emergency stop switch not working (automatic elevator,

[*sic*] escalator or moving walk).
(k) Directional switch not working (escalator or moving walk).
(l) Other imminently hazardous conditions as observed by the inspector.

§11-04 Separability. If any of the provisions of these rules are found by a court of competent jurisdiction to be invalid or ineffective in whole or in part, the effect of such decision shall be limited to those provisions that are expressly stated in the decision to be invalid or ineffective, and all other provisions of these rules shall continue to be separately and fully effective.

§11-05 Certification of Completion of Work after Issuance of Temporary Use Permit for an Elevator, Escalator and other Device, Except Amusement Devices, Listed in §§27-184(b) or 27-982 of the Administrative Code.

(a) Where the department has issued a temporary use permit pursuant to §27-188 of the Administrative Code for an elevator, escalator or other device listed in §27-185(b) and § 27-982 of the Code subject to the completion of alteration or installation work as specified by the department, a certified elevator inspection agency director, professional engineer or registered architect may certify to the department that such work has been completed in conformity with the requirements of Subchapter 18 of Chapter 1 of Title 27 and Reference Standard 18-1. The department shall issue an equipment use permit upon the satisfactory filing of such certification.
(b) This section shall not apply to amusement devices.

§11-06 Elevators, Escalators or Other Devices, Except Amusement Devices, Listed in §27-185(b) or §27-982 of the Administrative Code, Renewal of Temporary Use Permits and Fees.

(a) Renewal of a temporary use permit for an elevator, escalator or other device, except amusement devices, listed in §27-185(b) or §27-982 of the Administrative Code.
(1) A temporary use permit issued pursuant to §27-188 of the Administrative Code for an elevator,escalator or other device listed in §27-185(b) or §27-982 of the Code may be renewed subject to the following:

(i)Each renewal application shall be submitted on forms furnished by the department not later than five business days prior to the expiration date of the temporary use permit;

(ii) Such application shall state the reason for renewal and be accompanied by the required fee as set forth in subdivision (3) of this section; and

(iii) Such application shall be submitted on behalf of the owner and signed by the owner or its authorized representative.
(2) The commissioner will automatically renew a temporary use permit every thirty days for up to 120 days unless informed otherwise by the applicant. After 120 days, a renewal application must be filed and accompanied by the required fee.
(3) The department may require a department inspection prior to the issuance of a renewal.
(4) Each application for renewal shall be accompanied by a fee of $100 per device.

(b) Failure to keep or be prepared for scheduled appointment.
(1) Scheduled appointments for the inspection or tests of an elevator, escalator or other device listed in §27-185(b) and §27-982 of the Code may be canceled provided that notice of cancellation is received by the department no later than 3 business days prior to the scheduled appointment.
(2) Where a department inspector arrives at the site of a scheduled inspection or test and is unable to perform the scheduled inspection or witness the test because the owner or its authorized representative has failed to keep or is unprepared for the scheduled appointment, then the department shall impose a fee for the missed appointment in the amount of $200. The fee shall be due and payable within thirty days after the date of the missed appointment or prior to the scheduling of a new appointment, whichever is earlier.

(c) Pre-inspection clearance. (1) An owner or its authorized [*sic*] representative may request the department to perform a pre-inspection clearance of an elevator, escalator or other device listed in §27-185(b) and §27-982 of the Administrative Code within five business days of the department's receipt of such request and payment of the required fees set forth in subdivision (2) of this section. The department reserved the right to schedule the requested pre-inspection clearance during non-regular or off-peak hours.
(2) A request for a pre- inspection clearance shall be accompanied by a non-refundable fee in the amount of $200 per device.
(c) This section shall not apply to amusement devices.

CHAPTER 12 EMERGENCY POWER SYSTEMS

§12-01 Emergency Power System Requirements.

(a) *Applicability.* – Pursuant to Article 11 of subchapter 6 of Chapter 1 of Title 27 of the Administrative (Building) Code, as enacted by Local Law 16 for the year 1984, these rules and regulations shall apply to emergency power systems associated with emergency fire protection equipment when required to be provided in new and existing buildings pursuant to applicable provisions of the Building Code, the Building Code Reference Standards and the Rules of the City of New York.
(1) These rules shall not apply to occupant optional sources of emergency power that provide support for sources supplying emergency power to emergency fire protection equipment only in the event of failure of the sources of emergency power.
(2) These rules shall not apply to emergency power systems installed pursuant to plans approved prior to October 1, 1984 unless construction pursuant to any such plans had not begun prior to April 1, 1986.
(3) Subdivisions (h), (n) and (o) shall not apply to required emergency power systems for which applications were filed prior to September 9, 1998.
(4) Subdivision (p) shall not apply to required emergency power systems for which applications were filed prior to the effective date of this amendment.

(b) *Definition* - As used in these rules, "emergency fire protection equipment" shall mean that equipment listed in Section 27-396.4 of the Administrative Code.

(c) *General equipment requirements*. Emergency power systems shall have a power source and fuel supply sufficient to operate the following equipment:
(1) *Fire pumps and booster pumps*. Manual, automatic special service pumps and sprinkler booster pumps.

(i) Overcurrent protection shall be provided at the emergency generator side of the power distribution system and shall be rated at least 150% of motor full load current.

(ii) Feeder conductors on the emergency generator side of the power distribution system shall be sized at least 125% of motor full load current.

(iii) Automatic transfer switches shall be located in the same room as the pumps and shall be an integral part of the pump controller.

(2) *Elevators.* Three elevators at one time, with manual transfer to all other elevators.

(i)The shaft arrangement shall permit any floor to be served by three elevators - only two of which may be in the same shaft.

(ii) It shall be possible to select from all of the elevators (with more than 25 feet travel) any combination of three cars for simultaneous operation in the emergency power mode, and to readily change this selection for firefighting or building evacuation purposes.

(iii) The selection of cars shall be accomplished manually from the elevator dispatcher's panel or from a satellite elevator panel if the main panel is not at, or adjacent to, the lobby Fire Command Station.

(iv) Interlocking shall be provided to prevent more than the intended number of cars from operating simultaneously in the emergency power mode.

(3) Alarm systems.

(4) Communication systems.

(5) Emergency lighting, if battery packs are not provided.

(6) Ventilating systems used for smoke venting or control.

(7) Stair pressurization.

(8) *Gas fired equipment.* The construction and installation of gas fired equipment shall comply with Article 16 of Subchapter 14 of Chapter 1 of Title 27 of the Administrative Code.

(9) *Fuel oil equipment.* Fuel oil equipment shall comply with Article 17 of Subchapter 14 of Chapter 1 of Title 27 of the Administrative Code

(d) *Responsibility.* The design of the emergency power system shall be the responsibility of the Licensed Professional Engineer or Registered Architect.

(e) *Engineering design.* - The emergency power systems shall be designed in accordance with generally accepted engineering practice, the Administrative (Electrical) Code and Bureau of Electrical Control Rules and Regulations.

(f) *Capacity.*

(1) The emergency generator fuel supply shall be sufficient to supply the total emergency power load for a period of at least six (6) hours.

(2) If battery packs are used for emergency lighting, they shall comply with the requirements of the Bureau of Electrical Control.

(g) *Automatic transfer switch features.*

(1) *Time delay on starting of alternate power source.* A time delay device may be provided to delay starting of the alternate source generator. The timer is intended to prevent nuisance starting of the alternate source generator with subsequent load transfer in the event of harmless momentary power dips and interruptions of the normal source. The time range must be short enough so that the generator can start and be on the line within 30 seconds of the onset of failure.

(2) *Time delay on transfer to alternate power.* An adjustable time delay device shall be provided for those transfer switches requiring "delayed automatic" operation. The time delay shall commence when proper alternate source voltage and frequency are achieved. The delay device shall prevent transfer to the alternate power source until after expiration of the preset delay.

(3) *Time delay on retransfer to normal power.* An adjustable timer with a bypass shall be provided to delay retransfer from the alternate source of power to the normal. This timer will permit the normal source to stabilize before retransfer to the load and help to avoid unnecessary power interruptions. The bypass shall permit automatic retransfer in the event that the alternate source shall fail and the normal source is available.

(4) *Test switch.* A test switch shall be provided on each automatic transfer switch that will simulate a normal power source failure to the switch.

(5) *Indication of switch position.* Two pilot lights, properly identified, shall be provided to indicate the transfer switch position.

(6) *Manual control of switch.* A means for the safe manual operation of the automatic transfer switch shall be provided.

(7) *Nonautomatic transfer device classification.* Nonautomatic transfer devices shall be approved for emergency electrical service.

(8) *Indication of switch position.* Pilot lights, properly identified, shall be provided to indicate the switch position.

(h) *Automatic Transfer Devices and Power Generation Feeders.*

(i)*New buildings.* - (i) All automatic transfer devices, emergency generators and emergency power generation feeders that serve required emergency fire protection equipment shall not be located in the same room as the main or primary electrical service equipment.

(ii) Any automatic transfer device that is not located at the load shall be located within an enclosed room or space that has a 2-hour fire resistance rated enclosure, and that complies with the New York City Electrical Code requirements for Electrical Closets and Switchboard Rooms or Areas. The enclosed room or space shall contain no equipment or water and/or steam piping other than sprinkler piping and equipment associated with the emergency fire protection equipment. Uninterrupted conduits not associated with the emergency generation system may pass through this room or space.

(2) *Existing buildings.* - (i) Emergency power generation feeders and automatic transfer devices that are required to be installed in existing buildings pursuant to Section 27-115 or 27-118(a) of the Administrative Code shall not be located in the same room as the main or primary electrical service equipment.

(ii) Any automatic transfer device that is not located at the load shall be remotely located or separated by 2-hour fire resistance rated construction from the emergency generator and any fuel burning equipment.

(i)*Ventilating Air.* Provision shall be made to provide air adequate to replenish engine combustion and adequate for rejectionof engine generatedheat.

(j)*Application.* The emergency power system shall be filed with the following application: Plumbing, Mechanical Equipment and Tank Installation; Miscellaneous B Form 8.

(k) *Certificate of Electrical Inspection.* A licensed electrician shall file an application for a Certificate of Electrical Inspection with the Bureau of Electrical Control for the Emergency Power System.

(l)*Registration.* Emergency power generation equipment shall be registered with the Department of Environmental Protection, Bureau of Air Resources, in accordance with the

requirements of §24-109 of the Administrative Code.

(m) *Inspection and test.* Generator sets serving Emergency Power Systems shall be inspected and tested monthly under the supervision of any of the following:
(1) A Licensed Professional Engineer or Registered Architect.
(2) An electrician licensed by the Bureau of Electrical Control.
(3) An electrician holding a Special License (Maintenance, for a specific building only) from the Bureau of Electrical Control.
(4) The Fire Safety Director having a Certificate of Fitness from the Fire Department.

The Stationary Engineer or Assistant Stationary Engineer having a Certificate of Fitness from the Fire Department.

(n) Emergency generators installed indoors in new buildings shall be located within a room or space that has a two (2) hour fire resistance rating enclosure. The room or space shall contain no equipment or water and/or steam piping other than sprinkler piping, equipment and fuel tanks associated with the emergency generation systems, and shall be located away from areas that may be prone to flooding or damage from other natural causes.
Emergency generators installed indoors in existing buildings shall be located within a room or space that has a two (2) hour fire resistance rating enclosure.
For new and existing buildings, uninterrupted conduits not associated with the emergency generation system may pass through this room or space. Emergency generators within such room or space may supply occupant optional loads in addition to those of the emergency fire protection equipment provided the emergency fire protection equipment loads are given the highest priority. Load shedding or other means acceptable to the Commissioner shall be used to ensure that this priority assignment is maintained under all operational conditions. Multiple generators supplying emergency fire protection equipment loads only, or emergency fire protection equipment in combination with occupant optional loads as a common system, may have common fuel supplies and other common equipment and systems. Generators dedicated only to supplying emergency fire protection equipment loads may have fuel supplies, other equipment and systems in common with generators dedicated to occupant optional loads. The fuel system for the operation of the emergency power system supplying the emergency fire protection equipment loads shall consist of an on-site fuel oil system providing a minimum of six hours capacity at full load at all times except during loss of utility power. Occupant optional loads shall be shed and emergency fire protection equipment shall restore to utility power, if available, to comply with this requirement. Means shall be provided for automatic transfer to the fuel oil supply upon loss of gas supply where dual fuel generators are used.

(o) Water-cooled emergency generators shall not rely solely upon a single city water connection. The additional source of water for cooling may be obtained from:
(i) another water main connection;
ii) a suction tank;
(iii) a gravity tank; or
(iv) any other system acceptable to the commissioner.

(p) Circuits for emergency lighting in any area required to be provided with emergency lighting shall be arranged so that loss of normal or emergency power supply shall not reduce the available lighting levels in any of such areas below the level required for emergency lighting by applicable provisions of the Administrative Code, Reference standards or Rules of the City of New York. This may be accomplished by means of a combination of wiring arrangement and emergency power connection.

CHAPTER 13 ADJUDICATIONS

Subchapter A

§13-01 Environmental Control Board Adjudication.

(a) *Jurisdiction.* Any violation(s) of any provision of subchapter one, two or three of chapter one of Title 26 or chapter one of Title 27 of the New York City Administrative Code ("Administrative Code") or of the Zoning Resolution of the City of New York, or of other rules and regulations ("Rules") of the Department of Buildings may be adjudicated at the Environmental Control Board ("ECB") except those provisions of law which the Commissioner of the Department of Buildings ("Commissioner") is specifically prohibited from designating for prosecution at the ECB pursuant to §26-126.4 of the Administrative Code, as amended.

(b) *Schedule of Penalties*. The maximum penalties for violations of code and/or rule are those maximum penalties set forth in the Administrative Code.

(c) *Order to certify correction*.
(1) All ECB Notices of Violations ("NOV") shall include an order of the commissioner which requires the respondent to correct the condition constituting the violation ("order to correct") and to file a certification ("certification") with the department that the condition has been corrected. A first offender served with an order to correct may avoid a hearing and penalty if such certification is filed as set forth in §26-126.2 of the Administrative Code.
The following four violations cannot be certified as corrected prior to the ECB hearing and the respondent must appear at the hearing:
(i) A violating condition cited as hazardous;
(ii) A violating condition cited as a second (or multiple) offense;
(iii) A violation for filing a false certification;
(iv) A violation for failing to certify correction.
For the above four types of violations, the respondent must appear at the ECB hearing prior to the submission of the certification to the department's Administrative Enforcement Unit.
(2) The required certification shall be completed on the form issued with the NOV or obtained from the department's Administrative Enforcement Unit, in accordance with the instructions contained therein.
(3) In cases in which more than one violation of code and/or rule is listed on the same NOV, the respondent may submit a single certification covering one or all of the violating conditions. The respondent must appear at the ECB hearing for all violating conditions not certified as corrected.
(4) The certification shall be signed by the respondent and notarized by a notary public or commissioner of deeds.
(5) Respondent shall submit true and legible copies of any and all documentary proof of compliance along with the certification.
(6) The completed certification must be returned to:

New York City Department of Buildings
Administrative Enforcement Unit,
(address provided in the City's website, http://www.nyc.gov.)

(7) A certification acceptable to the department must be received by the Administrative Enforcement Unit no later than close of business thirty-five days after service of the NOV has been effectuated.

(d) *Certificate of correction review procedures.*

(1) The Administrative Enforcement Unit shall review all Certificates and accompanying documentation to determine their acceptability.

(2) Notification shall be issued to the respondent if the Certification is accepted. If the respondent is a first offender with a non-hazardous violation and the Certification is accepted, the respondent shall be excused from appearing at the ECB hearing and shall not be subjected to penalty.

(3) The Administrative Enforcement Unit shall notify those respondents who submit an unacceptable certification. This notification shall inform the respondent of the defect in his/her submission and the documentation required to correct these defects.

(4) Corrected certifications must be received by the Administrative Enforcement Unit no later than the close of business thirty-five days after service of the NOV has been effectuated.

(5) Failure to submit an acceptable certification for all violating conditions indicated on the NOV within this time period shall require the respondent to appear at a hearing at the ECB on the date indicated on the NOV.

(e) *Stipulations.*

(1) The commissioner may offer a stipulation to the named respondent, for a non-hazardous, first offense violation, to extend the time for compliance upon such other terms and conditions as the commissioner may prescribe. Such extended time for compliance shall be calculated from the first return date indicated on the notice of violation.

(2) No stipulation shall take effect until it is approved in writing by the ECB.

(f) *Modification clause and savings clause.*

(1) Whenever circumstances, conditions, limitations, or surroundings are unusual, or are such as to render it impracticable to comply with all the foregoing requirements, the commissioner may waive or modify such provisions over which she/he has jurisdiction to such extent as the commissioner may deem necessary consistent with public safety.

(2) If any clause, sentence, paragraph, section or part of this article shall be adjudged by any court of competent jurisdiction to be invalid, such judgment shall not effect, impair or invalidate the remainder thereof, but shall be confined in its operation to the clause, sentence, paragraph, section or part thereof directly involved in the controversy in which judgment shall have been rendered.

Subchapter B

Rules Governing Adjudication Procedures

§13-11 Purpose. (a) These rules are instituted in order to establish guidelines for the adjudication procedures of the Department of Buildings ("the Department"). Pursuant to City Administrative Procedure Act City Charter §1048, all hearings concerning the following matters under the jurisdiction of the Department will be held before the Office of Administrative Trials and Hearings and governed by the rules of procedure utilized at that tribunal:

(1) Welder License Revocation
(2) Boiler Operating License Revocation
(3) Hoisting Machine Operator License Revocation
(4) Rigger License Revocation
(5) Sign Hanger License Revocation
(6) Oil-Burning Equipment Installer License Revocation
(7) Concrete Testing Laboratory License Revocation
(8) Exclusion from the Limited Supervisory Check of [*sic*] Registered Architects or [*sic*] Licensed Professional Engineers
(9) Civil Service Employee Disciplinary Matters, subject to §1.3 herein
(10) Sealing orders, pursuant to §26-127(e)(i) of the New York Administrative Code.
(11) The suspension or revocation of the registration, or the limitation of registration, of persons required to be registered with the Department pursuant to Administrative Code §27-140.1.
(12) The suspension or revocation of the authority of any Department licensee, certified inspection agency, or any other authorized representative of the Commissioner to conduct inspections of work or participate in any self-certification program under the jurisdiction of the Department, except that such proceedings relating to Master Plumbers, Master Fire Suppression Piping Contractors, and Master Electricians may be adjudicated at OATH only upon referral by the applicable license board pursuant to paragraph (b)(i) below.
(13) The suspension or revocation of certificates of approval for private elevator inspection agencies, directors, and inspectors certified pursuant to §11-01 of Title 1 of the Rules of the City of New York.

(b) (1) Notwithstanding the procedures set forth in §§13-12 through 13-21 of these rules, upon referral by the Master Electricians License Board (established pursuant to §27-3009 of the Administrative Code) or the Master Plumber/Master Fire Suppression Piping Contractor License Board (established pursuant to §26-144 of the Administrative Code) (either Board hereinafter referred to as the "Board") hearings concerning the following matters may be held before the Office of Administrative Trials and Hearings ("OATH") and be governed by the rules of procedure of such tribunal:

(i) Master Plumbers License, pursuant to Administrative Code §26-151.

(ii) Master Fire Suppression Piping Contractor License, pursuant to Administrative Code §26-151.

(iii) Master Electrician License, pursuant to §27-3016 of the New York City Administrative Code.

(2) After conducting an adjudicative hearing on a matter referred to it by the Board, the Administrative law judge at OATH shall issue recommended findings of fact and a recommended decision, and forward such findings and recommended decision and the record of the proceedings to the chairperson of the Board. The chairperson shall provide copies of such findings and recommendation to members of the Board at least ten days before that meeting of the Board at which action on such recommendation is scheduled to be taken. The Board shall act on such

recommendations at such meeting and forward such recommendations and record, together with its own comments, if any, to the Commissioner. If the Board fails to act on a matter referred to it by OATH at such meeting, the OATH findings and recommendations shall be deemed to be adopted in full by the Board and shall be forwarded by the chairperson to the Commissioner for review. The Commissioner shall make the final determination.

(c) New York City Department of Buildings adjudications regarding the fitness and discipline of agency employees will be conducted by the Office of Administrative Trials and Hearings. After conducting an adjudication and analyzing all testimony and other evidence, the hearing officer shall make written proposed findings of fact and recommend decisions, which shall be reviewed and finally determined by the Commissioner.

§13-12 Definitions.

Board. The term "board" shall hereafter mean the Master Electricians License Board established pursuant to Administrative Code §27-3009 or the license board established pursuant to Administrative Code §26-144 which has jurisdiction over licensed master plumbers and licensed master fire suppression piping contractors.

Chairperson. The term "chairperson" shall mean the chairperson of the board or any other person authorized to act as chairperson. In any case where the chairperson is absent, another member of the board may act as chairperson**.**

Charging panel. The term "charging panel" shall mean the panel established pursuant to Administrative Code §26-144(c) to investigate complaints and any charges arising therefrom.

Commissioner. The term "commissioner" shall mean the Commissioner of Buildings of the City of New York, or any person or persons he or she lawfully appoints as designee.

Hearing panel. The term "hearing panel" shall hereafter mean the panel established pursuant to Administrative Code §26-151(b).

Presiding member. The term "presiding member" shall mean the person designated by the chairman to preside at investigations and hearings. In any case where the presiding member is absent, another member of the charging panel or hearing panel may act as the presiding member.

Quorum. The term "quorum" shall mean the number of charging panel or hearing panel members required to be present in order to conduct investigations and hearings and shall consist of a majority of the members of the charging panel or hearing panel.

Respondent. The term "respondent" shall hereafter mean the holder of an electrician's license, plumber's license, master fire suppression license, or any other person or entity who is the subject of a disciplinary proceeding as hereinafter provided.

§13-13 Pre-Hearing Procedure.

(a) Prior to the commencement of formal proceedings the Commissioner or board may, in his or their discretion, schedule a respondent for a pre-investigatory conference, pursuant to §646 of the New York City Charter, to determine the propriety of either (a) preferring charges against the respondent, or (b) determining the respondent's fitness to qualify for or hold a license, as the case may be.

§13-14 Commencement of Disciplinary Proceedings. (a) A disciplinary proceeding shall be commenced by the filing of charges and specifications with the board. Such charges and specifications may be filed by the board itself, a member of the board, the Department of Buildings or any other governmental agency. Notwithstanding the foregoing, all such proceedings shall be prosecuted by the Department of Buildings.

(b) The charges and specifications shall contain the name of the respondent sought to be disciplined, reference to the provisions of law alleged to have been violated and the factual allegations underlying the charges. The chairperson may request individuals, at least two of whom shall be members of the board, to act as a charging panel with the approval of the board. The chairperson shall appoint one member of the charging panel to act as the presiding member. The charging panel shall review the charges and by a quorum approve, disapprove or where appropriate, modify them. The finding of the charging panel as to the sufficiency, definiteness or detail of the statement or its failure or refusal to furnish a more definite or detailed statement shall not be subject to judicial review.

(c) Unless otherwise provided by Title 26 of the New York City Administrative Code, if the charging panel approves or modifies the charges, a copy of the charges and specifications, together with a date, time and place for hearing, shall be personally delivered or mailed to the respondent at the respondent's place of business or usual place of abode.

(d) The chairperson may request three individuals, at least two of whom shall be members of the board, to act as a hearing panel with the approval of the board. The chairperson shall appoint one member of the hearing panel to act as the presiding member. None of the individuals appointed to the hearing panel shall be an employee of the Department of Buildings.

(e) Unless otherwise provided by Title 26 of the New York City Administrative Code, within ten calendar days if the charges are delivered personally, or within fifteen calendar days if the charges are mailed, said period accruing on the date of delivery or mailing as the case may be, the respondent shall file with the hearing panel a written statement denying, admitting or admitting with an explanation any or all of the charges and specifications. Where a respondent admits with an explanation, it shall not be necessary to provide that explanation until such time as the hearing panel requests it.

(f) Where the respondent is a licensee, if the respondent fails to appear at the hearing, the hearing panel may recommend to the Commissioner that the respondent's license be suspended until such time as the respondent appears.

(g) Notwithstanding the foregoing, if upon the filing of charges and specifications, or at any time thereafter, the Commissioner should determine that there exists a serious and immediate threat to persons or property by the conduct alleged, the respondent's license may be suspended immediately, provided, however, that in any such case the respondent shall have a right to a hearing at the next available hearing date following the date of suspension.

§13-15 Disclosure.

(a) Requests for a bill of particulars shall be made in writing and served upon the department advocate and directed to the presiding member of the hearing panel at least ten calendar days prior to the hearing. Such requests shall be granted only for good cause shown.

(b) Objections to such requests shall be submitted to the presiding member of the hearing panel at least five business days prior to the hearing. Such an objection, however, shall not be a prerequisite to the presiding member's decision to deny or limit such request.

§13-16 Adjournments. Requests for adjournments or extensions of time may be granted by the presiding member of the hearing panel for good cause shown.

§13-17 Subpoenas. (a) Subpoenas shall be submitted to the presiding member for signature any time prior to the scheduled hearing date, and shall be served by the party requesting the subpoena in the manner prescribed by the Civil Practice Law and Rules.

(b) The presiding member of the hearing panel may, for good cause shown, permit an adjournment for the purpose of permitting or making a motion in the Supreme Court to compel compliance with a subpoena.

(c) In any case where the holder of a license is subpoenaed but fails to appear, the hearing panel may recommend to the Commissioner that such license be immediately suspended.

§13-18 Conduct of Hearings.

(a) Hearings shall be conducted by at least a quorum of the members of the hearing panel.

(b) Oaths or affirmations shall be administered to all witnesses called to testify.

(c) Evidence shall first be proffered in support of the charges. The respondent shall have the right to object to the evidence and to cross-examine witnesses.

(d) When all of the evidence in support of the charges is presented to the hearing panel, the respondent may present evidence in rebuttal, which may also be subject to objections and cross-examination by an adverse party.

(e) At any stage of the hearing the presiding member may permit members of the hearing panel to examine witnesses or review any other evidence.

(f) The hearing panel may independently introduce its own exhibits or call and examine its own witnesses.

(g) All objections shall be directed to the presiding member, who shall rule on them.

(h) Hearsay evidence is admissible at the discretion of the presiding member, provided, however, that such evidence must be relevant to the charges.

(i) Parties may be permitted to make opening and closing statements, and to submit written argument on the law and the facts at the conclusion of oral testimony.

(j) Respondents may be represented by an attorney at all stages of the proceedings.

§13-19 Board Initiated Investigatory Hearings.

(a) Nothing contained herein shall be deemed a limitation of the board's statutory obligation pursuant to Administrative Code §§26-144(a), (c) and 27-3009(c) to conduct investigatory hearings. Such hearings shall not be governed by these rules of procedure.

§13-20 Evidentiary Standard of Proof.

(a) The burden of proof shall be on the party initiating the proceeding. The hearing panel shall utilize a preponderance of the evidence standard of proof with respect to any recommendation calling for the imposition of a fine, suspension or revocation of license.

§13-21 Decisions, Determinations and Orders. (a) Any decision, determination or order of the hearing panel shall be by a quorum. It shall be in the nature of a recommendation and shall be transmitted to the commissioner or his designee, and shall consist of findings of fact and conclusions of law. Hearing panel members who do not concur with the recommendation may submit a separate recommendation.

(b) A copy of the written recommendation of the hearing panel shall be delivered or mailed forthwith to each party.

(c) The decision, determination or order of the hearing panel shall not be binding until reviewed by the Commissioner or his or her designee, who in his or her discretion, may adopt, reject or modify said recommendation. The final decision, determination or order of the Commissioner shall then be promptly delivered or mailed to each party.

(d) Any decision, determination or order of the Commissioner or his or her designee may be reviewed as provided by law.

CHAPTER 14 FEES

§14-01 Addressing of Bills Whose Nonpayment May Result in the Placing of a Lien.

All bills issued by the Department of Buildings for payment of fee for an inspection, reinspection, examination or service performed by the department or for payment of permit fee required by the department which may result in the placing of a lien shall be issued to the person designated as owner or agent to receive real property tax or water bills for the building. It will be mailed to the address of [*sic*] such person contained in one of the files compiled by the Department of Finance for the purpose of the assessment or collection of real property taxes or water charges, or it will be mailed to the address contained in the file compiled by the Department of Finance from real property transfer forms filed with the City Register [*sic*] upon the sale or transfer of real property.

§14-02 [Repealed]

§14-03 Payment of Fees for Variances from the Restrictions on Times during which Construction Activities May Be Conducted.

(a) *Applicability*. Pursuant to the provisions of §24-224 and §24-257 of the Administrative Code, the Department of Buildings, may, in the case of urgent necessity in the interest of public safety, issue a variance with respect to construction activities in any zone other than weekdays between the hours of seven a.m. and six p.m.

(b) *Variances*.

(1) Such variance may be granted for an initial period of up to three days, and may be renewed for periods of three days or less while such urgent necessity continues.

(2) Such variance shall be clearly marked on such permit and shall be prominently posted on the site of such construction activities by the permittee.

(3) A copy of such marked permit shall be promptly forwarded to the Environmental Control Board.

(4) In the case of an emergency, construction activities directly connected with the abatement of such emergency may be undertaken without a variance as herein provided for a period not to exceed twelve hours from the commencement of such construction, during which time application for a variance hereunder shall be made.

c) *Fees for after-hours variances.*
(1) The initial application fee for an after-hours variance shall be one hundred dollars.
(2) The renewal application fee for an after-hours variance shall be one hundred dollars.
(3) Also, for each day for which such variance is granted or renewed the fee shall be eighty dollars.

§14-04 Fees Payable to the Department of Buildings.
The department shall charge the following fees:

(a) Issuance of a core certificate of completion, which indicates completion of the building structure, the elevator systems, stairs, and all fire safety systems one hundred dollars.

(b) Issuance of a temporary place of assembly permit for occupancy as a place of assembly for a temporary event.two hundred fifty dollars and, in addition, where the written request for such permit is received less than ten (10) business days prior to the scheduled event, an additional charge of one hundred dollars per day measured from the tenth business day prior to the scheduled event to and including the date of the receipt of the written request for such permit.

(c) Each inspection of a temporary amusement device pursuant to reference standard RS 18-10…one hundred dollars.

(d) Issuance of letter of no objection to or classification of a specified occupancy of a premises, as follows:
1-,2-, or 3-family homes...…...…….twenty-five dollars;
all other premises..……...……..…one hundred dollars.

(e) Filing of post-approval amendments to existing applications the greater of one hundred dollars or the fees for the additional scope or cost of work as calculated pursuant to Administrative Code §26-212.

(f) Examination required by §26-01, subd. (c) for the issuance of Site Safety Manager certificates:
three hundred and fifty dollars.

(g) Examination required by §11-01, subd. (a)(2)(ii) for an Agency Director Certificate of Approval:
three hundred and fifty dollars.

(h) Examination required by §11-01, subd. (b)(2)(ii) for Elevator Agency Inspector Certificate of Approval:
three hundred and fifty dollars.

CHAPTER 15 FIRE PROTECTION

§15-01 Communication and Alarm Systems ("Mini-Class 'E' Systems") for Certain Buildings under 100 Feet in Height.

(*a) Number of occupants.* The subject subsection (27-972(h)) of the Building Code states that a communication and alarm system, acceptable to the Commissioner of Buildings, shall be provided in buildings classified in occupancy group E, less than 100 feet in height, occupied or arranged to be occupied for an occupant load of more than one hundred persons above or below the street floor or more than a total of five hundred persons in the entire building. The provisions regarding occupant load are to be interpreted to apply where one or more of the following prevail:

(1) The sum of the occupants on all the floors below the street floor exceeds 100 persons; or

(2) The sum of the occupants on all the floors above the street floor exceed 100 persons; or

(3) A total of more than 500 persons in the entire building including the street floor.

(b) Occupancy load. Occupant load shall be determined by the existing certificate of occupancy. In the absence of such certificate of occupancy, the occupant load shall be the greater of the actual number of occupants or on the basis of 1 person per 100 square feet net floor area. Net floor area shall be all space within the building exterior walls, excluding the following areas:
(1) areas enclosing stairs.
(2) public corridors.
(3) elevators and shafts.
(4) rest rooms.
(5) storage rooms.
(For example, a net floor area of 10,100 square feet is capable of an occupancy of 101 persons).

The Communication and Alarm System, acceptable to the Commissioner of Buildings, shall have the following capabilities and components:

(c) Capabilities and components. (1) Fire command station. A communications center, located in the lobby of the building on the entrance floor as part of the elevator control panel if such exists, or located in the immediate vicinity of the elevators if they exist, to provide:

(i) Individual two-way voice communication from the fire command station to a fire warden station on each floor and to the regularly assigned location of the fire safety director, to consist of a telephone handset or approved speaker microphone system or other approved voice communication system. Initiation of a call from the fire command station shall sound a loud and distinctive sound or an audible device, selectively on the entire floor which is being called or at all floors throughout the building, through the use of a general all call button. This call shall be immediately answered by the fire wardens of the floors involved.

(ii) Manual pull station located adjacent to the fire command station to transmit a fire alarm signal to the fire department via a central station of a franchised operating company.

(iii) Annunciation of associated fire safety systems at the fire command station is optional; however, such annunciation shall not be connected to the mini-class "E" system.

(iv)This system shall be a "supervised" system. A "supervised" system is one that is electrically monitored so that the occurrence of a single open or single ground fault condition of its wiring which prevents the required normal operation of the system or causes the failure of its primary (main) power supply source is indicated by a distinctive trouble signal.

(2) Fire Warden Station. A station located on each floor within view of the passenger elevator lobby if such exists; however, when an elevator lobby does not exist, the station shall be located in the path of egress to an exit stairway. The fire warden station shall have two-way communication with the Fire Command Station and:

(i) Shall consist of telephone handset or a speaker microphone system or other approved equivalent voice communication system.

(ii) The initiation of a call from a fire warden shall cause a loud and distinctive sound at the Fire Command Station and at the Fire Safety Director's Office, which call shall be immediately answered by the Fire Safety Director from the Fire Command Station.

(3) Fire Safety Director's Office. A station located within the building at the principal work location of the Fire Safety Director arranged the same as a warden's station. There shall be a two-way voice

communication system to the Fire Command Station. A two-way voice communication system described above shall also be provided at the mechanical control center should one exist.

(4) General requirements.

(i) The components of the system shall require New York City Department of Buildings Material Equipment Acceptance ("M.E.A.") approval.

(ii) A. SOURCES OF ELECTRICAL POWER

Two sources of electrical power shall be provided as follows:

1. The primary source shall be generated electric power not exceeding 277/480 volts, supplied by utility company power, or isolated plant.

2. The secondary source shall be an emergency power system (as per Section 27-396 of the Building Code), an emergency generator and/or battery power.

3. One source of power shall be connected to the system at all times. The primary and secondary power sources shall be so arranged and controlled by automatic transfer switches and/or circuitry that when the primary source of power fails, the secondary source will be connected automatically to the fire alarm signal system. Intermediary devices between the system supply and the source of power, other than fused disconnect switches, transformers, fused cutouts and automatic transfer switches, are prohibited. Such disconnect switches, cutouts, transformers and automatic transfer switches shall supply only the fire alarm system and other systems covered by this reference standard. When the utility company requires the installation of metering current transformers, the system supply shall be connected on the load side of the current transformers. All installations shall comply with the applicable sections of the New York City Electrical Code.

The primary source of power and the secondary source (if said secondary source is an emergency power system or generator) shall each be provided with a means of disconnect from the fire alarm system. For buildings supplied at 120/208 volts, each disconnect shall consist of a fused cutout panel, utilizing cartridge fuses, with provision for interrupting the unfused neutral and all ungrounded conductors. The neutral shall be provided with a removable solid copper bar. The incoming service neutral shall be bonded to the metallic housing of the cutout panel on the line side of the removable bar. The fused cutout panel housing shall consist of a locked metallic cabinet with hinged door, painted fire department red, and permanently identified as to the system served. For buildings served at 265/460 volts, the primary and secondary service disconnects shall be fused disconnect switches (in lieu of fused cutout panels) in locked, red painted, permanently identified enclosures. The service voltage shall be transformed to 120/208 volts and a fused cutout panel provided within 5 feet of the transformer on the 120/208 volt side. The incoming supply connections shall comply with the New York City Electrical Code, and the fused cutout panel shall comply with the requirements specified herein before.

B. PRIMARY POWER SOURCE

The primary service to the fire alarm system shall be so arranged that the building source of supply can be disconnected without de-energizing the fire alarm supply. To accomplish this, the primary fire alarm supply shall be connected ahead of all building over current protection and/or switching devices.

C. SECONDARY POWER SOURCE

The secondary service to the fire alarm system shall be provided as follows:

1. If the building has a required emergency power system, the secondary source shall be the emergency power system, regardless of whether the primary source is utility company power or an isolated plant.

2. If the building has an emergency generator supplying power to any of the loads listed in Section 27-396.4 of the Building Code, the secondary source shall be the generator.

3. For all other buildings, the secondary source shall be a battery supply provided in accordance with Reference Standard 17-5 for storage batteries. The battery shall be designed for 24-hour supervisory operation of the system, followed by 15 minutes of total system load.

(iii). WIRING

A. Power Conductors (Above 75 volts) shall be:

1. Copper: THHN, THWN\THHN, TFFN, TFN, FEP, RHH, RHW-2, XHH, or XHHW minimum 600 volts; 90 C; for installation in rigid metallic conduit (RMC), intermediate metallic conduit (IMC) or electric metallic tubing (EMT).

2. Cable type MI, M.E.A. approved for fire alarm service.

B. Low Voltage Conductors (75 volts and less) shall be:

1. Copper: THHN, THWN\THHN, TFFN, TFN, FEP, RHH, RHW, XHH, or XHHW minimum 600 volts; 90 C; for installation in rigid metallic conduit (RMC), intermediate metallic conduit (IMC) or electric metallic tubing (EMT)

2. Minimum wire size No. 18 AWG.

3. Multi-conductor cables run in raceways, or exposed as described hereinafter, shall meet the following additional requirements:

(a) Type FPLP only; minimum insulation thickness 15 mils; minimum temperature 150 C; colored red.

(b) Red colored jacket overall; minimum thickness 25 mils.

(c) Cable printing as per UL1424; must bear additional description "ALSO CLASSIFIED NYC CERT. FIRE ALARM CABLE" legible without removing jacket.

C. Installation of Conductors and Raceway shall be in accordance with the following:

1. Power conductors shall not be installed in common raceways with low voltage conductors.

2. Comply with applicable requirements of New York City Electrical Code, except where requirements are exceeded by this Reference Standard.

3. Conductors other than M.I. cable shall be run in raceway, except as specifically described below.

4. Multi-conductor cables may be installed without raceway protection where cable is protected by building construction. Where not protected by building construction, cables shall be located 8 feet or more above the finished floor and not subject to physical tampering or hazard. Locations within eight feet of the finished floor that are deemed as "protected by building construction" shall include raised floors, shafts, telephone and communication equipment rooms and closets, and rooms used exclusively for fire alarm system equipment.

5. All wiring within mechanical and elevator equipment rooms shall be run in raceways.

6. Raceways run within 8 feet of finished floor in garage areas, loading docks, mechanical rooms, and elsewhere where subject to mechanical damage, shall be rigid galvanized steel conduit only.

7. Where wiring is required to be run in raceway, install conductors in rigid metallic conduit (RMC), intermediate metallic conduit (IMC) or electric metallic tubing (EMT), except that multi-conductor cables may also be run in surface metal raceway. Conductors for other electrical systems shall not be installed in raceways containing REFERENCE STANDARD 17 conductors.

8. Where allowed to be run without raceway protection, multi-conductor cables shall be installed as follows:

(a) Cables shall not depend on ceiling media, pipes, ducts, conduits, or equipment for support; Cables must be supported independently from the building structure.

(b) Cables must be secured by cable ties, straps or similar fittings, so designed and installed as not to damage the cable. Cables must be secured in place at intervals not exceeding 5'-0" on centers and within 12" of every associated cabinet, box or fitting.

9. Installation of raceways, boxes and cabinets shall comply with the following general requirements:

(a) Covers of boxes and cabinets shall be painted red and permanently identified as to their use.

(b) Penetrations of fire-rated walls, floors or ceilings shall be fire stopped.

(c) Within stairways, raceways within 8 feet of the floor shall not be installed so as to reduce or obstruct the stairway radius.

(d) Raceways or cables shall not penetrate top of any equipment box or cabinet.

10. All conduits supplying 120-volt power to the fire alarm control unit and/or to outlying control cabinets, shall contain a green insulated grounding conductor sized in accordance with the New York City Electrical Code (#10 AWG minimum). The grounding conductor shall be connected to the ground bus or other suitable grounding terminal in each box and cabinet in which it enters. At the fuse cutout panel supplying the fire alarm system, provide a grounding electrode conductor sized and installed in accordance with the New York City Electrical Code (#10 AWG minimum).

11. For cabinets whose 120 volt supply is not derived from the main fire alarm system cutout panel, provide green insulated separate grounding electrode conductors, sized and installed as per New York City Electrical Code (#10 AWG minimum). In steel-framed buildings, a connection to local steel structure will be acceptable.

12. Splices and terminations of wires and cables shall be as follows:

(a) Permitted only in boxes or cabinets specifically approved for the purpose.

(b) Utilize mechanical connections specifically approved by U.L.486 A & C for the conductors, or if soldered, first joined so as to be mechanically and electrically secure prior to soldering and insulating. Temperature rating of completed splices shall equal or exceed the temperature rating of the highest rated conductor.

13. Wiring for audible notification devices shall be arranged so that a loss of a portion of the wiring on a floor will not render more than 60% of the devices inoperative, and the devices shall be so connected to the circuitry (i.e. by means of alternate circuits) as to maintain at least partial audibility throughout the entire floor.

(iv) The name and telephone number of the central office company shall be displayed at the manual pull station.

(v) There shall be a Fire Safety Director on duty at all times that the premises is actually occupied by the number of persons specified in the opening paragraphs of these rules. The Director shall have a Certificate of Fitness issued by the New York City Fire Department.

(vi) Applications shall be filed and permits obtained as required by departmental memoranda concerning fire alarm systems.

§15-02 Interior Fire Alarm and Signal System for Place of Assembly Used as a Cabaret and for Stages, Dressing Rooms and Property Rooms.

(a) Number of occupants. Subdivisions 27-968(a)(10)(a) and (b) of the Building Code state that an interior fire alarm and signal system shall be provided in any room, place or space occupied or arranged to be occupied by 75 or more persons and in which either any musical entertainment, singing, dancing or other form of amusement is permitted in connection with the restaurant business or the business of directly or indirectly selling to the public food or drink, or where dancing is carried on and the public may gain admission, with or without payment of a fee, and food or beverages are sold, served, or dispensed, and any new or altered catering place as of April 4, 1979 having 300 or more persons. This does not apply to eating or drinking places which provide incidental musical entertainment, without dancing, either by mechanical devices, or by not more than three persons playing piano, organ, accordion or guitar or any stringed instrument or by not more than one singer accompanied by himself or a person playing piano, organ, accordion, guitar or any stringed instrument.

(b) Occupant load. The occupant load of a Place of Assembly shall be calculated by dividing the net floor area of the space by the appropriate figure in the following table:

	Occupancy	Net Floor Area per Occupancy (square feet)
(1)	Dance Floor	10
(2)	Dining Spaces	12
(3)	Standing Room (Audience) in all Places of Assembly	4
(4)	Seating Area (Audience) in all Places of Assembly	
(i)	Fixed Seats	Designed Number of Seats or Occupants
(i)	Movable Seats	10

(c) Capabilities and components.

(1) Fire Alarm System: shall be closed circuit, "electrically supervised", individually coded and connected to an approved franchise/central office alarm company.

A "supervised" system is one that is electrically monitored so that the occurrence of a single open or single ground fault condition of its wiring which prevents the required normal operation of the system or causes the failure of its primary (main) power supply source is indicated by a distinctive trouble signal.

(i) Manual fire alarm stations: shall be installed at each required natural path of egress from all levels from public assembly area.

(ii) Fire alarm gongs: shall be installed to provide adequate audibility throughout the Public Assembly area and all areas

occupied in conjunction with the area at all levels including dressing rooms, rest rooms, coat rooms, etc. "Audibility" shall be loud and distinct under maximum sound system operation unless section 15-02(c)(2)(ii) is complied with.

(iii) Sprinkler waterflow device: shall be installed to indicate flow of water in the sprinkler system and shall be made part of the interior Fire Alarm by interconnecting the waterflow device to the interior Fire Alarm so that actuation of the waterflow device shall sound a distinctive coded alarm via the fire alarm gongs.

(2) General requirements.

(i) The components of the system shall require New York City M.E.A. approval.

(ii) A device may be installed to automatically turn off the sound system and psychedelic and special effects lighting when a manual fire alarm and/or sprinkler waterflow device is activated in all public assemblies that require an interior fire alarm and signal system.

(iii) A. SOURCES OF ELECTRICAL POWER

Two sources of electrical power shall be provided as follows:

1. The primary source shall be generated electric power not exceeding 277/480 volts, supplied by utility company power, or isolated plant.

2. The secondary source shall be an emergency power system (as per Section 27-396 of the Building Code), an emergency generator and/or battery power.

3 One source of power shall be connected to the system at all times. The primary and secondary power sources shall be so arranged and controlled by automatic transfer switches and/or circuitry that when the primary source of power fails, the secondary source will be connected automatically to the fire alarm signal system. Intermediary devices between the system supply and the source of power, other than fused disconnect switches, transformers, fused cutouts and automatic transfer switches, are prohibited. Such disconnect switches, cutouts, transformers and automatic transfer switches shall supply only the fire alarm system and other systems covered by this reference standard. When the utility company requires the installation of metering current transformers, the system supply shall be connected on the load side of the current transformers. All installations shall comply with the applicable sections of the New York City Electrical Code.

The primary source of power and the secondary source (if said secondary source is an emergency power system or generator) shall each be provided with a means of disconnect from the fire alarm system. For buildings supplied at 120/208 volts, each disconnect shall consist of a fused cutout panel, utilizing cartridge fuses, with provision for interrupting the unfused neutral and all ungrounded conductors. The neutral shall be provided with a removable solid copper bar. The incoming service neutral shall be bonded to the metallic housing of the cutout panel on the line side of the removable bar. The fused cutout panel housing shall consist of a locked metallic cabinet with hinged door, painted fire department red, and permanently identified as to the system served. For buildings served at 265/460 volts, the primary and secondary service disconnects shall be fused disconnect switches (in lieu of fused cutout panels) in locked, red painted, permanently identified enclosures. The service voltage shall be transformed to 120/208 volts and a fused cutout panel provided within 5 feet of the transformer on the 120/208 volt side. The incoming supply connections shall comply with the New York City Electrical Code, and the fused cutout panel shall comply with the requirements specified in this rule.

B. PRIMARY POWER SOURCE

1. The primary service to the fire alarm system shall be so arranged that the building source of supply can be disconnected without de-energizing the fire alarm supply. To accomplish this, the primary fire alarm supply shall be connected ahead of all building over current protection and/or switching devices.

2. Partial systems such as strobe light control panels, partial fire alarm, automatic smoke/heat detection, and sprinkler alarm subsystems and/or other associated systems may be connected to an emergency supply riser panel via a tapped connection, and an identified, locked fused cutout box located within 5 feet of the tap. Where an emergency power system (E.P.S.) is provided in accordance with Section 27-396.4 of the Building Code, it shall be connected to the emergency supply riser. Where an E.P.S. is not available, the emergency supply riser shall be connected to a tap ahead of the service switch.

C. SECONDARY POWER SOURCE

The secondary service to the fire alarm system shall be provided as follows:

1. If the building has a required emergency power system, the secondary source shall be the emergency power system, regardless of whether the primary source is utility company power or an isolated plant.

2. If the building has an emergency generator supplying power to any of the loads listed in Section 27-396.4 of the Building Code, the secondary source shall be the generator.

3 For all other buildings, the secondary source shall be a battery supply provided in accordance with Reference Standard 17-5 for storage batteries. The battery shall be designed for 24-hour supervisory operation of the system, followed by 15 minutes of total system load.

(iv). WIRING

A. Power Conductors (Above 75 volts) shall be:

1. Copper: THHN, THWN\THHN, TFFN, TFN, FEP, RHH, RHW-2, XHH, or XHHW minimum 600 volts; 90 C; for installation in rigid metallic conduit (RMC), intermediate metallic conduit (IMC) or electric metallic tubing (EMT).

2. Cable type MI, M.E.A. approved for fire alarm service.

B. Low Voltage (75 volts and less) shall be:

1. Copper: THHN, THWN\THHN, TFFN, TFN, FEP, RHH, RHW, XHH, or XHHW minimum 600 volts; 90 C; for installation in rigid metallic conduit (RMC), intermediate metallic conduit (IMC) or electric metallic tubing (EMT)

2.Minimum wire size No. 18 AWG.

3 Multi-conductor cables run in raceways, or exposed as described hereinafter, shall meet the following additional requirements:

(a) Type FPLP only; minimum insulation thickness 15 mils; minimum temperature 150 C; colored red.

(b) Red colored jacket overall; minimum thickness 25 mils.

(c) Cable printing as per UL1424; must bear additional description "ALSO CLASSIFIED NYC CERT. FIRE ALARM CABLE" legible without removing jacket.

C. Installation of Conductors and Raceway shall be in accordance with the following:

1. Power conductors shall not be installed in common raceways with low voltage conductors.
2. Comply with applicable requirements of New York City Electrical Code, except where requirements are exceeded by this Reference Standard.
3. Conductors other than M.I. cable shall be run in raceway, except as specifically described below.
4. Multi-conductor cables may be installed without raceway protection where cable is protected by building construction. Where not protected by building construction, cables shall be located 8 feet or more above the finished floor and not subject to physical tampering or hazard. Locations within eight feet of the finished floor that are deemed as "protected by building construction" shall include raised floors, shafts, telephone and communication equipment rooms and closets, and rooms used exclusively for fire alarm system equipment.
5. All wiring within mechanical and elevator equipment rooms shall be run in raceways.
6. Raceways run within 8 feet of finished floor in garage areas, loading docks, mechanical rooms, and elsewhere where subject to mechanical damage, shall be rigid galvanized steel conduit only.
7. Where wiring is required to be run in raceway, install conductors in rigid metallic conduit (RMC), intermediate metallic conduit (IMC) or electric metallic tubing (EMT), except that multi-conductor cables may also be run in surface metal raceway. Flexible metallic conduit, not exceeding 36" in length, shall be permitted for final connections to initiating and notification devices. Conductors for other electrical systems shall not be installed in raceways containing REFERENCE STANDARD 17 conductors.
8. Where allowed to be run without raceway protection, multi-conductor cables shall be installed as follows:
(a) Cables shall not depend on ceiling media, pipes, ducts, conduits, or equipment for support; Cables must be supported independently from the building structure.
(b) Cables must be secured by cable ties, straps or similar fittings, so designed and installed as not to damage the cable. Cables must be secured in place at intervals not exceeding 5'-0" on centers and within 12" of every associated cabinet, box or fitting.

9 Installation of raceways, boxes and cabinets shall comply with the following general requirements:
(a) Covers of boxes and cabinets shall be painted red and permanently identified as to their use.
(b) Penetrations of fire-rated walls, floors or ceilings shall be fire stopped.
(c) Within stairways, raceways within 8 feet of the floor shall not be installed so as to reduce or obstruct the stairway radius.
(d) Raceways or cables shall not penetrate top of any equipment box or cabinet.

10. All conduits supplying 120-volt power to the fire alarm control unit and/or to outlying control cabinets, shall contain a green insulated grounding conductor sized in accordance with the New York City Electrical Code (#10 AWG minimum). The grounding conductor shall be connected to the ground bus or other suitable grounding terminal in each box and cabinet in which it enters. At the fuse cutout panel supplying the fire alarm system, provide a grounding electrode conductor sized and installed in accordance with the New York City Electrical Code (#10 AWG minimum).

*12. For cabinets whose 120 volt supply is not derived from the main fire alarm system cutout panel, provide green insulated separate grounding electrode conductors, sized and installed as per New York City Electrical Code (#10 AWG minimum). In steel-framed buildings, a connection to local steel structure will be acceptable.

"12." enacted but "11" probably intended.

12. Splices and terminations of wires and cables shall be as follows:
(a) Permitted only in boxes or cabinets specifically approved for the purpose.
(b) Utilize mechanical connections specifically approved by U.L.486 A & C for the conductors, or if soldered, first joined so as to be mechanically and electrically secure prior to soldering and insulating. Temperature rating of completed splices shall equal or exceed the temperature rating of the highest rated conductor.

13. Wiring for audible and visual alarm notification devices shall be arranged so that a loss of a portion of the wiring on a floor will not render more than 60% of the devices of each type inoperative, and the devices shall be so connected to the circuitry (i.e. by means of alternate circuits) as to maintain at least partial audibility/visibility throughout the entire floor.

(v) The equipment shall be colored RED and enclosed in suitable housing permanently fastened to the structure at the appropriate locations. A diagonal white stripe one inch wide from upper left corner to lower right corner shall be painted or applied to sending stations. The stripe shall not render any lettering illegible or obliterate the station number.

(vi)The name and telephone number of the central office company shall be displayed at all manual pull stations and at all central office transmitters.

(vii) There shall be a fire guard on duty at all times that the Place of Assembly is open and functioning as a cabaret. The fire guard shall have a Certificate of Fitness issued by the New York City Fire Department.

(viii)Emergency Lighting and Sprinkler Systems shall be installed and maintained as required by law.

(ix)A Fire Alarm System in a Place of Assembly subject to this rule in a high rise (Class E) office building shall interface with Fire Alarm and Communication System required by Local Law No. 5/1973.

(x) Applications shall be filed and permits obtained as required by Departmental Memorandum.

§15-03 [Repealed]

§15-04 Exemption of Certain Existing J-1 Residential Hotels from Certain Fire Safety Special Filing Requirements.

(a) *Definition.* Existing J-1 Residential Hotel. An existing J-1 residential hotel is defined as a single room occupancy multiple dwelling, in which at least seventy-five (75) percent or more of the total number of occupied individual dwelling units:
(1) have had no more than two (2) separate tenancies for at least three (3) years preceding the date on which the application for residential hotel status is made or, preceding the date of submission of an annual certification as set forth below or
(2) have been used by a religious not-for-profit organization

as a residency for its members who maintain residency for at least (1) year and have no more than two (2) separate tenancies for at least (1) year preceding the date on which the application for residential hotel status is made, provided that a fire safety plan for fire drill and evacuation procedures in accordance with the requirements of the Fire Commissioner shall be submitted to the Fire Department and the approval of the Fire Commissioner shall be obtained.

(b) *Details of exemptions*. This section shall exempt owners of existing "residential hotels", as that term is defined in §15-04(a), from J-1 fire safety special filing requirements of §§27-382(b), 27-384(b), 27-954(w), 27-989(b), 27-996.2(a)(2) of Article 26 of Subchapter 1 of Chapter 1 of Title 27 of the Administrative (Building) Code as enacted by Local Law 16 of 1984, effective March 17, 1984, as well as installation requirements set forth in the following sections:
(1) §27-382 (b) Power source-Exit lights.
(2) §27-384 (b) Power source-Exit signs.
(3) §27-954 (w) Required sprinklers.
(4) §27-989 (b) Elevator in readiness.
(5) §27-996.2 (a) (2) Firemen service operation in existing elevators.

(c) *Certification*.
(1) The certification of residential hotel status may be obtained only by the filing of an alteration application for residential hotel certification. Such application shall contain the supporting documentation required in §15-04(d) below. Certification of residential hotel status as defined in § [*sic*] 15-03(a) [*sic*] above shall be issued by the borough superintendent. Certification shall be valid for a period of one (1) year from the date of initial certification. Thereafter, the owner of the residential hotel shall engage a registered architect or licensed professional engineer to certify annually through the filing of a building notice application that the residential hotel is in compliance with the requirements of § [*sic*] 15-03(a) [*sic*] above.
(2) Owners of residential hotels shall keep a copy of their residential hotel certification on site at the hotel. Failure to timely renew a hotel's residential certification may result in the issuance of violations for the hotel's failure to comply with the requirements of Local Law 16 of 1984 and Local Law 16 of 1987 for a J-1 occupancy.

(d) *Supporting Documentation.* The following documentation shall be furnished by the owner in support of his or her application for certification of residential hotel status:
(1) Certificate of Occupancy or, if unavailable;
(2) Occupancy and Arrangement Card from the Department of Housing Preservation and Development and Department of Housing Preservation and Development Computer Printout;
(3) List all rooms occupied by tenants who have resided at the premises for six months or longer or who are in occupancy pursuant to a lease of six months or longer, together with the name of the tenant in each of the aforementioned rooms and copies of any and all existing leases for the period stated in § [*sic*] 15-03(a) [*sic*] of this section; and
(4) For each dwelling unit in the premises subject to rent control or hotel stabilization, copies of the annual registration statement filed with the New York State Division of Housing and Community Renewal; and
(5) Copies of any relevant documents filed by the owner with the Hotel Stabilization Association; and
(6) Any other documentation deemed relevant by the borough superintendent, in his or her discretion.

(e) *Determination of J-2 Dormitory*.
(1) A building owner may contend that his/her building is a dormitory and therefore as a J-2 occupancy need only provide stair and elevator signs, and if a high-rise building also remove locks on elevator and hoistway doors. To qualify as a dormitory, the building's current Certificate of Occupancy must indicate use as a dormitory. Where the Certificate of Occupancy indicates both dormitory and J-1 occupancy, those portions which are J-1 must comply with LL 16/84 requirements for J-1 occupancies.
(2) When an owner seeks to amend his building's Certificate of Occupancy [*sic*] to provide for dormitory occupancy, he must submit an affidavit stating he will use the dormitory space only for sleeping accommodations of individuals on a month-to-month or longer-term basis (Adm. Code §27-265) and that the dormitory will be owned and operated by either a not-for-profit corporation or a school. Such amended Certificates of Occupancy shall provide that the dormitory may only be owned or operated by either a not-for-profit corporation or a school.

§15-05 Filing and Approval of a Fire Safety Plan for Buildings Containing Transient Occupants Such as Hotels and Motels.

(a) *Number of occupants*.
These rules and regulations shall apply to buildings or parts thereof classified in Article 11 of Subchapter 3 of Chapter 1 of [*sic*] Title 27 of the Administrative Code of the City of New York as occupancy group J-1, J-2 occupied or arranged to be occupied in whole or part by a transient occupancy. For the purpose of these rules and regulations, buildings or parts thereof which contain a total of more than 30 sleeping rooms or can accommodate a total of more than 30 lodgers, or contains more than 15 sleeping rooms, or can accommodate more than 15 lodgers above the first or ground story, used for living or sleeping purposes by the same person or persons for a period of ninety days or less shall be considered as being occupied by a transient occupancy. Such buildings shall include but are not limited to buildings occupied as hotels, motels, lodging houses, dormitories and single room occupancies. All such buildings occupied or arranged to be occupied in whole or part by a transient occupancy, regardless of the number of sleeping rooms or accommodations, over 75 feet in height, shall comply with these rules and regulations. The owner or other person having charge of such building shall file a Fire Safety Plan with the Fire Department indicating compliance with §15-05(b) within 30 days after the effective date of these rules and regulations. The owner or other person shall resubmit the revised Fire Safety Plan for approval within 30 days after receiving comments from the Fire Department. Upon approval, the Fire Safety Plan shall be immediately put into effect. The owner or other person having charge of such building shall comply with §§15-05(c)(1) to 15-04(c)(5) within 30 days of the effective date of these rules & regulations.

b) *Details of fire safety plan.*
(1) A fire safety plan for fire drill and evacuation procedures in accordance with the requirements of the Fire Commissioner shall be submitted to the Fire Department and the approval of the Fire Commissioner shall be obtained. The applicable parts of the fire safety plan shall be distributed to the building service employees. All employees of the building shall participate and

cooperate in carrying out the provisions of the fire safety plan.
(2) *Fire safety director and deputy fire safety director*.

(i)One employee shall be designated as fire safety director and a sufficient number of employees shall be designated as deputy fire safety directors. Such employees shall have a knowledge of the building's fire protection systems and shall have a certificate of fitness, in accordance with the requirements of the Fire Commissioner, qualifying him to conduct fire drills, evacuations and related activities such as organizing, training and supervising a fire brigade when required. In the absence of a fire safety director, when a fire safety director is required to be on duty in the building, such deputy fire safety director shall act as fire safety director.

(ii) As the building is continuously occupied, there shall be a fire safety director continuously on duty in the building with the required certificate of fitness. During fire emergencies, the primary responsibility of the fire safety director shall be the manning of the fire command post and the direction and execution of the evacuation as provided in the fire safety plan and to assist the Fire Department with his knowledge of the building's fire protection systems. Such activities shall be subject to the Fire Department control.

(3) If sufficient personnel are available, as determined by the Fire Department, a fire brigade shall be organized.

(4) Fire drills shall be conducted, in accordance with the fire safety plan, at least once every three months on each shift. A written record of such drills shall be kept on the premises for a three year period and shall be readily available for inspection by the Fire Department.

(5) In buildings where compliance would cause practical difficulty or undue hardship, the Fire Commissioner may waive or modify the requirements of this subdivision and accept alternatives fulfilling the intent of these requirements consistent with public safety.

(c) *Signage*.

(1) *Elevator landings*. A sign shall be posted and maintained on every floor at the elevator landing. The sign shall read "IN CASE OF FIRE, USE STAIRS UNLESS OTHERWISE INSTRUCTED". The lettering shall be at least one-half inch block letters and of contrasting color from the background or as otherwise approved by the Commissioner of Buildings. Such lettering shall be properly spaced to provide good legibility. The sign shall also contain a diagram showing the location where it is posted and the location and letter identification of the stairs on the floor. The sign shall be at least eight inches by ten inches, located directly above a call button and securely attached to the wall or partition. The top of such sign shall not be above six feet from the floor level. The diagram on such sign may be omitted provided that signs containing such diagram are posted in conspicuous places on the respective floor. In such case, the sign at the elevator landing shall be at least two and one half inches by ten inches and the diagram signs shall be at least eight inches by ten inches.

(2) *Floor numbering*.

A sign shall be posted and maintained with each stair enclosure on every floor, indicating the number of the floor. The numerals and background shall be in contrasting colors. The sign shall be securely attached to the stair side of the door.

(3) *Stair and elevators*.

Each stair and each bank of elevators shall be identified by an alphabetic letter. A sign indicating the letter of identification for the elevator bank shall be posted and maintained at each elevator landing directly above or as part of the sign specified in §15-05(c)(1). The stair identification sign shall be posted and maintained on the occupancy side of the stair door. The letter on the sign shall be at least three inches high, of bold type and of contrasting color from the background. Such signs shall be securely attached.

(4) *Sign material*. Signs shall be of metal or other durable material.

(5) *Placing, size and content of signs*. A sign shall be posted and maintained on the inside of every door opening onto a public corridor giving access to a sleeping room. The sign shall contain a diagram showing the location where it is posted and the location and letter identification of the exit stairs on the floor. The diagram shall indicate the number of doors opening onto the public corridor which must be passed to reach each exit stair. The sign shall be at least eight inches by ten inches, located on the inside of the door and securely attached thereto. The top of such signs shall not be above six feet from the floor level. These signs are in addition to the signs required in §15-05(c)(1). These signs may contain such additional information as the Fire Department may require.

(6) *Additional sign requirements*. When floors or parts of floors are used as accessory to a J-1 and J-2 transient occupancy, "Elevator Landings" §15-05(c)(1), "Floor Numbering" §15-05(c)(2) and "Stairs and Elevators" §15-05(c)(3), shall be required.

§15-06 Design of Composite Construction with Metal Decks or Lightweight Concrete.

(a) Metal deck construction is to be approved strictly in accordance with Board of Standards and Appeals or MEA approval in all respects, with no interchangeability or equivalent materials authorized except as noted in these rules.

(b) When metal decks have been approved for use where a fire resistive floor or roof is required, equivalent materials may be authorized or interchanged for any of the components of the assembly by borough superintendents pursuant to §27-107 of the Administrative Code based on; [*sic*]

(1) Similar full scale tests conforming with A.S.T.M. E119-1988; or,

(2) A combination of small scale and/or half scale tests and engineering evaluation acceptable to the commissioner in conjunction with evaluation of full scale tests conforming with ASTM E119-1988 for a variety of assemblies of combination of materials, or

(3) A combination of small scale, half scale or full size tests representative of the actual fire exposure of the occupancy and engineering evaluations, all acceptable to the commissioner.

(c) When metal decks have been approved for use where a fire resistive floor or roof is required without any fire protection below the metal deck, they shall not be authorized in connection with composite beam design unless the approval specifies that the decks have been tested in accordance with both floor and beam requirements; or, alternately, fire protection is applied below the metal deck having the same thickness as that applied to the beam, for that width of slab acting as part of the composite beam, except that no such fire protection need be applied below the metal deck when the floor or roof slab and deck have a fire resistive rating at least equal to that of the

supporting beams, ef'c of the concrete fill-in is equal to or greater than 3000 p.s.i..

(d) Where the structural design is in accordance with load tests referred to in a board approval, the load carrying capacity can be accepted provided that design criteria for all structural elements are specified in the resolution of the board. Where the approval of the board simply makes general reference to other criteria, the following structural guidelines are to be adhered to, with respect to composite construction:

(1) Concrete in the ribs of metal decks is to be completely excluded in flexural computations, in the composite T-beam design. However, it may be included for bond calculations (which is to be based on allowable stresses of 20 p.s.i.) as well as shear stresses for slab action exclusively.

(2) Slab designs shall be required to comply with all applicable requirements of Reference Standards RS 10-3, and RS 10-5A with structural calculations submitted in all cases in regard to n ratios (see §1102(b) of RS 10-3), fiber [*sic*] stresses, shear stresses, bond stresses, length-deep and/or deflection limitations, and shear connection loads.

(3) The capacity of shear connectors in lightweight concrete shall only be rated at 80 percent of the values specified in Table 1.11.4 of Reference Standard RS 10-5 for normal weight aggregate. When metal decks with ribs not exceeding 1 and 1/2 inches in depth are used, the capacity of the shear connectors is to be further reduced by 15 percent, so as to have a total rated capacity of 65 percent of the values stated in Table 1.11.4 when lightweight concrete is used in composite construction with metal decks, and 85 percent when normal aggregate is used in such construction, unless prequalified load tests pursuant to §27-599 warrant higher values. Shear connectors not listed in Table 1.11.4, or differing on length or size may not be used without specific Board Approval for specific loads.

(4) When metal decks having ribs exceeding 1 and 1/2 inches in height are employed with composite construction, prequalified load tests of the slab and beam, pursuant to §27-599, shall be required before any approval is granted.

(5) All welding on [*sic*] shear connectors shall be performed by licensed welders, except as otherwise authorized in an intradepartmental memorandum dated June 6, 1967.

§15-07 Fire-Retarding of Entrance Halls, Stair Halls and Public Halls in Old Law Tenements and Converted Dwellings.

(a) *Intent.* The fire-retarding rules herewith set forth are approved by the Department of Buildings for old law tenements and converted dwellings where their entrance halls, stair halls and public halls are required, by §189, subdivisions 1 and 4, §238, subdivision 4, and §218, subdivisions 5 and 6, Multiple Dwelling Law, and by §27-2044, Housing Maintenance Code, to be fire-retarded in a manner approved by the Department of Buildings.

(1) All entrance halls, stair halls and public halls, including service halls and stairs, shall be fire retarded to the extent required by the Multiple Dwelling Law and the Housing Maintenance Code.

(2) It is the intent that all wood structural members of partitions, ceilings and stair soffits shall be completely protected with fire-retarding materials where they may be exposed to fire in entrance, stair and public halls. To this extent these rules and regulations cover only general conditions and are not designed to cover specific or special cases. Where such may occur the owner is required to consult the Department of Buildings and receive instructions before work is started.

(3) Where existing dumbwaiter shafts are located in, or open on public halls which are required to be fire-retarded, such dumbwaiter shafts, when not constructed of fireproof or fire-retarding materials, shall be fire-retarded on the inner side, from the lowest story to the roof inclusive, in accordance with the requirements of §15-07(b)(1) or (b)(2), except in cellar where such shafts shall be enclosed with fireproof materials.

All doors opening from such dumbwaiter shafts shall be self-closing, and doors and assemblies when of wood or other non-fireproof construction shall be lined on both sides with No. 26 U.S. gage [*sic*] metal, except in cellar where doors and assemblies shall have a fire-resistive rating [*sic*] of at least one (1) hour.

(4) It is not intended that these rules and regulations in themselves require plans to be filed. However, should any work involve structural changes, then plans are required to be filed in the Department of Buildings and such changes shall be subject to all other rules and regulations applicable thereto.

(5) Work shall not commence until satisfactory evidence has been submitted to the Department of Buildings that compensation insurance has been obtained in accordance with the provisions of the Workmen's Compensation Law.

It is the intent of §238, subdivision 4, Multiple Dwelling Law, that every entrance hall, public hall and stair hall in every old law tenement four stories or more in height shall be fire-retarded.

Every old law tenement three stories and a basement, or three stories, basement and cellar in height shall be deemed to be four stories when the main entrance from the grade is to the basement, and every entrance hall, public hall and stair hall in such building shall be fire-retarded.

In old law tenements where the entrance halls, public halls and stair halls are required to be fire-retarded, existing wood stairs shall be fire-retarded in conformity with the requirements of these rules and regulations, whether or not such halls had been fire-retarded in accordance with plans filed with and approved by the former Tenement House Department or Department of Buildings, prior to the enactment of subdivision 4 of §238 of the Multiple Dwelling Law.

(b) *Partitions.* All existing partitions separating apartments from entrance halls, stair halls and public halls, or otherwise forming enclosing partitions of entrance halls, stair halls and public halls, shall be fire-retarded by any one of the following methods:

(1) *Metal lath and cement of gypsum mortar*. Completely remove all existing materials to face of studs or other structural members on hall side of partitions and recover with metal lath and two coats of cement or [*sic*] gypsum mortar. If cement mortar is used it shall be three-quarters inch (3/4") thick, if gypsum mortar is used it shall be one inch (1") thick. The second coat of mortar shall not be applied until the first coat has thoroughly set and in no case shall the second coat be applied on the same day that the first coat of mortar is applied.

In lieu of the above method, completely remove all combustible materials from plaster face of partitions on hall side and repair existing plaster. After inspection, cover existing plaster with herringbone or similar approved type metal lath with rigid rib reinforcement to provide good bond between new and existing

plaster. Cover lath with two coats (scratch and brown) of cement or [*sic*] gypsum mortar as above.
The first coat of cement mortar (scratch) shall be composed of one (1) part of Portland cement to one and one-half (1 1/2) parts of sand, with additional volume of hydrated lime not greater than ten (10) percent of the volume of Portland cement. The second coat (brown) shall be composed of one (1) part of Portland cement to three (3) parts of sand, with additional volume of hydrated lime not greater than ten (10) percent of the volume of Portland cement.
The first coat (scratch) of gypsum mortar shall be composed of one (1) part of gypsum to one (1) part of sand. The second coat (brown) of gypsum mortar shall be composed of one (1) part of gypsum to one and one-half (1 1/2) parts of sand.
(2) *Plaster boards and gypsum mortar or stamped metal*. Completely remove all existing materials to face of studs or other structural members on hall side of partitions and recover with plaster boards or perforated rock lath three-eighths inch (3/8") thick, covered with two coats of gypsum mortar (scratch and brown) so that the aggregate thickness shall be at least one inch (1"), or in lieu thereof, recover same with plaster boards one-half inch (1/2") thick, covered with No. 26 U.S. gage [*sic*] stamped metal.
In lieu of the above method, completely remove all combustible material from plaster face of partitions on hall side and repair existing plaster. After inspection, plaster boards or perforated rock lath may be applied directly over the existing plaster face of partitions on hall side. Cover plaster boards or perforated rock lath with two coats of gypsum mortar as above, or plaster boards may be covered with No. 26 U.S. gage [*sic*] stamped metal.
(3) *Mineral wool*. Fill solidly between partition uprights, from underside of flooring to ceiling with mineral wool blown in place by the pneumatic method, packed solidly to fill all spaces and voids.
(4) *Brick, gypsum, etc*. Fill solidly between partition uprights from underside of flooring to ceiling with brick, gypsum, or other acceptable material packed solidly to fill all spaces and voids. Where brick, gypsum, or other masonry material is intended to be used, application must be filed before installation with the Department of Buildings for approval of strength of existing members intended to support the proposed masonry fire-retarding.
(5) *Other methods*. No other method may be used unless same is acceptable to the Department of Housing and Buildings.
(6) *Removal of windows in public hall partitions*. When windows in walls or partitions are removed, both sides of the openings shall be sealed with fire-retarding materials, except that wood lath and plaster may be used on the room side of the opening when the existing surface of the room is constructed of wood lath and plaster.
(7) *Electric meters*. Where direct current (DC) electric meters of public utility companies are present or installed on partitions of public halls the fire-retarding shall continue unbroken behind the meters or the meters shall be mounted on a heavy slate back or non-magnetic fireproof equivalent, such as transite, asbestos board, etc., against which fire-retarding finished up tightly.
(8) *Partitions in Class B converted dwellings*. Where fire-retarding is required in any Class B converted dwelling referred to in §15-07(a)(7), both sides of all enclosure partitions of entrance halls, stair halls and public halls throughout such building shall be fire-retarded in accordance with the method set forth in §§15-07(b)(1) or (b)(2) or said partitions shall be fire-retarded in accordance with the provisions of §§15-07(b)(3) or (b)(4).
(9) *Partitions in altered old law tenements*. In any old law tenement where the occupancy is increased on any story, the enclosing partitions of any entrance hall, stair hall or public hall on the story where the occupancy has been increased, shall be fire-retarded on both sides. Such requirements shall apply only to the walls of the entrance hall, stair hall or public hall adjoining the altered apartment. The enclosing partitions of such halls other than those adjoining the altered apartment and the partitions on any story where the occupancy has not been increased, shall be fire-retarded on the hall side. The method of fire-retarding shall be as set forth in §§15-07(b)(1) or (b)(2), or said partitions shall be fire-retarded in accordance with the provisions of §§15-07(b)(3) or (b)(4).
(10) *Newly constructed partitions*. In any entrance hall, stair hall or public hall where any partition or part thereof is newly constructed, and where the plaster has been removed from any partition or part thereof, such partition shall be fire-retarded on both sides.
(c) *Ceilings*. Any approved method for fire-retarding partitions shall be acceptable for fire-retarding ceilings, provided that all existing materials are completely removed to face of joists. Mineral wool, brick gypsum or other masonry fill will not be accepted.
(1) Where any entrance hall, public hall or stair hall, or any portion thereof, in any part of any old law tenement or [*sic*] converted dwelling is required to be fire-retarded that portion of any ceiling directly underneath any such entrance hall, public hall or stair hall shall be fire-retarded. Where such ceiling is located in any store, apartment or other space it shall also be fire-retarded as required for partitions by §§15-07(b)(1) or (b)(2).
Where the above method is impractical due to the existing ceiling construction in any such store, apartment or other space, the Department of Buildings may permit the fire-retarding of such ceilings to be applied from above by removing the floor of any such entrance hall, public hall or stair hall and installing between the floor beams, and directly against ceiling below, a layer of heavy building paper over which there shall be placed a basket made of reinforced ribbed expanded metal lath weighing at least 3.4 pounds per square yard. Such basket shall be lined with Portland cement or gypsum mortar not less than one inch (1") in thickness. The building paper, metal lath and cement or gypsum mortar shall be carried at least halfway up on the side of beams. However, this method will not be accepted for the fire-retarding of any such ceiling located in a space used for a hazardous purpose or business, nor will it be accepted for fire-retarding of any such ceiling located in the cellar or for the fire-retarding of any ceiling located in any store, apartment or other space when such ceiling is constructed of wood or of wood and metal applied directly to the beams. In such cases the ceilings shall be fire-retarded according to the requirements of §§15-07(b)(1) or (b)(2).
(d) *Existing wood stairs*. Except where stairs of incombustible material are required in Class B converted dwellings as set forth in §15-07(a)(7), all wood railings, balustrades and newel

posts shall be completely removed from every existing wood stairs and such stairs shall be provided with railings, balustrades and newel posts of metal or other hard incombustible material, of such size and secured in such manner to the existing stairs as may be approved by the Department of Buildings, except handrails may be of hardwood.

Soffits and stringers of existing wood stairs shall be fire-retarded in accordance with the methods set forth in §§15-07(e) or (f).

(e) *Stair soffits.* The soffits of every stair in every entrance hall, public hall and stair hall, including any soffit extending beyond the enclosure partitions of any such hall, shall be fire-retarded.

Any approved method for fire-retarding partitions shall be acceptable for fire-retarding stair soffits provided that all existing materials are completely removed to face of structural members of stair soffits.

(f)*Fascia-stair and well.* Fascia of outside stringer on rake of stairs, and well fascia at floor level, shall be fire-retarded their full depth to form complete seals with the soffits of stairs and ceilings of halls, respectively. Type of fire-retarding shall be one of those herein approved for ceilings of halls, or in lieu thereof, cover fascia with sheet asbestos not less than three-sixteenths inch (3/16") thick with joints well pointed over which there shall be an additional single layer of No. 26 U.S. gage [*sic*] stamped metal or cover fascia with a single layer of No.14 U.S. gage [*sic*] steel.

(g) *Fire-stopping.* All partitions required to be fire-retarded shall be fire-stopped with incombustible material at floors, ceilings and roofs. Fire-stopping over partitions shall extend from the ceilings to the underside of the flooring or roofing above. Fire-stopping under partitions shall extend from the underside of flooring to ceiling below. All [*sic*] spaces between floor joints (directly over and under partitions) shall be completely filled the full depth of joists. Any space from top of partition to underside of roof boarding shall be completely fire-stopped.

Fire-stopping shall be done with brick, cinder concrete, gypsum, metal lath and Portland cement or gypsum mortar, mineral wool, or other materials acceptable to the Department of Buildings.

(h) *Door openings.* Except as provided in §§15-07(h)(1) and (h)(2), all door openings into any public hall, entrance hall or stair hall which is required to be fire-retarded shall be equipped with self-closing protective assemblies having a fire-resistive rating of at least one hour.

(1) In old law tenements where the number of apartments is not being increased, existing wood doors opening into public halls, entrance halls or stair halls may remain provided such doors are made to be self-closing ("Butterfly" spring hinges are not acceptable) and, provided further, all glazed transoms and panels in every such door are glazed with wire glass. All such transoms shall be made stationary.

(2) Where, in any old law tenement, the number of apartments is being increased on one or more stories, door openings into public halls, entrance halls or stair halls on each story or stories shall be equipped with self-closing protective assemblies having a fire-resistive rating of at least one hour.

In such old law tenements existing wood doors opening into public halls, entrance halls or stair halls may remain on any story where there is no increase in the number of apartments, provided such doors and every transom and panel in same are made to conform to the requirements set forth in §15-07(h).

(3) All doors shall be properly fitted to their assemblies and there shall be no unnecessary space between doors and door bucks or saddles.

(i)*Materials.* All materials used in the process of fire-retarding shall be of a type and manufacture acceptable to the Department of Buildings.

The following shall be considered as minimum requirements:

(1) *Metal lath.* Metal lath shall weigh at least 30 pounds per square yard, except lath used over existing plaster which lath shall weigh at least 3.4 pounds per square yard and be reinforced with rigid ribs not less than three eighths inch (3/8") deep, spaced not more than eight inches (8") on center running full length of sheets. Where ribs exceed 4.8 inches on center, same shall have at least one intermediate one eighth inch (1/8") inverted rib running the full length of sheets.

Metal lath fastened to studs [*sic*] shall be attached at least six inch (6") [*sic*] intervals with 4-penny nails or one inch (1") roofing nails or No. 14 steel wire gage [*sic*] wire staples, and to wood joists by at least 6-penny nails, one and one-quarter inch (1 1/4") roofing nails, or one inch (1") No. 14 steel wire gage [*sic*] wire staples. When metal lath is applied over existing plastered surfaces, same shall be fastened with nails or staples of the same gage [*sic*] and such nails or staples shall have anchorage of at least one-half inch (1/2") in studs and three-quarters inch (3/4") in joists. Laps between the studs or joists shall be securely tied or laced. Stiffened metal lath on wood studs, or joists, shall be nailed or stapled at least at eight inch (8") intervals, and the laps between studs similarly tied or laced. Metal lath shall be galvanized or painted.

(2) *Plaster boards or perforated rock lath.* Plaster boards or perforated rock lath shall be of type and manufacture acceptable to the Department of Buildings. Each board shall bear the name of manufacturer [*sic*] and brand stamped thereon for inspection after erection.

Plaster boards or perforated rock lath nailed directly to wood studding or joists shall be fastened with one and one-eighth inches (1 1/8") wire nails of at least No. 13 steel wire gage [*sic*] with flat three-eighth inch (3/8") heads. When such boards are applied over existing plastered surfaces, same shall be fastened with nails of the same gage [*sic*] and such nails shall have anchorage of at least one-half inch (1/2") in studs and three-quarters inch (3/4") in joists. The maximum space between nails shall be four inches (4"). The joints shall be broken at every other board. The wetting of such boards before plastering is forbidden.

(3) *Stamped metal.* Stamped metal shall be No. 26 U.S. gage [*sic*] (equivalent thickness .018 inches or 3/160 inches) with one inch (1") lapped seams. Size of sheets shall be not more than twenty-four inches by ninety-six inches (24" x 96"), having a selvage consisting of a half-round bead sufficient to create a one inch (1") overlap at both seams. Nailing shall be secured direct to studs or joists with 6-penny smooth box nails (two inches (2") or No. 12 1/2 gage [*sic*]) with nails on end seams spaced not more than three inches (3") apart. Nailing to plaster is forbidden and in all cases nails shall have anchorage of at least one-half inch (1/2") in studs and three-quarters inch (3/4") in joists. All beads at seams shall be chisel sealed, making a tight joint. All sheets shall be marked "26 U.S. Gage" [*sic*] for identification and inspection after erection.

(4) *Mineral wool.* Mineral wool shall be of a type and

manufacture acceptable to the Department of Buildings.
Holes shall be cut approximately three inches (3") in diameter through the wood lath and plaster near the ceiling, in the panels between each two adjacent studs. As an alternative, holes may be cut approximately three inches by six inches (3" x 6") on every second stud. Check each stud panel with weight and line to find out whether there is any obstruction. If any cross-bridging or other obstruction is encountered additional holes shall be cut until access has been gained to all open spaces within the stud panel in all specified partitions. Mineral wool shall then be blown into all spaces by the pneumatic method with air pressure sufficient to pack the insulation to a density acceptable to the Department of Buildings. Mineral wool for this work shall be in bags or containers marked with manufacturer's name and label specifying its type.
(5) *Other materials*. No other material may be used unless same is acceptable to the Department of Buildings.

(j)*Exceptions.* Where any portion of any entrance hall, stair hall or public hall has been previously fire-retarded under the supervision of this department, the former Tenement House Department or various former Department of Buildings, such fire-retarding will be accepted only to the extent that same has been previously approved, provided, however, that such entrance hall, stair hall or public hall is otherwise made to conform to all the requirements set forth in these rules.

§15-08 Fire-Retarding of Cellar Ceilings in Old Law Tenements and Converted Dwellings.

(a) *Intent.* The fire-retarding rules herewith set forth are approved by the Department of Buildings for the existing multiple dwellings where the ceilings of the cellar or other lowest story is required, by §85 and §240, subdivision 3, Multiple Dwelling Law, and by §27-2044, Housing Maintenance Code, to be fire-retarded in a manner approved by the Department of Buildings**.**
(1) It is the intent of the law to provide a continuous fire-retarded covering over the entire ceiling of the cellar, or other lowest story, so as to prevent fire communicating with upper stories of a multiple dwelling.
Where there is a space less than four feet six inches (4'-6") in height from the ground or floor level to the underside of the first tier of beams, such space shall be considered as an "air space" and not as a cellar. However, when such space opens to a cellar where fire-retarding of the ceiling is required, then such space shall be separated from the cellar with a partition constructed of incombustible material in which there is provided self-closing door and assembly having a fire-resistive rating of at least one hour.
Where the ceiling of the cellar or other lowest story is required to be fire-retarded, all openings in such ceilings for stairways not located directly under a main stair, also openings in ceiling such as pipe shafts, vent shafts, unenclosed dumbwaiter shafts, disused flues, etc., shall be properly closed. (Private stairs within duplex apartments extending into cellar or basement are not required to be enclosed.)
New partitions erected to enclose existing stair referred to in the preceding paragraph shall be of incombustible materials. Existing partitions enclosing any such stair will be acceptable where same are of incombustible materials or where same are fire-retarded on both sides in accordance with the methods set forth in §15-07(b)(1) or (b)(2) and with materials conforming with the requirements of §15-07(i) of these rules and regulations. Door openings in such enclosure partitions shall be equipped with self-closing protective assemblies having fire-resistive ratings of at least one hour.
When existing shafts, including dumbwaiter shafts, extend below the ceiling a distance less than one-half (1/2) the height of the cellar, such shafts shall be considered as being part of the cellar ceiling and the enclosures of said shafts shall be fire-retarded in the same manner as required for cellar ceilings. All existing shafts, including dumbwaiter shafts, which extend below the ceiling a distance more than one-half (1/2) the height of the cellar shall be enclosed with incombustible materials. All shafts referred to in this paragraph shall have adequate cleanout at base consisting of fireproof [*sic*] self-closing door and assembly having a fire-rating of at least one hour.
Where new partitions or enclosures are erected in a cellar they shall be constructed of incombustible materials.
(2) *Wood girders, columns, posts, etc.* The fire-retarding material of ceiling of cellar or other lowest story shall be carried down and around all non-fireproof ceiling projections, such as wood girders, etc., which are less than six inches by six inches (6" x 6") in dimension.
The fire-retarding material also shall be turned down at least three inches (3") on all non-fire-retarding columns, posts, etc., which are less than six inches (6") in diameter.
(3) *Non-fire-retarded cellar partitions.* When non-fire-retarded partitions in cellar, or other lowest story, extend to the ceiling, the fire-retarding material of the ceiling shall be turned down at least three inches (3") on said partitions, or the partitions shall be cut off at top to permit the fire-retarding of the ceiling to be continuous.
Where, in any old law tenement three (3) stories and basement in height, there is also a cellar under the basement story, the ceiling of such cellar shall be fire-retarded; and also, in any such old law tenement, where the main entrance from the grade is to the first story that portion of the basement ceiling which is directly under the first story entrance hall, public hall and stair hall shall be fire-retarded.
In every old law tenement three (3) stories and basement in height with no cellar under the basement, where the main entrance from the grade is to the basement story, the ceiling of the basement story shall be fire-retarded throughout. In any such old law tenement where the main entrance from the grade is to the first story no such fire-retarding will be required.
(4) *Heating appliances*. The portion of the ceiling over any furnace, boiler or hot water heater shall be fire-retarded in accordance with the methods set forth in §§15-07(b)(1) or (b)(2), and such fire-retarding shall extend for a distance of at least four feet (4'-0") beyond the sides and rear, and eight feet (8'-0") in front of such furnace or boiler.
(5) It is not intended that these rules and regulations in themselves require plans to be filed. However, should any work involves structural changes, then plans are required to be filed in the Department of Buildings and such changes shall be subject to all other Rules and Regulations applicable thereto.
(6) Work shall not commence until satisfactory evidence has been submitted to the Department of Buildings that compensation insurance has been obtained in accordance with the provisions of the Workmen's Compensation Law.

(b) *Methods*. Cellar ceilings shall be fire-retarded according to any of the following methods:
Metal lath and cement or gypsum mortar conforming to §15-07(b)(1) of these rules.
Plaster boards and gypsum mortar or stamped metal conforming to §15-07(b)(2) of these rules and regulations.

No. 26 U.S. gage [*sic*] stamped metal over existing plastered ceiling, when erected without damage to the plaster. Furring strips are not required, but if used, they shall be metal covered on both sides and on face surface. Stamped metal shall not be applied until after existing plastered ceiling has been inspected and approved by an inspector of the Department of Housing and Buildings.
No other method may be used unless same are acceptable to the Department of Buildings.

(c) *Materials*. Materials used shall be in accordance with the provisions of §§15-07(i)(1), (i)(2) or (i)(3) of these rules and regulations.
Mineral wool, brick, gypsum or other masonry fill will not be accepted for fire-retarding cellar ceilings.
No other materials may be used unless same are acceptable to the Department of Buildings.

§15-09 Fire-Retarding of Cooking Spaces in all Multiple Dwellings.

(a) *Intent*. The rules herewith set forth are approved by the Department of Buildings for the protection of cooking spaces under §§33 [*sic*] and 176 of the Multiple Dwelling Law.
As set forth in §33 of the Multiple Dwelling Law, nothing in these rules shall be construed as permitting fire-retarding partitions in fireproof multiple dwellings.

(b) *Multiple dwelling law*. Except when sprinkler heads are installed in conformity with subdivision (e) of this section, §33 of the Multiple Dwelling Law requires fire-retarding of cooking spaces in existing and newly constructed class A and class B multiple dwellings.

(c) *Ceilings and walls exclusive of doors*. Walls and ceilings shall be fire-retarded according to any of the following methods:
Metal lath and cement or gypsum mortar conforming to §15-07(b)(1) of these rules.
Plaster boards and gypsum mortar or stamped metal conforming to §15-07(b)(2) of these rules and regulations.
No. 26 U.S. gage [*sic*] stamped metal over existing plaster when erected without damage to the plaster. Furring strips are not required, but if used, they shall be metal covered on both sides and on face surface. Stamped metal shall not be applied until after existing plaster has been inspected and approved by an inspector of the Department of Buildings.
Materials used shall be in accordance with the provisions of §§15-07(i)(1), (i)(2) or (i)(3) of these rules and regulations.
No other methods or materials may be used unless same are acceptable to the Department of Buildings.

(d) *Combustible material*. In every cooking space, all combustible material immediately underneath or within one foot of any apparatus used for cooking or warming of food shall be fire-retarded in conformity with the applicable provisions of these rules or covered with asbestos at least three-sixteenths inch (3/16") in thickness and twenty-six gage [sic] metal or with fire-resistive material of equivalent rating. There shall always be at least two feet (2'-0") of clear space above such apparatus.

(e) *Sprinkler heads installed in ceilings of cooking spaces in lieu of fire-retarding the ceilings and walls*. Where sprinkler heads are installed in the ceilings of cooking spaces in lieu of fire-retarding the ceilings and walls, all of the provisions of §§15-09(a) through (f) inclusive, shall be complied with, except that it will not be required that the fire-retarding of the walls and ceilings of cooking spaces be complied with.
Before the installation of sprinkler heads is begun an application shall be filed with and approved by the Department of Buildings.
Sprinkler heads shall be of a type and manufacture approved by the Department of Buildings or previously approved by the Board of Standards and Appeals or by the Underwriters Laboratories Limited, and shall have fusible struts constructed to fuse at a temperature not higher than two hundred twelve degrees (212°) Fahrenheit.
Every sprinkler head shall bear the year of manufacture clearly on its surface. No sprinkler head may be installed after December 31st of the year following the year of manufacture.
There shall be provided at least one (1) sprinkler head for every fifty-nine (59) square feet or fraction thereof of the floor area of the cooking space.
Sprinkler heads shall be connected with the water supply of the building through a pipe of at least one-half (1/2) inch inside diameter.
Where practicable, sprinkler heads shall be located in an upright position on top the sprinkler piping.
There shall be kept available on the premises at all times a sufficient supply of extra sprinkler heads and also a sprinkler wrench for use to replace promptly any fused or damaged sprinkler heads.
Any head which has opened or has been damaged shall be replaced immediately with a good sprinkler head.
Painting or kalsomining of sprinkler heads is prohibited.

(f)*Cooking spaces constructed after July 1, 1949*. Application and plans must be filed with and approved by the Department before any work is started in connection with the construction of any cooking space after July 1, 1949.

§15-10 Fire-Escapes, Fire Stairs and Fire Towers.

(a) *Intent*. These rules have been approved by the Department to supplement the provisions of §53 of the Multiple Dwelling Law in relation to fire-escapes, fire-stairs, etc..
Where fire-escapes serve as a means of exit from other than multiple dwellings, such fire-escapes shall comply with the laws governing such occupancy.
The voluntary erection of fire-escapes on private residence buildings or business and residence buildings shall be in conformity with these rules and regulations unless otherwise directed by the Borough Superintendent of the Department of Buildings.
It is the intent of these rules to cover only general conditions and they are not designed to cover specific or special cases. When such may occur the owner is required to consult the Department of Buildings and receive instructions before starting of work.
(1) *Fire-escapes on multiple dwellings requiring new certificate of occupancy*. Except as provided in §15-10(g)(2) re lodging houses, double-rung ladder type fire-escapes will not be accepted when a new Certificate of Occupancy is required.
(2) *Alterations for increased occupancy*. Where an alteration is made increasing occupancy on any story and a fire-escape is required such fire-escape shall conform to the provisions of

§53 of the Multiple Dwelling Law and to the applicable provisions of these rules.

(b) *General provisions.*

(1) *Caution.* No fire-escapes shall be removed from any apartment without due precaution against leaving occupants without fire-escape protection as required by subdivision 9 of §53 of the Multiple Dwelling Law.

(2) *Entrance story, etc.-second means of egress.* Where the distance to safe landing, from the window sill of any apartment on any story, including the entrance story, is more than twelve feet (12'-0"), a balcony and sliding drop-ladder or other approved second means of egress shall be provided for such apartment. Safer egress to street or other safe place shall be provided from the termination of such means of egress.

(3) *Application blanks and plans.* Before the erection of new fire-escapes or alteration of existing fire-escapes upon any multiple dwelling, application must be filed with and approved by the Department of Buildings.

(4) *Projections beyond the building lin*e. Every part of fire-escapes or balconies erected on the fronts of multiple dwellings shall be at least ten feet (10') above the sidewalk when such fire-escapes or balconies project beyond the building line.

(c) *Illegal fire-escapes shall be removed.* All vertical ladder, wire, chain or cable fire-escapes if required as a means of egress shall be removed and replaced with a legal means of egress.

(d) *Acceptable existing means of egress on existing multiple dwellings.* Except as provided in §15-10(c), in any existing multiple dwelling any existing means of egress which was lawfully permitted prior to the time the Multiple Dwelling Law became effective may be continued as a legal means of egress as hereinafter enumerated.

If located on the front or rear wall of the building and properly connected with stairs with proper openings.

If located in an outer court at a point distant not more than thirty feet (30'-0") from the outer end of such court and provided such court is not less than five feet (5'-0") in width from wall to wall at any point between such fire-escape and the outer end of said court.

If located in an inner court whose least horizontal dimension is not less than fifteen feet (15'-0") measured from wall to wall.

If a party-wall balcony on the front or rear wall of the building and there are no doors or openings in the walls between the two buildings other than windows in fireproof air shafts.

If a party-balcony located in an outer court not more than fifteen feet (15'-0") in length measured from the outer end of such court to the innermost point thereof, and not less than five feet (5'-0") in width from wall to wall at any point between the fire-escape and the outer end of said court, and provided also that there are no doors or openings in the walls between the two buildings other than windows in fireproof air-shafts.

No fire-escape, however, shall be deemed sufficient unless all the following conditions are complied with:

All fire-escapes, whether a required means of egress or not, shall be maintained in good order, repair and structurally safe.

All parts shall be of iron or stone.

Except as provided in §15-10(bb) every apartment above the ground floor in each multiple dwelling shall have direct access to a legal fire escape without passing through a public hall.

Except party-wall balconies, all balconies shall be connected to each other by means of a stair or, when permitted, by double-rung ladders.

All fire-escapes, except party-wall balconies, shall have proper drop-ladders in guides from the lowest balcony of sufficient length to reach a safe landing place beneath.

All fire-escapes not on the street shall have a safe and adequate means of egress from the yard or court to the street or to the adjoining premises.

Prompt and ready access shall be had to all fire-escapes. Except as provided in §15-10(bb), such access shall be through a living room or private hall in each apartment or suit of rooms at each story above the ground floor and shall not include the window of a stairhall, nor shall any such egress be obstructed by sinks or other kitchen fixtures, or in any other way.

No existing fire-escape shall be extended or have its location changed except with the written approval of the Department of Buildings. Where an existing apartment in a tenement house erected prior to April twelfth, nineteen hundred and one, is located entirely on a court and has no rooms opening on the street or yard, fire-escapes hereafter provided for such apartments may be located in courts under the same conditions as prescribed for existing fire-escapes in this subdivision.

When wire, chain cable or vertical ladder fire-escapes are permitted to remain on Multiple Dwellings under the provisions of subdivision 9 of §53, they shall be considered only as supplemental fire-escapes.

Such fire-escapes shall be maintained in a safe condition of repair at all times and shall be subject to the applicable requirements of all laws and to these rules in relation to maintenance of existing fire-escapes.

Before a pending violation requiring the removal of such existing fire-escapes is superseded or cancelled, an inspection shall be made in accordance with the specific requirements as set forth in the preceding paragraph.

Each of the owners of adjoining structures, commonly served by party-wall balconies serving as a required means of egress, shall maintain in good order and repair that portion of each such balcony which is on his property, and each such owner shall maintain egress normally unobstructed and unimpeded from each such balcony to and [*sic*] through his structure.

It shall be unlawful for the owner of a structure on which there is a party-wall balcony serving as a required means of egress from an adjoining structure, to remove such party-wall balcony or any portion thereof or to prevent, eliminate or obstruct egress from such party-wall balcony to and through his structure, unless and until such owner has had erected a legal fire-escape or other approved means of egress.

See also §15-10(bb).

(e) *Party-wall balconies.*

(1) *New party-wall balconies.* The erection of new party-wall balconies shall be subject to the discretion and jurisdiction of the Department of Buildings, provided, however, that there shall be no doors or openings in the wall between the buildings served by such balconies other than windows in fireproof airshafts. New party-wall balconies will not be permitted on adjoining frame multiple dwellings.

(2) *Existing party-wall balconies.* Party-wall balconies existing on any multiple dwelling shall afford safe egress, be kept in

good order and repair, be constructed so as to be structurally strong and shall be maintained in conformity with all other applicable laws, rules and regulations. Such fire-escapes are acceptable on occupied multiple dwellings.

(f) *Party-wall fire-escapes.* The Department of Buildings may consent to the erection of party-wall fire-escapes on adjoining multiple dwellings, to which the occupants have safe, unobstructed access in common, when such party-wall fire-escapes are constructed and maintained in accordance with the law and these rules.

(1) Any existing party-wall fire-escape (stairways) connection with and used in common by a multiple dwelling and a non-multiple dwelling is acceptable when such fire-escape is maintained in good order and repair and affords safe egress.

(g) *Double-rung ladders.*

(1) Double-rung ladders will not be permitted on new fire-escapes.

(2) Any fire-escape existing prior to the enactment of the Multiple Dwelling Law on any multiple dwelling that does not require a certificate of occupancy resulting from an alteration, if structurally sound and in good condition and provided with existing ladders inclined at an angle not exceeding eighty (80) degrees and equipped with double-rung steps and which affords safe egress, shall be deemed to be a legal fire-escape.

When a Certification of Occupancy is requested or required in connection with a lodging house which is equipped with a double-rung ladder fire-escape and such fire-escape is in good repair and adequate, except as to type, and only minor violations exist the correction of which will make the premises conform to all other law requirements, the existing double-rung ladder fire-escape may be accepted.

(3) Except as provided in §15-10(g)(2) re lodging houses, double-rung ladders are not acceptable when a new Certificate of Occupancy is to be issued.

(h) *Alteration of existing two-balcony fire-escapes on existing multiple dwellings.* When a building is not more than three (3) stories in height and provided with a balcony on each of the second and third stories, with connecting vertical ladders, and balconies not less than two feet five inches (2'-5") in width and of adequate length, the Department of Buildings may permit the removal of vertical ladders and replacing of the said ladders with regulation sixty (60) degree connecting stairs. Standards shall be one-half inch (1/2") round or square and height of rail at least two feet nine inches (2'-9") .

The stairs shall be not less than seventeen inches (17") wide with a passageway between string and wall or string and top rail of not less than fourteen inches (14"). In lieu of such passageway, the Department of Buildings will permit a drop-ladder to be installed and placed at each end of the lowest balcony in those cases where it is impractical to provide a passageway of such minimum width.

New brackets shall be provided where necessary.

The gateway shall be cut in the front rail with a drop-ladder and guides from second (2nd) story to safe landing. Where fire-escapes are located at rear of building a gooseneck ladder shall be provided. The gooseneck ladder may be placed at an angle from the top floor balcony to the roof. When placed at an angle a minimum space of twenty-four inches (24") shall be maintained between the strings and front top rail and a minimum space of fourteen inches (14") between the strings and the front bottom rail. There shall be a space of at least twenty-four inches (24") between the string of the gooseneck ladder and the frame of the window.

Conditions may be found where this modification will not exactly apply. When such a condition is found it should be brought to the attention of the Department of Buildings for decision.

When fire-escapes are at the front no gooseneck ladder shall be required.

When access to such existing two-balcony fire-escape is solely by means of a window in a bathroom, the doors of such bathrooms shall be glazed with glass other than wire glass and all key or cylinder locks shall be removed from doors. In such bathrooms there shall be no fixtures located in front of the window opening to fire-escape.

Such altered two-balcony fire-escape shall conform to all other requirements of law and these rules and regulations.

(i)*Accessibility of fire-escapes from apartments, rooms, kitchenettes and other spaces.* Prompt and ready access shall be had to all fire-escapes and, except as provided in §15-10(bb), such access shall be through a living room, kitchenette or private hall in each apartment or suite of rooms at each story above the ground floor.

Access to fire-escapes shall not include the window of a stairhall, nor shall any such egress be obstructed by sinks or other kitchen fixtures, or in any other way.

A clear space of at least twenty-one inches (21") must be maintained as a passageway between any fixtures and the side of an opening leading to fire escapes.

In any apartment which is occupied by a "family" as defined in §4(5) Multiple Dwelling Law, and in which one or more living rooms are rented to boarders or [*sic*] lodgers, every such room shall be directly accessible to a fire-escape without passing through a public hall, and for separately occupied living rooms access to fire-escapes shall be direct from such rooms without passing through a public hall or any other separately occupied room, except as may be permitted in §§66, 67 and 248 of the Multiple Dwelling Law.

(1) *Egress from apartments used for "Single Room Occupancy".* No room in any apartment shall be so occupied for "single room occupancy" unless each room therein shall have free and unobstructed access to each required means of egress from the dwelling without passing through any sleeping room, bathroom or water-closet compartment.

In apartments used for "single room occupancy" there shall be access to a second means of egress within the apartment without passing through any public stair or public hall. On and after July 1, 1957, every tenement used or occupied for single room occupancy in whole or part under the provisions of §248, Multiple Dwelling Law, and which does not have at least two means of egress accessible to each apartment and extending from the ground story to the roof, shall be provided with at least two means of egress, or, in lieu of such egress, every stair hall or public hall, and every hall or passage within an apartment, shall be equipped on each story with one or more automatic sprinkler heads approved by the department. Elevator shafts in such tenements shall be completely enclosed with fireproof or other incombustible material and the doors to such shafts shall be fireproof or shall be covered on all sides with

incombustible material.
In apartments used for "single room occupancy" where access to a required means of egress is provided through a room such access to such room shall be through a clear opening at least thirty inches (30") wide extending from floor to ceiling and such opening shall not be equipped with any door frame, or with any device by means of which the opening may be closed, concealed or obstructed.

(j) *Window bars, gates, etc.* No iron bars, gates or other obstructing devices will be permitted on any window giving access to fire-escapes or where such window provides a secondary means of egress in case of fire on any story, including the ground floor, basement, cellar, etc.
Windows on grade level at sidewalk, yard or court, or at roof level of an adjoining building, may have bars, but at least, one window in any apartment or suite of rooms shall be without bars or obstructions of any kind in order to afford a second means of egress and such window shall conform to the provisions of §15-10(k).

(k) *Windows and doors to fire-escapes.* The window or door giving access to fire-escapes shall not be less than two feet (2') in width and the sill of the window shall not be more than three feet (3') above the floor. Window openings shall be not less than two feet six inches (2'-6") high in the clear.
(1) *Steel casement sash.* Steel casement sash opening outward onto any fire-escape balcony three feet six inches (3'-6") in width will be permitted, provided such sash is equipped with approved extension hinges so that, when opened, the sash will be flat against the wall, and further provided that there will be no adjusters on the sash as part of its equipment. Passageway of fourteen inches (14") clear width is required to be maintained between the sash or hinges and any portion of the fire-escape when the sash lies flat against the wall.
When casement sash is set at right angle to the fire-escape stairway a clear radial width of twenty inches (20") must be provided.
(2) *Wire screens and storm windows.* Wire screens are permitted on a door or window giving access to a fire-escape. Such screens may be of the rolling type, casement or of a type that slides vertically or horizontally in sections, providing that there shall be a clear unobstructed space two feet (2') in width and two feet six inches (2'-6") in height when the screens are opened and further provided that no such screen shall be subdivided with muntins or other dividing or separating bars into spaces less than two feet (2') in width by two feet six inches (2'-6") in height.
Storm sash and storm doors are permitted on openings giving access to fire-escapes provided they are arranged so as to be easily and readily opened from the inside and do not obstruct or interfere with safe egress.
(l) *Egress from fire-escape balconies not to be obstructed.* Egress from fire-escape balconies must not be obstructed by signs, fixed awnings or any other obstruction.

(m) *Extension roofs used as means of egress or directly under fire-escape balcony.*
(1) *Hereafter erected extension roofs.* Where the roof of an extension hereafter erected is to be used as a means of egress from a fire-escape, or where a fire-escape balcony is located directly above said roof, such roof shall be of fireproof construction.
(2) *Existing extension roofs.* Except in converted dwellings where sprinklers may be installed, in every multiple dwelling where a fire-escape balcony is situated over and not more than eight feet (8') above a non-fireproof roof, or where a non-fireproof roof of an extension is to be used as egress from fire-escapes, the entire ceiling of said extension must be fire-retarded with metal lath and cement or gypsum mortar in the manner prescribed in §15-07(b)(1) and (i)(1) of these rules and regulations, or with one-half inch (1/2") approved plaster boards lined with No. 26 U.S. gage [*sic*] stamped metal. In buildings requiring the issuance of a Certificate of Occupancy as a result of being altered structurally, the only approved method shall be with cement or [*sic*] gypsum mortar and metal lath weighing not less than three (3.0) pounds per square yard which shall be applied directly to the beams or other structural members.
Where the roof of an existing extension is used as fire egress, a balcony shall be provided at the level of the roof and, if the distance between the said balcony and a safe landing is more than sixteen feet (16'-0"), a landing platform must be provided not more than ten feet (10'-0") from said safe landing and this landing platform and the balcony on the roof level must be connected by a regulation stairway. From the landing platform a drop-ladder in guides must be provided so as to reach the safe landing.
A balcony and drop-ladder in guides as per §15-10(r)(11) shall be provided for every two fire-escape stacks or fraction thereof using an extension roof for landing and fire egress.
(3) *Skylights on extensions.* Any existing skylights in said roof must be constructed of incombustible material whenever deemed necessary.
Where skylights exist or are hereafter constructed on the roof of an extension used as a means of egress from a fire-escape, they must not interfere with egress in any way and if in the line of said egress, they must be provided with a substantial guard-rail not less than three feet six inches (3'-6") high.

(n) *Egress to street required from fire-escapes located in yards and courts not extending to the street.* In an old law tenement or a converted dwelling where fire-escapes are located in a yard less than thirty feet (30'-0") in depth, or in a court which does not extend to such a yard or to the street, there shall be egress to the street by means of a fireproof [*sic*] passageway.
In such multiple dwellings, where the yard is less than thirty feet (30'-0") in depth and where the consent of owner of the adjoining premises is obtained, in lieu of providing such fireproof [*sic*] passageway, a door or gate in a lot-line fence leading from such yard or court to the yard or court of the adjoining premises may be accepted, provided, however, that such door or gate provides adequate egress and is not locked or secured in any manner except by a readily [*sic*] accessible, easy to open hook or bolt.
Where fire-escapes are located in the yard of a new law tenement or of a multiple dwelling erected after April 18, 1929, access shall be provided from the street to the yard either in a direct line or through a court as provided in paragraph c of subdivision 2 of §238 and paragraph i of subdivision 2 of Section 27, Multiple Dwelling Law.
Where fire-escapes are located in a court of a new law tenement or of a multiple dwelling erected after April 18, 1929, and such court does not extend to the street, a fireproof passageway leading directly to the street shall be provided as required by

paragraph b of subdivision 2 of §53, Multiple Dwelling Law.
All passageways required under these Rules shall be not less than seven feet (7'-0") in height and not less than three feet (3'-0") in width and shall at all times be kept clear and unobstructed. Doors and gates at the end of such passageways are prohibited, except that a door or gate equipped with an approved-type knob or panic bolt which shall be readily openable from the inside will be permitted at the building line. Doors and gates provided with keylocks or padlocks are prohibited.

(o) *Location for new fire-escapes.* No required fire-escape shall be permitted to be placed on an adjoining property without the written consent of the Department of Buildings. No fire-escape shall be erected within ten feet (10') of the termination of a duct. Fire-escapes for existing multiple dwellings shall be located as required by the department and arranged so as to provide legal egress for all rooms and apartments.
(1) *Fire-escapes in court (side yard).* Except as provided in §15-10(bb)(6) where an apartment has a street frontage and extends also to a yard, fire-escapes may be permitted to be placed in a court (side yard) if the court (side yard) is not less than seven feet (7'-0") wide. In any multiple dwelling where exterior structural conditions are such as to prevent the erection of a fire-escape on the street front or yard, new fire-escapes may be permitted to be erected in a lot-line court (side yard) providing the lot-line court (side yard) extends from street to rear yard and is not less than three feet (3'-0") in width for its full length. Fire-escapes erected in such court may be three feet (3'-0") wide when the width of such court does not permit balconies three feet four inches (3'-4") in width.
The width of stairways and passageways and other arrangement details affected by the permitted reduction in the width of balconies will be determined and furnished to contractor by the Department upon request.
(2) Where an existing apartment in a tenement erected prior to April 12, 1901, is located entirely on a court and has no rooms opening on the street or yard, fire-escapes hereafter provided for such apartments may be located in courts under the same conditions as prescribed for existing fire-escapes in §15-10(d).

(p) *Materials.* All fire-escapes hereafter constructed shall consist of outside open balconies and stairways of iron, stone, or other approved materials. Wherever the term wrought iron is used in these rules it shall be deemed to include all other especially approved metals.
Cast iron will not be permitted to enter into the construction of fire-escapes.
The use of old material in the construction of new fire-escapes is prohibited.
Bolts used in the construction or repair of fire-escapes shall be machine bolts. The use of stove bolts is prohibited.
The strength and construction of stone balconies hereafter erected forming part of the fire-escape shall be subject to the approval of the Department of Housing and Buildings.
All structural steel used in the construction of fire-escapes shall be at least one-quarter (0.25) inch in thickness.

(q) *Types of fire-escapes.* There shall be two types of fire-escapes: "Type A" and "Type B". Except for brackets and braces as hereafter described, what is applicable to one type is equally applicable to the other whether or not it is so stated specifically.
(1) *Definition of "Type A" and "Type B" fire-escapes.* A "Type A" fire-escape [*sic*] is one which has a supporting bracket at each end of the balcony or platform.

A "Type B" fire-escape is one which has brackets not more than four feet (4') apart supporting the balcony or platform.
(2) Cantilever brackets will not be accepted for new fire-escapes on existing buildings.
(3) Details of other types of structural supports for fire-escapes must be submitted to and approved by the Department before being used in the construction of fire-escapes.
(4) "Type A" fire-escapes are not permitted on frame buildings, walls or hollow masonry constructions, on walls of solid masonry less than eight inches (8") in thickness nor on hollow walls of solid masonry unless complete construction details are submitted to and approved by the Department before the construction of fire-escapes.

(r)*Balconies.* All balconies, except those erected upon frame buildings and buildings having eight inch (8") brick walls, shall be not less than three feet four inches (3'-4") in width overall [*sic*] and may project into the public highway to a distance not greater than four feet (4') beyond the building line. Balconies erected upon frame buildings and buildings having eight inch (8") brick walls shall be thirty-six inches (36") in width. Balcony railings must be not less than two feet nine inches (2'-9") high.
(1) *Passageway.* Seventeen inches (17") in width is required between the strings of stairs and the wall, or between the strings of stairs and railings, clear of all projections to a height of six feet six inches (6'-6").
Fourteen inches (14") clear width is required between the hatchway railing and the window sill.
Seventeen inches (17") in width is required between the gooseneck ladder and the hatchway on the upper balcony.
(2) *Openings.* The openings for stairways in all balconies shall be not less than twenty-one inches (21") wide, and of such length as to provide at least six feet six inches (6'-6") clear headroom on all stairways at every tread, and shall have no covers of any kind.
A round, iron guard rail, three-quarter inch (3/4") in diameter shall be provided around all hatchways on all new balconies, and also, when necessary, around hatchways on existing balconies. Such guard rails shall be at least two feet six inches (2'-6") high and shall be properly braced at intervals of three feet (3')
The brace from guard rail to the front top rail shall be so arranged to allow six feet six inches (6'-6") of headroom on the stairway.
Openings are not permitted in the floor of the lowest balcony of any new fire-escapes. Egress must be from a gateway in the front of end rail.
(3) *Top rails.* New top rails must be one and three-quarters inches by one-half inch (1 3/4" x 1/2") wrought iron or steel. Angle iron top rails will not be accepted. Separate bolt ends must be one and one-half inches by one-half inch (1 1/2" x 1/2") at connection with top rails and secured to the same by two three-eighths inch (3/8") bolts well upset.
No welded connections, other than shop welding, for top rails, will be permitted.
Top rails must go through the wall. When the wall is of brick, stone or concrete they must be anchored on the inner face thereof

by means of nuts and four-inch by four-inch by three-eighths inch (4" x 4" x 3/8") washers. Where a masonry wall is eight inches (8") in thickness the washers shall be continuous and shall extend vertically from four inches (4") below the bracket anchorage to four inches (4") above the top rail.
Bolt ends must be at least three-quarters inch (3/4") in diameter.
Top rails must be anchored in the wall at least nine inches (9") from the window or door opening.
On recess fire-escapes the top rails need not go through the wall, but must be hot leaded six inches (6") in brick or stone and at least twelve inches (12") from the outside face of the wall.
The front and return top rail, unless in one (1) piece, must be secured at the angle in the following manner: (1) with lap joint, by one-half inch (1/2") rivet and a strap of same dimension as the top rail, with one (1) three-eighths inch (3/8") rivet or bolt in each end of the strap; (2) with butt joint, by a triangular plate four inches by six inches by three-eighths inch (4" x 6" x 3/8") secured to each member of the top rail by two (2) three-eighths inch (3/8") rivets or bolts.
Top rails may be spliced with iron of the same dimensions as the rails with two (2) three-eighths inch (3/8") rivets or bolts on each side of the splice, or may be overlapped not less than eight inches (8") and secured by two (2) three-eighths inch (3/8") bolts or rivets.
Where front rails are not rigid they must be braced with outside braces. Said braces must be wrought iron not less than one and three-quarters inches by one-half inch (1 3/4" x 1/2") placed on edge. The braces must be properly spaced and secured to the extended brackets and top rails by three-eighths inch (3/8") rivets or bolts. Where brackets are extended to receive outside braces the extended portion must never less than two inches by one-half inch (2" x 1/2") and secured to the bracket by two (2) three-eighths inch (3/8") rivets or bolts.
Bow braces and overhead [*sic*] braces will not be accepted.
(4) *Bottom rails*. Bottom rails must be one and one-half inches by three-eighths inch (1 1/2" x 3/8") wrought iron and front rail of same must be secured to brackets by three-eighths inch (3/8") rivets or bolts.
Return bottom rails must be leaded or cemented in the wall when the latter is of brick, or may be secured to the brackets when this is practicable.
The [*sic*] bottom front and return rails must be connected at angles by at least one (1) three-eighths inch (3/8") rivet or bolt well burred.
They may be spliced as in the [*sic*] case of top rails.
(5) *Standards*. Standards must be not less than one-half inch (1/2") round or square set vertically, riveted to the top and bottom rails, not more than six inches (6") apart on centers. Special designs must be submitted for any variation, and approved before work is begun.
(6) *Floor slats*. Floor slats must be of wrought iron one and one-half inches (1 1/2") in width and three-eighths inch (3/8") thick and placed not more than one and one-quarter inches (1 1/4") apart.
In new balconies floor slats shall not project more than six inches (6") and in old balconies not more than eighteen inches (18"), beyond the end bracket and shall not be supported by the bottom rail.
All floors must be well secured to the brackets by three-eighths inch (3/8") "U" or clamp bolts.
Floor slats may be spliced with a four inch (4") splice plate [*sic*] three-eighths inch (3/8") thick, secured by three-eighths inch (3/8") countersunk or roundhead bolts or rivets on each side of the joint.
The ends of the floor slats must not project over stairs so as to overhang the top tread more than one-half inch (1/2"). The ends of such floor slats shall not be cut or burned off so as to be jagged or uneven. The floor slats shall be in true alignment.
(7) *Battens*. Battens must be one and one-half inches by three-eighths inch (1 1/2" x 3/8") not more than three feet (3') apart, riveted to the slats by five-sixteenth inch (5/16") rivets and so spaced as to secure rigidity.
No welded connections, other than shop welding, for top rails will be permitted.
Top rails must go through the wall. When the wall is of brick, stone or concrete they must be anchored on the inner face thereof by means of nuts and four-inch by four-inch by three-eighths inch (4" x 4" x 3/8") washers. Where a masonry wall is eight inches (8") in thickness the washers shall be continuous and shall extend vertically from four inches (4") below the bracket anchorage to four inches (4") above the top rail.
Bolt ends must be at least three-quarters inch (3/4") in diameter.
Top rails must be anchored in the wall at least nine inches (9") from the window or door opening.
On recess fire-escapes the top rails need not go through the wall, but must be hot leaded six inches (6") in brick or stone and at least twelve inches (12") from the outside face of the wall.
The front and return top rail, unless in one (1) piece, must be secured at the angle in the following manner: (1) with lap joint, by one-half inch (1/2") rivet and a strap of same dimension as the top rail, with one (1) three-eighths inch (3/8") rivet or bolt in each end of the strap; (2) with butt joint, by a triangular plate four inches by six inches by three-eighths inch (4" x 6" x 3/8") secured to each member of the top rail by two (2) three-eighths inch (3/8") rivets or bolts.
Top rails may be spliced with iron of the same dimensions as the rails with two (2) three-eighths inch (3/8") rivets or bolts on each side of the splice, or may be overlapped not less than eight inches (8") and secured by two (2) three-eighths inch (3/8") bolts or rivets.
Where front rails are not rigid they must be braced with outside braces. Said braces must be wrought iron not less than one and three-quarters inches by one-half inch (1 3/4" x 1/2") placed on edge. The braces must be properly spaced and secured to the extended brackets and top rails by three-eighths inch (3/8") rivets or bolts. Where brackets are extended to receive outside braces the extended portion must never be less than two inches by one-half inch (2" x 1/2") and secured to the bracket by two (2) three-eighths inch (3/8") rivets or bolts.
Bow braces and overhead [*sic*] braces will not be accepted.
(8) *Landings*. Landings at the head and foot of stairs shall be at least forty inches by twenty inches (40" x 20") except on the balcony on the top story where the gooseneck ladder is located such landing shall be not less than forty inches by thirty inches (40" x 30"). On the lowest balcony where the opening to drop-ladder is in the return rail at front of the lowest tread the landing must be at least forty inches by thirty-six inches (40" x 36").
(9) *Egress from lowest balcony*. The gateway in the rail must

be of sufficient width to permit the proper installation of the drop-ladder and guide-rods.
When the opening to the drop-ladder is in the return rail and at front of the lowest step, the landing at the foot of the stairs must be at least three feet by three feet, four inches (3' x 3'-4")[*sic*].
Top rails must be well braced at the gateway.
(10) *Distance from lowest balcony to ground*. The distance from the lowest balcony to the ground or safe landing shall be not more than sixteen feet (16'-0") except that in existing multiple dwellings where due to structural conditions, such as plate glass store fronts, etc., it is not possible to erect such lowest balcony within sixteen feet (16'-0") of the ground, the Department of Buildings may permit such balcony to be erected at a height of not more than eighteen feet (18'-0") above the ground.
(11) *Termination of fire-escapes on extension roofs*. Where fire-escape stairs or ladders rest upon a fire-proof roof, no balcony need be provided at the foot of such stairs or ladders.
Where fire-escapes terminate on the roof of an existing extension, a guide-rod drop-ladder shall be provided at the level of the roof of such extension. Where the distance from such roof to a safe landing is more than sixteen feet (16'-0") an intermediate balcony not more than ten feet (10'-0") above a safe landing shall be provided, and such intermediate balcony shall be equipped with a guide-rod and drop-ladder and connected by means of a regulation stairway and balcony at the level of the extension roof.
Balconies, where required, must be anchored and constructed in a manner satisfactory to the Department of Buildings.
The roof of every extension used for egress, or upon which fire-escapes terminate, shall be fire-proof or fire-retarded according to the provisions of §15-10(m) of these Rules and Regulations.

(s) *Brackets and braces*.

(1) *"Type A"*. All horizontal members of brackets and all cross beams shall be not less than four-inch (4") channels weighing not less seven and one-quarter (7.25) pounds to the linear foot.
The end bracket members shall enter the wall at a point not less than nine inches (9") from a door or window and shall be anchored on the inside face of the wall with an eight-inch by eight-inch by three-eighths inch (8" x 8" x 3/8") washer and a one-inch (1") bolt and nut. Where the wall is eight inches (8") in thickness the washer shall be continuous and shall extend across all brackets and cross beams. The bolt end shall be wrought iron not less than two inches by one-half inch (2" x 1/2") which shall be drawn out to form the necessary bolt end without welded connections. The bolt end shall be secured to the bracket with two (2) one-half inch (1/2") rivets. On eight-inch (8") walls the bolt end shall not be less than nine inches (9") long. On twelve-inch (12") walls the bolt end shall not be less than eleven inches (11") long. On sixteen-inch (16") walls the bolt end shall not be less than fifteen inches (15") long.
When the wall is eight inches (8") in thickness the bracket member shall enter the wall not less than seven inches (7").
When the wall is twelve inches (12") in thickness the bracket member shall enter the wall not less than eleven inches (11").
When the wall is sixteen inches (16") in thickness the bracket member shall enter the wall not less than fifteen inches (15").
The intermediate cross beams shall enter the wall not less than eight inches (8") except where they enter the wall under the window. In such case the cross beam shall enter the wall not less than four inches (4").
The member forming the hatchway opening shall be a four-inch (4") channel iron weighing not less than seven and one-quarter (7.25) pounds per foot. It shall be secured to the intermediate cross beam with a three-inch by three-inch by one-quarter inch (3" x 3" x 1/4") lug and two (2) one-half inch (1/2") rivets or bolts.
The front bottom member of the fire-escape shall be of the following size and weights:

Length of Balcony	Weight of Channels	Size of Channels
Up to 11 feet	9.0 pounds per foot	5 inches
Up to 13 feet	10.5 pounds per foot	6 inches
Up to 15 feet	12.25 pounds per foot	7 inches
Up to 17 feet	13.75 pounds per foot	8 inches

The bracket braces shall be angle iron not less than two and one-half inches by two and one-half inches by one-quarter inch (2 1/2" x 2 1/2" x 1/4"). The braces shall drop not less than twenty-four inches (24") from the top of the bracket and shall extend out to a point not less than three-quarters (3/4) of the length of the bracket.
Each member of the brace shall be secured to the bracket with two (2) one-half inch (1/2") rivets.
The drop member of the brace shall be secured to the extended member with two (2) one-half inch (1/2") rivets.
The heel of the brace shall be cut out one-half inch (1/2") to allow for the drainage of water.

Where, owing to cornices, water-tables and porticos, it is impossible to use the standard brackets, inverted brackets may be used. When inverted brackets are used they shall be constructed with an upright wall member and a diagonal member. The wall member shall be an angle iron not less than three inches by four inches by three-eighths inch (3" x 4" x 3/8") and the diagonal member shall be an angle iron not less than three inches by three inches by three-eighths inch (3" x 4" x 3/8").
Each member shall be secured to the bracket with two (2) one-half inch (1/2") rivets.
The wall members shall be secured to the wall with (2) one-inch (1") bolts which shall pass through the wall and be anchored on the inside face of the wall with a washer four inches by three-eighths inch (4" x 3/8") which shall extend across the two (2) bolts. A one-inch (1") nut shall secure the washer to the bolt. The bolts shall be placed sixteen inches (16") apart on centers. The four-inch (4") member of the wall brace shall bear against the wall and shall extend from the bracket to and above the top return rail of the balcony. The top return rail of the balcony shall be secured to the wall member of the brace with two (2) one-inch (1") rivets or nuts and bolts.
When inverted braces are used the bracket member shall enter the wall not less than four inches (4")
All other portions of "Type A" fire-escapes, except roof balconies, shall be constructed and erected as specified for the construction and erection of "Type B" fire-escapes.
(2) *"Type B"*. The horizontal members of brackets shall consist of a one-piece wrought iron bar two inches by one-half inch

(2" x 1/2") set so that the two inch (2") dimension is vertical.
Brackets shall be not more than four feet (4'-0") apart.
Welded brackets will not be accepted.
Angle iron brackets will not be accepted.
The top member of the bracket must be drawn out to form the necessary bolt end without welded connection.
Brackets shall be placed not less than eight inches (8") nor more than sixteen inches (16") below the window sill, except by special permission from this Department.
The top member of the bracket must go through the wall, and when the wall is of brick, must be anchored as specified for brackets in new buildings.
Brackets on buildings in course of erection must be built into the wall. They must be carried through the wall and turned down three inches (3") or the top member must be drawn out so as to form a bolt end one inch (1") in diameter and provided with nuts and with washers four inches by six inches (4" x 6") and three-eighths inch (3/8") in thickness, or where brackets on existing buildings or buildings in the course of erection pass through the walls under window or door openings, such brackets shall be anchored on the inside face of the wall with a four-inch by three-eighths inch (4" x 3/8") plate extending across the opening and bearing nine inches (9") on the inner face of each pier. In such case an additional one-half inch (1/2") bolt passing through wall and anchored to plate with one-half inch (1/2") nut shall be provided. If wall is recessed said bar must be shaped so as to bear on inner face of recessed wall and the ends of said bar to bear nine inches (9") on inner face of each pier. In addition a four-inch (4") steel channel stiffener must be provided to extend across the entire recessed portion. Blocking the recessed portion will not be permitted.
Where walls are eight inches (8") in thickness the four-inch by three-eighths inch (4" x 3/8") plate must extend across and take in all brackets.
Special designs must be submitted for fire-escape framing other than standard and for masonry openings not included in above schedule.
Horizontal members of brackets must be braced with one-inch (1") square braces and shall rest on a shoulder. The braces shall be secured to the horizontal member with a rivet one-half inch (1/2") in diameter, at a point two-thirds (2/3) [*sic*] of the length of the horizontal member from the wall. The heel of the brace must be secured to the top member by a rivet of the same size.
The brace when entering the wall must be hot leaded in brick or stone three inches (3") and have a proper bearing on the face of the wall for at least eight inches (8").
If wedges are used to obtain full bearing against the wall, they must be of iron and well secured to the brace and must fill in solidly the space between brace and wall.
Anchorage in or bracing in terra cotta is not permitted.
Braces must drop at least one-third (1/3) of the length of the long brackets and must drop not less than eight inches (8") for short brackets.
Where a bracket is to receive additional weight on account of suspension rod for lower balconies, said bracket must be reinforced by an additional one-inch (1") square brace running from the end of the bracket parallel to the regulation brace.
Where it is impossible to brace the brackets in the manner described above, angle iron and tie rod supports must be used.

(3) *Anchorages for mullion windows, both "Type A" and "Type B".*

Masonry Span	Brackets	Anchorage Member
5'-0"	3'-6" long	6" channel 10.5 pounds or 6" x 4" x $^{9}/_{16}$" angle
6'-0"	3'-6" long	7" channel 9.8 pounds or 6" x 4" x $^{11}/_{16}$" angle
7'-0"	3'-6" long	8" channel 11.5 pounds or 7" channel 12.25 pounds
8'-0"	3'-6" long	8" channel 11.5 pounds
9'-0"	3'-6" long	8" channel 13.75 pounds
5'-0"	4'-0" long	8" channel 11.5 pounds or 6" x 4" x $^{3}/_{4}$" angle
6'-0"	4'-0" long	8" channel 11.5 pounds
7'-0"	4'-0" long	8" channel 13.75 pounds
8'-0"	4'-0" long	8" channel 16.25 pounds
9'-0"	4'-0" long	8" channel 21.25 pounds

Notes:
1-Working stresses taken at 16,000 pounds per square inch.
2- Load taken at 100 pounds per sq. ft. and includes live and dead loads.
3- Loads on anchorage members due to bracket reaction placed for maximum bending moment produced in member.
4- Bearing plates of suitable size must be provided for brackets taking ladder load and for anchorage members.

6" x 4 $^{9}/_{16}$" angle weighs 18.1 pounds per lin. ft.
6" x 4 $^{11}/_{16}$" angle weighs 21.8 pounds per lin. ft.
6" x 4 $^{3}/_{4}$" angle weighs 23.6 pounds per lin. ft.
Angle irons to support balconies where regulations braces cannot be used shall not be less than four inches by four inches by three-eighths inch (4" x 4" x 3/8"). Tie rods shall not be less than one inch (1") in diameter and shall be anchored through the wall in the same manner as brackets.
The angle iron support in such cases shall be set so that the tie rods will pull toward the heaviest part of the webs.
When it becomes necessary to shift a bracket from one location to another in order to carry the stairs, a new regulation two inch by one-half inch (2" x 1/2") bracket shall be installed.
No welded brackets, corroded brackets or brackets set flat with cast iron under-bracing will be accepted. Such brackets shall be replaced, whenever found, by a two-inch by one-half inch (2" x 1/2") regulation bracket. However, when a two inch by one-half inch (2" x 1/2") bar bracket with cast iron under-bracing is found, said bracket may be permitted to remain if proper one inch (1") square under-bracing is provided.

(t)*Stairways.* All stairways shall be placed at an angle of not more than sixty (60) degrees with flat open steps not less than six inches (6") in width and twenty inches (20") in length and with a rise of not more than nine inches (9").
(1) *Treads*. Treads of such construction as may be approved by the Department from time to time will be permitted.
Flat iron bars forming treads must be one and one-half inches by three-eighths inch (1 1/2" x 3/8") and spaced not more than

three-quarters of an inch (3/4") apart.
Bars forming treads must be secured to supporting angle irons by three-eighths inch (3/8") rivets and these angle irons must be fastened to the strings by two (2) three-eighths inch (3/8") rivets or bolts, well burred. Galvanized angle irons one and one-half inches by one and one-half inches by one-quarter inch (1 1/2" x 1 1/2" x 1/4") will be accepted but if not galvanized, said angle irons shall be one and one-half inches by one and one-half inches by three-eighths inch (1 1/2" x 1 1/2" x 3/8"). In all cases the vertical legs of the angle irons must be set tightly against the strings so that there will be no intervening spaces.
All treads must be set level and must not overhang so as to interfere with foot room on the tread below.
(2) *Patented treads*. Patented treads approved by the Department of Buildings or previously approved by the Board of Standards and Appeals for new installations will be accepted by the Department of Buildings as legal for use in buildings under its jurisdiction. Five samples of approved treads to be furnished to the Department of Buildings (one delivered to each borough) as a permanent record.
(3) *Strings*. Where the strings of the stairs are adjacent to the front rails the strings must be securely fastened to the top rails. Strings must be braced by round bars three-quarters inch (3/4") in thickness, properly hot-leaded or secured by four inches by three-eighths inch (4" x 3/8") expansion bolts in brick or stone wall at height of not less than six feet six inches (6'- 6") [*sic*] in the clear above the floor of the balcony. Strings of stairways shall be four inches by three-eighths inch (4" x 3/8") wrought iron and shall rest on a bracket at the bottom and be bolted to a bracket at the top.
Welded strings, other than shop welded, will not be accepted.
(4) *Hand rails*. Hand rails must be of wrought iron, three-quarters inch (3/4") round or one and one-half inches by three-eighths inch (1 1/2" x 3/8") bar, well braced with intermediate braces not more than five feet (5'-0") apart, and of the same size and material as the hand rail, and secured to the strings with two (2) three-eighths inch (3/8") rivets at each end and at each brace; or handrails may be secured to the bottom rail of the upper balcony and top rail of the lower balcony by two (2) three-eighths inch (3/8") rivets at each end.
On all fire-escapes hereafter erected double hand rails must be provided for all stairways.

(u) *Drop-ladder*. A drop-ladder shall be provided from the lowest balcony and be of sufficient length to reach a safe landing place beneath. The drop-ladder shall be fifteen inches (15") in width, shall be placed in guides and shall be not more than sixteen feet (16'-0") in length.
Except in multiple dwellings hereafter erected or converted, where the distance from the lowest balcony to a safe landing place is more than sixteen feet (16'-0") but because of structural conditions, such as plate glass store fronts, etc., a balcony is not possible, the department may accept a drop-ladder in guides, if the distance from the floor of the lowest balcony to a safe landing place is not more than eighteen feet (18'-0")
No drop-ladder is required where the distance from the lowest balcony to a safe landing place does not exceed five feet (5'-0").
No drop-ladder will be permitted to land or terminate on a stoop or any part thereof unless the written approval of the Department of Buildings is obtained.
(1) *Guides*. All drop-ladders shall have guides provided with stops so that the ladders cannot be raised above the same. The [*sic*] drop-ladder must be suspended from a point directly over the opening in the rail of the balcony and arranged to slide in the guides so as to drop in position for use. All [*sic*] drop-ladders shall be provided with a shoe at the bottom.
The guides shall be constructed of one and one-half inches by one and [*sic*] one-half inches by one-quarter inch (1 1/2" x 1 1/2" x 1/4") angle iron, and shall be not less than twenty-one inches (21") apart.
(2) *Strings*. Strings of drop-ladders must be one and one-half inches by three-eighths inch (1 1/2" x 3/8") bar. No welded drop-ladders will be accepted unless shop welded.
(3) *Rungs*. The rungs must be five-eighths inch (5/8") in thickness, not over twelve inches (12") apart [*sic*] and must be riveted to the strings.

(v) *Gooseneck ladder*. The top balcony of every fire-escape shall be provided with a stair or with a gooseneck ladder leading from said balcony to and above the roof, except that no such stairs or gooseneck ladders will be required in the following locations or under the following conditions:
(1) On multiple dwellings with peak roofs having a pitch of more than twenty (20) degrees.
(2) Where fire-escapes are located on the fronts or in street courts of multiple dwellings facing upon the street.
Where a multiple dwelling does not face upon the street, such as a multiple dwelling located at the rear of a lot upon which there is another building, every fire-escape on such multiple dwelling shall be provided with a stair or gooseneck ladder as required above, except where the roof of such building has a pitch more than twenty (20) degrees as stated in exception (1) above.
Except as provided in exceptions (1) and (2) above, every fire-escape on every hereafter erected or converted multiple dwelling, and every new fire-escape hereafter provided on every existing multiple dwelling shall be provided with a regulation stairway from the top balcony to the roof when such buildings exceed four (4) stories in height. In such multiple dwellings exceeding four (4) stories in height when due to special structural conditions which would not permit the erection of a stair from the top balcony to the roof or where the height from the top balcony to the roof may [*sic*] be such as to make the installation of a stair impractical, the Department of Buildings may accept a gooseneck ladder in lieu of a regulation stairway.
The top balcony of a fire-escape on every multiple dwelling not exceeding four (4) stories in height may be equipped with a gooseneck ladder.

(i) *Construction and location of gooseneck ladders*. The gooseneck ladder shall be fifteen inches (15") wide and shall be so located that it will not obstruct egress from the apartment or apartments on the top floor. The effective opening between the side of any window and the string of gooseneck ladder shall be not less than twenty-four inches (24")
The gooseneck ladder must be fourteen inches (14") from the front rail on existing balconies and twenty-one inches (21") on balconies hereafter erected.

(ii) *Strings*. The gooseneck ladder must be constructed with one piece of [*sic*] strings [*sic*] two inch by one-half inch (2" x 1/2") wrought iron.

Strings must be directly secured to the brackets or secured to a two inch by one-half inch (2" x 1/2") bar bearing on two (2) brackets and well secured to strings and brackets by three-eighths inch (3/8") bolts or rivets.
Strings must be spread at the parapet wall or roof to give a passageway of eighteen inches (18")
Strings must be tied through the wall by braces going through the parapet immediately above the roof, or, in the absence of the parapet wall, the said braces must go through the wall immediately below the ceiling of the top floor and be secured by three-quarters inch (3/4") bolts and four inches by four inches by three-eighths inch (4" x 4" x 3/8") washers.
The gooseneck ladder strings must extend thirty inches (30") above the roof level. Where there is a parapet, a gateway at the roof level shall be provided.
The strings of the gooseneck ladder must be secured to and braced at the roof.
(iii) *Rungs*. Rungs shall be of wrought iron five-eighths inch (5/8") thick, spaced not more than twelve inches (12") apart and shall be riveted through the strings.
The top rung of all gooseneck ladders shall be level with the roof.

(w) *Painting*. Section 53, Multiple Dwelling Law, required new fire-escapes to have two (2) coats of paint. The Department of Buildings will require these two (2) coats to be applied on contrasting colors, the first coat at the shop before erection, and the second coat applied after erection.
Existing fire-escapes shall be repainted whenever deemed necessary.

(x) *Exceptions*. Any deviations or exceptions from these rules other than those specifically mentioned herein shall be submitted to the Department of Buildings for approval. Consent and approval shall be in written form and bear the signature of the commissioner, deputy commissioner, superintendent or the person designated to sign such consent by the commissioner, deputy commissioner or superintendent.

(y) *Fire-escapes on frame buildings*. Fire-escapes shall be constructed as for brick or stone buildings with the following exceptions, and except also that balconies three feet (3'-0") wide will be acceptable to the department.
(1) *Brackets*. Horizontal members of brackets must be one and three-quarters inches by one-half inch (1 3/4" x 1/2") wrought iron set on edge; one inch (1") bolt end through a four inches by three-eighths inch (4" x 3/8") iron plate, long enough to take in all brackets, secured to and bearing directly on the inside of the studs. Spaces between the studs behind such plates shall be filled in solidly with timber secured to the studs.
The heel of bracket braces must rest against one and three-quarter inches by one and three-quarter inches by one-quarter inch [*sic*] high (1 3/4" x 1 3/4" x 1/4") angle iron extended across and well secured to studs.
(2) *Top rails*. Top rails shall be anchored by three-quarters inch (3/4") [*sic*] bolt ends, through a four inch by three-eighths inch (4" x 3/8") wrought iron plate spanning at least two (2) studs. Space behind plate and between studs shall be blocked solidly.
(3) *Bottom rails*. Bottom rails shall be secured to the siding in a substantial manner with two (2) one and one-quarter inch (1 1/4") No.14 wood screws, or may be secured to the brackets where practicable.
(4) *Stairways*. Stair braces shall be secured to the wall of the building by two (2) No. 14 wood screws.

(z) *Outside fireproof stairs*. Outside fireproof stairs shall be constructed according to approved plans and applications of the Department of Buildings. Such regulations that [*sic*] as govern the measurements of inside stairs shall be applied to outside fireproof stairways except that in multiple dwellings not exceeding three (3) stories and basement in height, fireproof stairway leading from a front porch roof which is fireproof to the fireproof floor of an unenclosed porch will be deemed an outside fireproof stairways and such stairways may be of the same width as the ordinary fire-escape stairs. Area covered by fireproof outside stairs must not encroach upon the minimum dimensions of yard and courts.
(aa) *Fire towers*. Fire towers shall be constructed according to approved plans and applications filed with the Department of Buildings.
(bb) *Egress*. Hotels and certain other class A and class B dwellings which are subject to the provisions of §67, Multiple Dwelling Law [*sic*].

(1) *Exceptions*. Any such multiple dwelling, altered or erected after April fifth, nineteen hundred forty-four, and which is required to conform to the provisions of articles one, two, three, four, five, eight, nine and eleven of Multiple Dwelling Law, shall not be required to conform to the provisions of §15-10(bb)(1)(i), (2), (3) and (4).
(i) Except in fireproof class A multiple dwellings erected under plans filed after January first, nineteen hundred twenty-five, and which were completed before December thirty-one, nineteen hundred thirty-three, and except as otherwise provided in paragraph (4) of subdivision (bb) of this section, in every such dwelling three (3) or more stories in height there shall be from each story at least two (2) independent means of unobstructed egress located remote from each other and accessible to each room, apartment or suite.

(2) *First means of egress*. The first means of egress shall be an enclosed stair extending directly to a street, or to a yard, court or passageway affording continuous, safe and unobstructed access to a street, or by an enclosed stair leading to the entrance story, which story shall have direct access to a street. The area of the dwelling immediately above the street level and commonly known as main floor, where the occupants are registered and the usual business of the dwelling is conducted, shall be considered a part of the entrance story; and a required stair terminating at such main floor or its mezzanine shall be deemed to terminate at the entrance story. An elevator or unenclosed escalator shall never be accepted as a required means of egress.

(3) *Second means of egress*. The second means of egress shall be by an additional enclosed stair conforming to the provisions of §15-10(bb)(2), a fire-stair, a fire-tower or an outside fire-escape. In a non-fireproof dwelling when it is necessary to pass through a stair enclosure which may or may not be a required means of egress to reach a required means of egress, such stair enclosure and that part of the public hall or corridor leading thereto from a room, apartment or suite, shall be protected by one (1) or more sprinkler heads; in a fireproof dwelling only that part of the hall or corridor leading to such stair enclosure need be so protected.

(4) *Required second means of egress-impractical*. Where it is impractical in such existing dwellings to provide a second

means of egress, the department may order additional alteration to the first means of egress and shafts, stairs and other vertical openings as the department may deem necessary to safeguard the occupants of the dwelling, may require the public halls providing access to the first means of egress to be equipped on each story with one (1) or more automatic sprinkler heads, and, in non-fireproof dwellings, may also require automatic sprinkler heads in the stair which serves as the only means of egress.

(5) *Public halls and corridors providing access to fire-escapes.* Public halls and corridors providing access to fire-escapes, existing and new, are acceptable when a direct and uninterrupted line to travel to the fire-escape is provided.

Public halls and corridors providing access to fire-escapes shall be fire-retarded or shall be equipped with automatic sprinkler heads. The fire-retarding and sprinkler installation shall be in conformity with the rules and regulations of this department and as required by §67 (3) of the Multiple Dwelling Law.

All openings which provide direct access to an existing fire-escape from a public hall or corridor shall be equipped with fireproof doors and assemblies with the doors self-closing or fireproof windows glazed with clear wire glass. Access to new fire-escapes from such halls or corridors shall be by means of fireproof doors and assemblies with doors self-closing. Doors providing access to fire-escapes from public halls or corridors may be glazed with clear wire glass.

(6) *Fire-escapes-existing and new*. Existing fire-escapes which are structurally strong and in good repair, having connecting stairways set at an angle or not more than sixty-five (65) degrees, may be accepted as a secondary means of egress.

Except as otherwise required herein, new and existing fire-escapes shall be provided with a safe landing and the termination shall lead directly to a street or to a passageway which provides access to a street.

When it is impractical to provide a termination for fire-escapes as specified in these Rules, the Department may accept a termination from such fire-escapes which leads to safety.

(7) *Supplementary means of egress*. A stair, fire-stair, fire-tower, or fire-escape which is supplementary to the egress requirements of §15-10(bb)(2), (3) and (4), need not lead to the entrance story or to a street, or to a yard or a court which leads to a street, provided the means of egress therefrom is approved by the department.

Fire-escapes which are supplementary to the required second means of egress, including fire-escapes of the inclined ladder and vertical ladder types, may remain on the dwelling if maintained in good order and repair, are structurally strong and safe and are provided with safe landing and the termination thereof leads to safety in a manner satisfactory to this Department.

(8) Signs-supplementary means of egress.

Supplementary stairs, fire-stairs, fire-towers or fire-escapes which do not lead to the entrance story or to a street, or to a yard or court leading to a street, shall be clearly marked "NOT AN EXIT" in black letters at least four inches (4") high on a yellow background and at the termination of each such stair, fire-stair, fire-tower or fire-escape, there shall be a directional sign indicating the nearest means of egress leading to a street. All signs shall be constructed, located and illuminated in a manner satisfactory to the department.

(9) *Signs-general provisions*. Every means of egress shall be indicated by a sign reading "EXIT" in red letters at least eight inches (8") high on a white background, or vice versa, illuminated at all time during the day and night by a red light of at least twenty-five (25) watts or equivalent illumination. Such light shall be maintained in a keyless socket. On all stories where doors, openings or passageways giving access to any means of egress are not visible from all portions of such stories, directional signs shall be maintained in conspicuous locations, indicating in red on a white background, or vice versa, the direction of travel to the nearest means of egress. At least one sign shall be visible from the doorway of each room or suite of rooms. Existing signs and illumination may be accepted if, in the opinion of the department, such existing signs and illumination serve the intent and purpose of this subdivision.

(10) *Stairs, fire-stairs and fire-towers*. Stairs, fire-stairs and fire-towers hereafter provided shall be constructed according to plans and applications approved by the Department of Buildings.

(cc) *Egress: lodging houses.*

(1) *Arrangement*. There shall be at least two (2) means of unobstructed egress from each lodging-house story, which shall be remote from each other. The first means of egress shall be to a street either directly or by an enclosed stair having unobstructed direct access thereto. If the story is above the entrance story, the second means of egress shall be by an outside fire-escape constructed in accordance with the provisions of section fifty-three, Multiple Dwelling Law, or by an additional enclosed stair. Such second means of egress shall be accessible without passing through the first means of egress.

(2) *Doors and windows*. All doors opening upon entrance halls, stair halls, other public halls or stairs, or elevator, dumbwaiter or other shafts, and the door assemblies, shall be fireproof with the doors made self-closing by a device approved by the department, and such doors shall not be held open by any device whatever. All openings on the course of a fire-escape shall be provided with such doors and assemblies or with fireproof windows and assemblies, with the windows self-closing and glazed with wire glass, such doors or windows and their assemblies to be acceptable to the department.

(3) *Aisles*. There shall be unobstructed aisles providing access to all required means of egress in all dormitories. Main aisles, approved as such by the department to provide adequate approaches to the required means of egress, shall be three feet (3'-0") or more in width, except that no aisles need be more than two feet six inches (2'-6") wide if it is intersected at intervals of not more than fifty feet (50'-0") by cross-over aisles at least three feet (3'-0") wide leading to other aisles or to an approved means of egress.

(4) *Signs*. Every required means of egress from the lodging-house part of the dwelling shall be indicated by a sign reading "EXIT" in red letters at least eight inches (8") high on a white background illuminated at all times during the day and night by a light at least twenty-five (25) watts or equivalent illumination. Such light shall be maintained in a keyless socket. On all lodging-house stories where doors, openings, passageways or aisles are not visible from all portions of such stories, and in other parts of the dwelling which may be used in entering or leaving the lodging-house part and in which a similar need exists, signs with easily readable letters at least eight inches (8") in

height, and continuously and sufficiently illuminated by artificial light at all times when the natural light is not sufficient to make them easily readable, shall be maintained on conspicuous locations, indicating the direction of travel to the nearest means of egress. At least one (1) such sign shall be easily visible from the doorway of each cubicle.

(5) *Roof egress* . Access from the public hall at the top story to the roof shall be provided by means of a bulkhead or a scuttle acceptable to the department. Every such scuttle and the stair or ladder leading thereto shall be located within the stair enclosure.

(6) *Persons accommodated*. The number of persons accommodated on any story in a lodging house shall not be greater than the sum of the following components:

(i) Twenty-two (22) persons for each full multiple of twenty-two inches (22") in the smallest clear width of each means of egress approved by the department, other than a fire-escape.

(ii) Twenty (20) [*sic*] persons for each lawful fire-escape accessible from such story if it is above the entrance story.

(7) In view of the fact that §66, Subdivision 3 (formerly §13, subdivision m), Multiple Dwelling Law, required lodging houses to be sprinkled throughout, including the public halls, the department will accept existing double-rung ladder type fire-escapes on the condition that such fire-escapes are maintained in a good state of repair.

(dd) *Ladders leading to roof scuttles.* Ladders to roof scuttles as required under the provisions of §§187 and 233 of the Multiple Dwelling Law, shall be of incombustible material, not less than fifteen inches (15") wide, with strings not less than one and one-half inches by three-eighths inch (1 1/2" x 3/8"), with five-eighths inch (5/8") rungs not more than twelve inches (12") apart. Strings of such ladders shall be secured at top and bottom and ladder must be so arranged as to permit sufficient toe hold.

CHAPTER 16 INSPECTION OF EXISTING STRUCTURES DURING CONSTRUCTION OPERATIONS

§16-01 Controlled Inspection of the Stability and Integrity of Existing Structures During Construction Operations

(a)(1) All alterations to existing structures in which loads are transferred from one system of structural elements to another such as in the installation of columns or girders to replace existing bearing walls, the creation of openings or slots in existing bearing walls, girders or floors, or where the stability or integrity of a structural system is to be temporarily diminished, shall be conducted under controlled inspection.

(2) The Department of Buildings will not approve any plans or amendments thereto where work, as described in §16-01(a)(1), is to be performed unless a registered architect or professional engineer (hereinafter referred to as "controlled inspection architect or engineer") retained by the contractor or owner and approved by the registered architect or professional engineer seeking approval of such plans submits to the Department a Technical Report: Statement of Responsibility ("TR-1") or any similar document which the Department may use in the future whereby the controlled inspection architect or engineer assumes responsibility for the controlled inspection of the existing structure during construction operations to determine its stability and integrity.

(b)(1) The details of shoring, bracing or other construction required for such work and the phasing, staging, and sequence of such operation shall be:

(i) Shown on the structural plans that are submitted to and approved by the Department or,

(ii) Prepared in the form of shop or detail drawings by a registered architect or professional engineer authorized, retained, or hire by the owner, contractor, or sub-contractor, and reviewed by the registered architect or professional engineer who prepared the structural plans.

(c) The controlled inspection architect or engineer shall retain a copy of the documents described in § 16-01(b) in his or her office and shall provide a copy to the contractor and/or owner to be kept at the construction site.

(d) The controlled inspection architect or engineer shall determine the frequency of inspections needed and whether he or she should inspect the site personally or send a person under his or her direct supervision. At a minimum, the site must be inspected twice, once at a pre-construction meeting with the contractor and once during construction operations.

(e)(1) The controlled inspection architect or engineer, for each job which requires the submission of a TR-1 pursuant to §16-01(a)(2), shall maintain a log in his or her office which includes the following information:

(i) address of the premises, job number, contractor name and address, and

(ii) date and time of each inspection including

(A) names of personnel who inspected the site, and

(B) any significant observations or instructions given relating to any of the following:

((a)) deviations from the documents described in §16-01(b);

((b)) anticipated field conditions;

((c)) proper execution of the work;

((d)) good engineering practice;

((e)) safe job-site conditions;

((f)) precautions taken to maintain safe conditions if work is stopped for any reason.

(iii) the date of and participants in any conversations with the controlled inspection architect or engineer occurring off-site and relating to any significant observations or instructions specified in §16-01 (e)(1)(ii)(B)((a)) through ((f)).

(f) he controlled inspection architect or engineer shall report unsafe conditions to the Department of Buildings and/or any other affected parties or agencies.

(g) Upon request of the Department, the controlled inspection architect or engineer shall make available for review by the Department documents described in §16-01(b) and the log described in §16-01(e).

(h) *Exemption of Frame Structures.* Frame structures shall be exempt from these rules and regulations except for the alteration of arches, rigid frames, trusses and the creation of openings exceeding 10 feet in length in bearing walls.

CHAPTER 17 TESTING LABORATORIES AND TESTING SERVICES

§17-01 Acceptance of Testing Laboratories and Testing Services

(a) Applications for acceptance as a testing service or

testing laboratory shall be submitted to the Commissioner of Buildings on forms provided by the Department.

(b) Each laboratory shall have in responsible charge a Director who shall be qualified by education, experience, or other accreditation acceptable to the Commissioner for the scope of testing performed, who shall personally supervise the testing of materials or service equipment for acceptance by the Department of Buildings.

(c) All technicians shall be qualified by education, experience, or other accreditation acceptable to the Commissioner to perform all tests they may be required to conduct under the supervision of the Director.

(d) The laboratory shall furnish to the Department of Buildings a list of all personnel who are supervising and performing tests and their qualifications.

(e) The laboratory shall furnish to the Department of Buildings a list of all the equipment used to perform tests, the manufacturer's name, when and by whom it was last calibrated.

(f)The laboratory and its equipment may be inspected periodically by the Department of Buildings or competent independent agency acceptable to the Department. If such an agency is used, a certified copy of its report shall be submitted to the Department of Buildings.

(g) The laboratory shall correct within 10 days any condition which, in the judgment of the Department of Buildings, may adversely affect the result of any test.

(h) A list of acceptable laboratories or testing services will be maintained in the office of the Commissioner of Buildings and made available to the public.

(i)The Department shall issue a serial numbered Certificate of Acceptance which shall be prominently displayed on the test premises. Such certificate shall bear the name of the lab or service, the name of the professionally qualified Director and the field or trade for which the laboratory has established its competence.

(j)All test reports shall be presented in a form acceptable to the Department and bear the name of the laboratory or service and its acceptance number, the name of the Director who supervised the test, the names of all qualified personnel who performed the test, and the names of all witnesses.

(k) The accepted laboratory or service shall prepare and submit to the Department a copy of the certificate or label bearing its name and acceptance number which it shall be required to affix to all shipments and deliveries of material or equipment when the laboratory is engaged by the manufacturer or producer to make periodic inspections or tests of the material or equipment in the course of manufacture or production.

(l)Accepted laboratories and testing services shall be permitted to advertise the fact of their acceptance by the Department of Buildings of The City of New York for the testing of materials or equipment only in the field or trade for which they have established their competence.

(m)Any violation of these rules or misrepresentation of facts in any required report or misrepresentation in advertising shall constitute cause for revocation or suspension of acceptance by the Commissioner.

CHAPTER 18 RESISTANCE TO PROGRESSIVE COLLAPSE UNDEREXTREME LOCAL LOADS

§18-01 Considerations and Evaluation.

(a) *General considerations.* Unless all members are structurally connected by joints capable of transferring 100% of the members' working capacity in tension, shear, or compression, as appropriate, without reliance on friction due to gravity loads, the layout and configuration of a building and the interaction between, or strength of, its members shall provide adequate protection against progressive collapse under abnormal load, where progressive collapse is interpreted as structural failure extending vertically over more than three stories, and horizontally over an area more than 1,000 square feet or 20 percent of the horizontal area of the building, whichever is less. These criteria shall be satisfied while the building is subjected to its own weight D plus a superimposed load of (1.0D + 0.25L), where D is computed according to Article 2 of Subchapter 9 of Chapter 1 of Title 27 of the Administrative Code and according to Reference Standard RS 9-1 of the same Code and L is computed according to Article 3 of Subchapter 9 of Chapter 1 of Title 27 of the Administrative Code and according to Reference Standard RS 9-2 of the same Code without allowance for the live load reduction permitted in Article 4 of Subchapter 9 of Chapter 1 of Title 27 of the same Code. A wind load of 0.2 W shall be assumed to act in combination with 1.0D + 0.25L, where W is computed according to Article 5 of Subchapter 9 of Chapter 1 of Title 27 of the Administrative Code and according to Reference Standard RS 9-5 of the same Code. These criteria shall be satisfied in accordance with structural analysis based on the Plastic Design or Ultimate Strength method, representing conditions at incipient failure and shall be considered as an independent check of a building designed in accordance with the usual procedures for Working Stress, Plastic Design, or Ultimate Strength design pursuant to Subchapters 9, 10, and 11 of Chapter 1 of Title 27 of the Administrative Code and all applicable Reference Standards thereto.

(b) *Methods of evaluation.*

Resistance to progressive collapse shall be determined by one of two methods:

(1) *The Alternate Path Method.*

(2) *The Specific Local Resistance Method.*

The specific local resistance method shall only be used if the alternate path method is not feasible.

(i)The Alternate Path Method.

Proof shall be provided, by analysis and/or physical simulation, that the following condition is satisfied while the building is subjected to the loads stipulated in the criteria:

(A) Should any one of the following combinations of structural elements at any one story lose its ability to carry load, there shall be no collapse of the structure more than one story above or below the element under consideration, or over a horizontal area in excess of that stipulated in the criterion:

(a) Any single "wall panel or nominal length thereof."

(b) Two adjacent "wall panels or nominal lengths thereof" forming an exterior corner to the building.

c) One or more elements forming a "nominal extent of flooring".

(d) One column.

(e) Any other one element of the structural subsystem which is judged to be vital to the building's stability.

(B) The following definitions specifically apply to Method (b)(1):

(a) The designation "wall panel or nominal length thereof" is the smaller of the following lengths as appropriate to the design in

question:
(1) The length between adjacent lateral supports.
(2) The length between a free edge and the nearest lateral support.
(3) A length equal to 2.25 times the clear height of the wall panel in those circumstances where the top and bottom attachment of the panel to the floor or roof will not fail under a force smaller than 3 kips [*sic*] per linear foot acting perpendicular to the wall in either direction.

(b) As used above, "lateral support" is considered to occur at:
(1) A substantial partition perpendicular to the wall, provided that its attachments to the wall and the partition itself are capable of resisting and transmitting without failure a horizontal force of 3 kips [*sic*] per foot of clear wall height in either direction in the plane [*sic*] of the partition. A partition may be considered substantial when that partition or a combination of such partitions, one above the floor and one below the floor and substantially in the same plane, is able to resist the following distributed force transmitted by the floor in the plane of the partition and in an upwards or downwards direction:

$$0.18\frac{S}{b}(2b—S)$$ kips [*sic*] per foot of clear span.

where b is clear span and S is the clear spacing of partitions or the clear distance from a partition to an adjacent free edge of the floor.
(*2*) A strengthened vertical portion of the wall (not exceeding 1/3 story height in the horizontal direction) which will not fail under a load of 3 kips [*sic*] per linear foot of clear wall height acting perpendicular to the plane of the wall in either direction along the interface between the strengthened wall portion and the portion of the wall that lost its load carrying capacity.

(c) The term "nominal extent of floor"denotes the following:
(1) For a floor spanning in one direction, the extent is the clear span. In the perpendicular direction the extent is to be taken as the smaller of the following:

(i) The distance between adjacent "substantial" partitions arranged in the direction of floor span.

(ii) The distance between a free edge and the nearest "substantial" partition arranged in the direction of the floor span.

(iii) In the case where partitions are not "substantial" the extent is to be taken as 2.25 times the clear span.
(2) For a floor spanning in two directions the extent shall be taken as the area bounded by the clear spans in both directions.

(ii) Specific local resistance methods.
Any single element essential to the stability of the structure, together with its structural connections, shall not fail under the loads stipulated in this criterion after being subjected to a load equivalent to that caused by a uniform static pressure of 720 psf. This pressure shall be applied in the most critical manner to the face of the element and to the face of all space dividers supported by the element or attached to it within the particular story. In those cases where the stability of the element depends upon the lateral support provided by the attached space dividers, these space dividers, or a portion of these space dividers which can provide adequate lateral support, must also satisfy requirements of this paragraph.

CHAPTER 19 MASTER PLUMBERS AND LICENSED FIRE SUPPRESSION PIPING CONTRACTORS

§ 19-01 Examination, License and Conduct of the Business of Master Plumbers and Master Fire Suppression Piping Contractors.

(a) *Applicability.* This rule shall be applicable to the examination, licensure and conduct of the businesses of master plumber and l master fire suppression piping contractor.

(b) *Applications.* Any person desiring to obtain a license from the Commissioner of Buildings to engage in the business or trade of Master Plumber or Master Fire Suppression Piping Contractor shall file an application as required by §§26-145 and 148 of the Administrative Code.

(c) *Qualifications.* Every person applying for a Master Plumber's license or Master Fire Suppression Piping Contractor's license shall pass an examination and otherwise meet the qualifications of §§26-145,146 and 148 of the Administrative Code.

*(e) *Issuance of licenses, plates and renewals - fees.*
" (e)" enacted but "(d)" probably intended.
(1) Upon the certification that an applicant has satisfactorily passed a written and a practical examination, the Commissioner of Buildings shall issue to the applicant a Master Plumber's license or Master Fire Suppression Piping Contractor's license together with a plate and seal upon the following conditions:

(i) Payment of a certificate fee pursuant to § 26-147 of the Administrative Code and

(ii) Representation by the applicant, subject to verification by the Department of Buildings, that the applicant has an established "place of business" within the City of New York, and

(iii) Payment of "licensed plumber" or "licensed fire suppression piping contractor's license" plate and seal fees as required by §26-147 of the Administrative Code, for which the Department of Buildings shall issue a plate for use at the premises designated by the applicant as his or her "place of business."

(iv) For purposes of renewal of said license, thirty to sixty calendar days prior to the license's expiration date, the applicant shall present to the Department of Buildings, in such manner as the Commissioner may require, proof that the applicant has satisfactorily completed a seven hour continuing education course approved by the Department of Buildings within two years prior to the renewal date, as required by § 26-150.1 of the Administrative Code, and such identification and other documentation supporting his or her right to renewal as the Commissioner may require. All applicants for renewal shall be of good moral character at the time of renewal. The applicant for renewal shall pay the renewal fee required by §26-147 of the Administrative Code. The license plate and seal shall be renewed every two years.
(2) Where the plate or seal has been lost, and an affidavit is submitted to this effect, a new plate or seal shall be issued by the Commissioner of Buildings upon an application and payment of a fee as required by §26-147 of the Administrative Code.

(f) *Place of business regulated.*
(1) A "place of business" shall mean the location of a plumbing establishment or fire suppression piping establishment where a Licensed Master Plumber or Licensed Master Fire Suppression Piping Contractor conducts his or her business. A plumbing or fire suppression piping establishment may be conducted by a Licensed Master Plumber or Licensed Master Fire Suppression Piping Contractor under a trade name, or by a partnership or

corporation, or other business association duly authorized to conduct a plumbing or fire suppression piping business.
(2) The "place of business" is the location of the office and shop of a plumbing or fire suppression piping establishment where the office and shop are at the same location.
3) The "place of business" where the location of the office portion of a plumbing or fire suppression piping establishment is different from the shop portion, shall be the place where the office portion is located.
(4) The "place of business" where no plumbing or fire suppression piping shop exists shall be the location of the office from where the Licensed Master Plumber or Licensed Fire Suppression Piping Contractor conducts his or her business.
(5) The office portion of a plumbing or fire suppression piping establishment which is located at a different location than the shop portion, shall be the place of calling of the plumbing or licensed fire suppression piping establishment, where business mail and telephone calls are normally received, where customers and salesmen are interviewed and where the records of the business are kept.
(6) All the limitations and restrictions for the use of "Contractor's Establishment" as required by the Zoning Resolution shall apply to the "place of business" of a plumbing or fire suppression piping establishment where the office portion and the shop portion are at the same location.
(7) All the limitations and restrictions for the use of "Office" as required by the Zoning Resolution shall apply to the office portion of a plumbing or fire suppression piping establishment where its location is different than the shop location. The shop location must comply with the limitation and restrictions for the use of "Contractor's Establishment" as required by the Zoning Resolution.
(8) All the limitations and restrictions for the use of "Office" as required by the Zoning Resolution shall apply to the office of a business where no plumbing or fire suppression piping shop exists.

(g) *Master plumber's and master fire suppression piping contractor's license plates regulated.*
(1) The use of the license by the holder thereof shall be in accordance with §§26-138 and 26-141 of the Administrative Code.
(2) Only one plate and seal shall be issued to a Licensed Master Plumber or Licensed Master Fire Suppression Piping Contractor for a "place of business" the location of which is in a district permitted by the Zoning Resolution. (See §§19-01(f)(6), (7) and (8)).
(3) A Licensed Master Plumber or Licensed Master Fire Suppression Piping Contractor conducting a business shall display prominently to the public in the window of the "place of business" designated in his or her application or on a sign securely attached to the said premises, his or her full name with words "Licensed Plumber" or "Licensed Master Fire Suppression Piping Contractor" immediately thereunder. If the business is conducted under a trade name, or by a co-partnership or corporation, such trade name or co-partnership or corporation name shall be placed immediately above the full name or names of the licensee(s) conducting the business as provided by §26-148(f) of the Administrative Code.
(4) The plate shall be kept prominently displayed to the public at the "place of business" designated in the application. The plate shall not be transferred to another address without notifying the Commissioner of Buildings and receiving his or her written approval thereof, nor shall it be transferred to or displayed in connection with any trade name, co-partnership or corporation of which the holder of such plate may become a partner or officer. Where the license is used by the holder thereof for or on behalf of a partnership, corporation or other business association as provided by §26-138 of the Administrative Code, documents shall be filed with the Commissioner of the Department of Buildings to indicate the control or voting capital stock of such partnership, corporation or other business association.
(5) A person retiring from the business or trade as a Master Plumber or Master Fire Suppression Piping Contractor or, in the event of the decease of a Master Plumber or Master Fire Suppression Piping Contractor, his or her legal representative shall immediately surrender the plate and license to the Commissioner of Buildings in accordance with §26-148(h) of the Administrative Code.
(6) A Licensed Master Plumber or Licensed Master Fire Suppression Piping Contractor to whom a plate has been issued and any corporation or partnership with which he or she is associated shall not loan, rent, sell, or transfer the privileges of such license and plate to any person for the performance of plumbing work in accordance with §26-138 of the Administrative Code.

(h) *Revocation, suspension, or cancellation of license.* The Commissioner of Buildings may at any time revoke or suspend the license of a Master Plumber or Master Fire Suppression Piping Contractor for cause as provided for by §26-151 of the Administrative Code.

§19-02 Continuing Education Requirements for Master Plumbers and Licensed Master Fire Suppression Piping Contractors.

(a) *Applicability.* This rule shall be applicable to the applicants seeking departmental approval to provide continuing education courses for master plumbers and master fire suppression piping contractors, as set forth in Administrative Code §26-150.1.

(b) The content of courses and qualifications of course providers shall be approved in accordance with the following. Course providers seeking approval by the Department of Buildings shall submit proposals in writing to the Department that include the following:
(i) Identification of the class(es) of licensees for which the proposed course(s) will be taught;
(ii) A proposed curriculum appropriate for the type(s) and class(es) of licensees to which the course(s) will be taught. All curricula shall include but not be limited to:

(a) Business practices;

(b) Relevant building code provisions, rules, policy and procedure notices, and reference standards enacted or promulgated by the Department in the twenty-four months prior to the individual course date(s);

(c) Department of Environmental Protection Water Rules;

(d) Department of Buildings filing and inspection requirements made effective by the Department in the twenty-four months prior to the individual course date(s);

(e) Safety/hazardous materials;

(f)New technology;

(g) Integrity/anti-corruption standards; and

(h) Other subjects identified by the Commissioner.

(iii) A schedule detailing the courses' proposed cost(s) to individuals and/or groups wishing to enroll;

(iv) A listing of the courses' proposed availability;
(v) A detailed statement of the proposed provider's qualifications, including but not limited to instruction staff qualifications, other jurisdictions in which the provider has been approved to provide continuing education courses (if any), the composition of its governing authority, an identification of its administrative resources (physical and human), and documentation that demonstrates financial viability;
(vi) A detailed statement of the proposed provider's procedures for confirming the identity of individuals taking any course(s) and for the issuance of a fraud-resistant document demonstrating that a licensee attended the course(s); and
(vii) Such other items as the Commissioner of Buildings may deem appropriate and necessary.

(c) The Department of Buildings shall notify applicants of their approval in writing. Departmental approval of courses and providers shall expire on December thirty-first of every other year. Applicants for approval shall therefore submit applications on or before the first of November of the year approval is to expire.

§19-03 Exemptions from Inspection and Testing Requirements.

(a) *Applicability*. This rule shall be applicable *to all plumbing and gas piping jobs for which inspection and testing is required pursuant to Administrative Code §27-919.

***"to" not enacted but probably intended.**

(b) Every new plumbing and gas piping system and every part of an existing system that has been altered, except for alterations involving ordinary repairs, shall, upon notification provided to the Department pursuant to Administrative Code §27-920, be tested and inspected to determine compliance with Administrative Code requirements as set forth in Administrative Code §27-922. However, for jobs involving minor plumbing work as defined in paragraph (c) of this section, the Department may accept written certification from a licensed Master Plumber that the job was performed in compliance with the requirements of the Administrative Code and any other relevant rules and regulations of the Department in lieu of the notification and inspection requirements set forth in Administrative Code §§27-920 and 27-922.

(c) For the purposes of this section, "minor plumbing work" is defined as any of the following:
(i) The removal of a domestic plumbing system not connected to a fire suppression system, or the removal of a portion of such system;
(ii) The relocation of up to two plumbing fixtures that are a distance of no more than ten (10) feet from the original fixture, and within the same room, except in health care facilities, subject to paragraph (d) (i) below;
(iii) The installation, replacement or repair of a garbage grinder or back flow preventer and the replacement or repair of a sump pump, subject to paragraph (d) (i) below;
(iv) The replacement of closet bends or shower bodies, subject to paragraph (d) (i) below;
(v) The replacement of gas water heater or gas fired boilers with capacity of 350,000 BTU or less where the existing appliance gas cock is not moved, subject to paragraph (d) (ii) below; or
(vi) The repair or replacement of any non-gas, non-fire suppression plumbing not longer than 10 feet inside a building, or connected piping previously repaired or replaced under this provision.

(d) Written certification that minor plumbing work conforms to applicable laws, rules, and regulations, as permitted pursuant to paragraph (b) of this section, shall be submitted in such a form and in such a manner as the Commissioner may require. Master Plumbers submitting such certification must provide such information as the Commissioner may require, including but not limited to:
(i) Where the certification is for the relocation of up to one plumbing fixture, installation, replacement or repair of a garbage grinder, back flow preventer, or sump pump, or for the replacement of closet bends or shower bodies, a statement that any roughing and/or venting was done in compliance with code requirements.
(ii) Where the certification is for replacement of gas water heater or gas fired boilers with capacity of 350,000 BTU or less and the existing appliance gas cock is not moved, a statement that the chimney has been inspected.

CHAPTER 20 PIPING SYSTEMS

§20-01 Witnessing Tests of Gas Piping Systems.

(a) Persons witnessing tests of gas piping systems in accordance with §27-921(b) of the Administrative Code, other than authorized plumbing inspectors of the Department of Buildings, shall be acceptable to the Commissioner of Buildings and shall meet the following prerequisites:
(1) Be either a registered architect, licensed professional engineer, licensed master plumber, or employee of a utility company; and,
(2) Have at least five years experience in inspection and testing of gas piping systems, or hold a current master plumbers license.

(b) The witnessing of the test in accordance with §27-921 and these rules shall be in person by the specifically designated person on the list maintained by the Commissioner. This authorization may not be delegated to anyone, nor can persons under his supervision witness the test in his behalf.

(c) Authorized persons on the list shall be required to maintain liability insurance of an amount acceptable to the Department.

(d) Failure of authorized persons to require compliance with law and these rules, and/or submission of a false statement will be grounds for immediate suspension or revocation of an authorized representative's authority to conduct inspections on behalf of the Department, and the immediate suspension of a Master Plumber License; be cause for immediate referral to the Division of Professional Conduct of the State Education Department, in the case of Architects or Engineers; and be cause for immediate referral to the Public Service Commission, in the case of utility companies.

(e) Reports of the inspections or tests are required to be submitted, and shall be made on forms acceptable to the Department.

(f) No reports shall be accepted for any installations for which a prior permit has not been previously obtained from the Department.

§20-02 High Pressure Steam Piping Systems.

These regulations shall apply to high pressure steam piping system which is defined as a system operating at a steam pressure of more than fifteen (15) psi. In the application of these rules and regulations, loops, bends or offsets of the piping shall not be considered expansion joints.

(a) *Existing Systems.*

The following requirements are applicable:

(1) All expansion joints, anchorage and guides which are presently not accessible to permit a complete visual inspection, shall be made accessible. Where the integrity of any shaft enclosure is impaired hereby, proper means shall be provided to maintain its integrity. All joints, including the joints so exposed, shall be inspected for any signs, visual or audible, of [*sic*] any escaping steam or condensation. Where there is evidence of such escaping steam in a bellows joint, immediate appropriate action shall be taken including expeditious replacement of the joint. If the escaping steam is immediately adjacent to a tenanted area, the occupants of this area shall be evacuated and shall not be permitted to return until the joint has been replaced or removed. In all cases, the joint shall be kept under intensive surveillance by the owner until such replacement or removal. In the event that the leak is progressive and has progressed to an extent as to present a hazard, the steam system or any part thereof serviced by the affected joint shall be shut down and the Department of Buildings shall be notified immediately. The Commissioner may waive the requirement for the exposure of the structural attachments to the building of the anchorage or guides upon the certification of a professional engineer to the effect that the exposure would impair a structural element of the building and specifying the basis on which he predicates his conclusion as to the adequacy of the structural attachments to the buildings of the anchorage or guides without such exposure. Upon exposure and initial inspection of the joints, the Commissioner shall be notified in writing by registered or certified mail. Such notification shall specify the type and location of the joints and the date inspected. The notification shall also contain the name of the person responsible for seeing that the inspections are made and properly recorded. Such inspections and exposure shall be made within two weeks from the effective date of this requirement. The initial inspection of the anchorage and guides shall be made within two months from the effective date of this requirement.

The Commissioner shall be notified in the same manner described above of any subsequent change of the person responsible for seeing that the inspections are made and records kept.

The notifications required in this paragraph shall be addressed to the Borough Superintendent of the Borough in which the system is located.

(2) *Maintenance inspections.*

(i) Expansion joints shall be inspected weekly.

(ii) The anchorage and guides shall be inspected annually. Exposure of the structural attachments to the buildings of the anchorages or guides shall not be required where the inspection reveals no improper movement or defects in the system.

(iii) A record of such inspections shall be kept by the person in charge of the mechanical equipment of the building or other qualified person designated by the owner and acceptable to the Commissioner. The records shall be available at the premises and subject to inspection by the Commissioner.

(3) No joint, anchorage or guides shall be repaired, replaced or relocated, unless and until an application has been filed and the approval of the Department is obtained. The application shall contain all pertinent information and shall be filed by a licensed professional engineer, knowledgeable as to high pressure steam piping systems. He shall be responsible for the controlled inspection of the proposed work in accordance with the approval of the Department. This provision shall not apply to the repacking of a slip or ball joint, however, records of such repacking shall be kept in the inspection records as hereinabove provided. When, in the opinion of the professional engineer, the requirement for prior approval by the Department of Buildings would create an imminent health or safety hazard, the professional engineer may permit the work to proceed without prior approval. In such cases, he shall, prior to the repair, replacement or relocation, notify by telephone the Borough Superintendent of the borough in which the building is located; and, if the emergency occurs at other than normal working hours, he shall notify the Emergency Section by telephone at 312-8298.[*sic*] This shall be followed up by the filing of the application and obtaining the approval specified above.

(4) The Commissioner, where he deems it necessary, shall require the replacement or relocation of any joints, guides or anchors. The Commissioner shall cause the joints in potentially hazardous locations such as those which are located adjacent to tenant occupied spaces to be relocated, unless means exist or are provided for eliminating the hazard.

(5) Applicability upon completion of new high pressure steam piping systems. Upon the completion of a new high pressure steam piping system and the approval of same by the Department, the rules relating to existing high pressure steam piping systems affecting maintenance requirements and the keeping of records shall apply.

(b) *New Systems.*

For the purpose of the application of these rules and regulations, the replacement of existing steam piping systems, the installation of a new system in existing buildings, as well as installations in buildings hereafter constructed, shall be considered to be new high pressure steam piping systems. The following requirements are applicable:

(1) Design.

(i) The system shall be designed by a registered architect or licensed professional engineer. An application and plans shall be filed and the approval of the Department obtained. The plans and application shall contain, but not be limited to the following information:

(A) Size and location of all steam piping.

(B) The operating pressures and temperatures.

(C) The location, type, specifications and details of all expansion joints.

(D) The design, size, material and location of all anchors, guides and auxiliary steel, and the stresses thereon.

(ii) Systems using utility street steam shall be designed for a pressure of 200 psig and 413^{o} [*sic*] F up to and including the steam pressure reducing valve or valves which reduce the pressure of 90 psig or below. For steam pressures between 90 psig and 16 psig the system shall be designed for 125 psig.

(2) *Installation.*

(i) Installations (including any welding for same), shall be under controlled inspection by the engineer responsible for the design, or by a Professional Engineer acceptable to him.

(ii) Systems using utility street steam shall be designed for a pressure of 200 psig and 413^{o} F up to and including the steam pressure reducing valve or valves which reduce the pressure of 90 psig or below. For steam pressures between 90 psig and 16 psig the system shall be designed for 125 psig

(iii) Welders shall be qualified for all required pipe sizes, wall thickness and positions in accordance with the American Society of Mechanical Engineers, Welding and Brazing Qualification, Section IX, Boiler and Pressure Vessel Code

1980, (ANSI/ASME BPV- IX- 1980). Requalification is required every three years; or, if there is a specific reason to doubt the welders ability to make sound welds.

(iv) Welder qualification testing shall be performed by an agency listed with the Department of Buildings, and if the testing is by radiography, the inspection shall have a minimum radiography qualification of Level II in accordance with the American Society for Non-destructive Testing, 3200 Riverside Drive, Columbus, Ohio 43221, Recommended Practice, Document No. SNT-TC-1A- 1980.

(v) Copies of the certified welder qualification reports shall be maintained by the responsible welding agency and the company performing the welding, and shall be made available upon request to the Department of Buildings.

(vi) No reports from any welding inspection agency shall be accepted unless such agency has first requested and obtained from this Office [*sic*] in accordance with §25-01(q)(1) of the Board of Standards and Appeals Welding Rules.

(vii) (A) All piping over 3 inches shall be butt welded. Piping 3 inches and under may be socket welded or threaded.

(B) Threaded piping may continue to be used for existing construction in sizes of 6 inches and under.

(C) The Borough Superintendent may determine where welding is not feasible and that an acceptable alternative has been provided.

(viii) Radiographic examination, when required, shall be performed on butt welds in accordance with the following standard:

(ix) The percentage of butt welds subject to radiographic examination shall be based on the piping pressure and shall be as follows:

AMSI/ASME B 31.1 - 1980

Piping Pressure	Percentage
90 psig or below	Not required
91 psig to 150 psig	10% at Random
Over 150 psig	100%

However, if in the opinion of the engineer responsible for Controlled Inspection radiographic examination is not required for piping at pressure between 90 psig and 150 psig, he shall so specify in writing, and his final report on the installation may omit the foregoing, and be predicated on all of the other requirements noted above, as well as a hydrostatic test.

(x) Testing - Hydrostatic test the completed installation at 150 percent of the design pressure for all piping pressure. Where the changes in an existing steam system involve less than 30 percent of the piping in the system, the testing may be in accordance with the ASME Power Piping Code, (ANSI/ASME B 31.1 - 1980).

§ 20-03 Standards for Non-Mercury Gauges.

(a) *Applicability*. In accordance with Local Law 17 for the year 2001, the rules in this section establish minimum standards for non-mercury gauges to test gas piping, drainage and vent systems.

(b) *Minimum Requirements*. Each gauge shall meet the following requirements:

(1) The gauge shall be manufactured and used in accordance with the ASME B40.100-1998 Standard for Pressure Gauges and Gauge Attachments, which incorporates ASME B40.1-1998 and ASME B40.7-1998, and the manufacturer shall provide with the gauge a written statement that the gauge is manufactured in accordance with such ASME standard,

(2) The gauge shall be labeled with the name of the manufacturer,

(3) The gauge shall be kept in a padded separate rigid box and the manufacturer's instructions for use and protection of the gauge shall be complied with,

(4) The units of measurement "psi" shall appear on the face of the gauge, and

(5) The gauge shall be kept in good working order.

(c) *Analog Gauges Used to Measure Pressure in the Magnitude of 3 psig*. Each analog gauge used to measure pressure in the magnitude of 3 psig shall meet the following requirements in addition to satisfying the minimum requirements set forth in subdivision (b):

(1) The face of the gauge shall not be smaller than 2¼ inches in diameter,

(2) The gauge shall have a minimum of 270-degree dial arc,

(3) The gauge shall be calibrated in increments of not greater than one-tenth of a pound,

(4) The range of the gauge shall not exceed 5 psig when a 2¼ inch diameter gauge is used,

(5) The $1/10^{th}$ psig interval on the gauge shall not be smaller than $1/10^{th}$ of an inch of arc,

(6) The gauge shall be provided with an effective stop for the indicating pointer at the zero point,

(7) The gauge shall be protected from excessive pressure with a shut off valve and prior to using the 5-psig gauge the snifter valve shall be tested with a tire gauge to determine the magnitude of pressure, and

(8) The gauge shall have a calibration screw.

(d) *Analog Gauges Used to Measure Pressure in the Magnitude of 5 psig*. Each analog gauge used to measure pressure in the magnitude of 5 psig shall meet the following requirements in addition to satisfying the minimum requirements set forth in subdivision (b):

(1) The face of the gauge shall not be smaller than 2¼ inches in diameter,

(2) The gauge shall have a minimum of 270-degree dial arc,

(3) The gauge shall be calibrated in increments not greater than one-fifth of a pound,

(4) The range of the gauge shall not exceed 10 psig when a 2¼ inch diameter gauge is used,

(5) The $1/5^{th}$ psig interval on the gauge shall not be smaller than $1/10^{th}$ of an inch of arc,

(6) The gauge shall be provided with an effective stop for the indicating pointer at the zero point,

(7) The gauge shall be protected from excessive pressure with a shut off valve and prior to using the 10-psig gauge the snifter valve shall be tested with a tire gauge to determine the magnitude of pressure, and

(8) The gauge shall have a calibration screw.

(e) *Digital Gauges Used to Measure Pressure in the Magnitude of 3 psig and Higher*. Each digital gauge used to measure pressure in the magnitude of 3 psig and higher shall meet the following requirements in addition to satisfying the minimum requirements set forth in subdivision (b):

(1) The gauge shall have a minimum reading of $1/100^{th}$ of a psig, and

(2) An extra charged battery shall be readily available for immediate use with the gauge.

CHAPTER 21 PLANS

§21-01 Limited Supervisory Check of Plans.
In accordance with §27-143 of the Administrative Code of the City of New York, the Commissioner will exercise his discretion in designating portions of plans for the construction of new buildings, other than private residences and their appurtenances and accessories, for limited supervisory check predicated upon statements and representations made by the Architect or Engineer of record and conditions as follows:

(a) That the time required for a complete examination by the department would delay the project.

(b) That complete and co-ordinated architectural, structural and mechanical plans are or have been filed.

(c) That the portion for limited supervisory check be clearly and specifically identified, however, it shall not include compliance with the zoning resolution nor the exit requirements of the building code or other applicable laws.

(d) Wherever applicable, the necessary certifications and appropriate approvals have been obtained regarding:
(1) Landmarks, landmark sites and historic districts.
(2) Sewers.
(3) Urban Renewal Areas.
(4) Transit Authority for the effect on subways.
(5) Compliance with General City Law, §35.
(6) Proof of filing with the Department of Transportation of a related paving plan application (General City Law, §36; New York City Charter, § 230);
(7) Liability Insurance. (General City Law, §36; New York City Charter, §220).

(e) That where there are associate Architects or Engineers, that they likewise join in the request for limited supervisory check of the plans.

(f) That the Architect or Engineer of record and associate Architects or Engineers, if any, are aware that the Commissioner, in the exercise of his discretion in accordance with §27-143 of the Administrative Code, will rely upon the truth and accuracy of the statements contained in the construction application made by them, and any amendments submitted in connection therewith, as to compliance with the provisions of the Building Code and other applicable laws and regulations.

(g) That the Architect or Engineer of record and associate Architects or Engineers, if any, are further aware that the Commissioner will rely on a complete enumeration of exceptions to compliance with the provisions of the Building Code and other applicable laws and regulations as set forth in the Statements A and B, filed with the construction application. That, prior to the request for a limited supervisory check, the enumerated exceptions must be resolved by reconsideration or otherwise.

(h) Should disclosure indicate a non-compliance with the Building Code and other applicable laws and regulations, the Architect or Engineer of record shall take the necessary remedial measures to obtain compliance.

(i) That the owner is aware of this request and the conditions under which it is being granted and he agrees to comply with any requirement for remedial measures, if same becomes necessary.

§21-02 Additional Procedures with Respect to Designation of Applications and Plans Submitted by Registered Architects and Licensed Professional Engineers for Limited Supervisory Check.

(a) *Purpose.*
Pursuant to §27-143 of the Administrative Code, the Department of Buildings has established procedures for limited supervisory check of applications and plans submitted by registered architects and licensed professional engineers. In general, these procedures have benefited both the construction industry and the general public by expediting departmental review without sacrifices to public safety. While the vast majority of architects and engineers have justified the confidence which the Department has in their professionalism, there have been occasions when the laws which govern construction in the City have been disregarded, threatening public safety. The purpose of these regulations which amend regulations promulgated by the Department and effective February 9, 1986 is to protect the safety and integrity of the procedures for limited supervisory check by assuring that such disregard is not permitted to continue.

(b) *Grounds for Exclusion.*
The Commissioner may exclude a registered architect or licensed professional engineer from the Department's procedure for limited supervisory check of applications and plans if the Commissioner finds that:
(1) Applications, plans, certifications or reports submitted by the architect or engineer demonstrate such a lack of knowledge of the Building Code, Multiple Dwelling Law, Zoning Resolution and/or Labor Law that in the interest of public safety and welfare the applications and plans submitted by such architect or engineer should be subject to full review by the Department; or
(2) The architect or engineer has submitted applications, plans, certifications or reports to the Department which were required to be prepared by him or her or under his or her supervision but which were not prepared by him or her or under his or her supervision; or the architect or engineer engages in any conduct evidencing a delegation of professional responsibilities to a person where the architect or engineer knows or has reason to know that such person is not qualified, by training, by experience or by licensure, to perform them; or
(3) The architect or engineer has knowingly or negligently made false or misleading statements or knowingly or negligently falsified or allowed to be falsified any certificate, form, signed statement, application or report filed with the Department, or knowingly failed to file a report required by law or the Department or willfully impeded or obstructed such filing, or induced another person to do so; or
(4) The architect or engineer has been convicted of a criminal offense where the underlying act arises out of his professional occupation or business dealings with the City of New York.

(c) *Procedures.*
(1) Written notice of the basis for such action to exclude from limited supervisory check shall be served on the architect or engineer pursuant to the provisions of New York State Civil Practice Law and Rules §308.
(2) If the Commissioner finds that continued use of the procedures for limited supervisory check by the architect or engineer would be likely to create a condition of imminent peril to public safety, the Commissioner's determination shall be effective immediately.
(3) On and after the effective date of the determination, whether after hearing as provided in §21-02(c)(1) or immediate suspension pursuant to §21-02(c)(2) of these regulations, as the case may be, any or all of the applications and plans submitted by the architect or engineer shall be subject to full review by

the Department.

(d) *Hearing.*

(1) Upon a filing of the administrative charges, the architect or engineer will be scheduled for a hearing on the determination by submitting written objection to the determination and the grounds for such objection to the Commissioner within fifteen days after the date that the notice of determination is served.

(2) The hearing will be held at the Office of Administrative Trials and Hearings. Pursuant to §21-02(c)(2) of these regulations, if the Commissioner's determination was effective immediately, the hearing shall be scheduled expeditiously, with due consideration given to the current calendar at the Office of Administrative Trials and Hearings.

(3) The architect or engineer may be represented by counsel and may present evidence in his or her behalf. A transcribed or tape-recorded record shall be kept of the hearing.

(4) After the conclusion of the hearing, the OATH Administrative Law Judge shall issue proposed findings of fact and proposed conclusions of law, along with a report and recommendation issued by the OATH Administrative Law Judge and shall issue a final decision. The Commissioner shall notify the architect or engineer in writing of the Commissioner's decision. Such notice shall include a written statement indicating the reason for the decision.

(e) *Review of determination.*

At the expiration of one year from the date of the initial determination to exclude an architect or engineer from participation in the procedures for limited supervisory check of applications and plans, and at intervals of no more than six months thereafter, upon request of the architect or engineer, the Commissioner shall re-examine such determination. If the architect or engineer has not committed any of the acts described in §§21-02(b)(2) or (3) during such period and applications and plans submitted by him or her during such period which were subject to complete examination by the Department demonstrate adequate knowledge of the Building Code, Multiple Dwelling Law, Labor Law and the Zoning Resolution and the Commissioner determines that it would be in the public interest to do so, he or she may rescind such determination. In making such decision, the Commissioner may consider any relevant documents submitted by the applicant bearing on his or her capability to resume participation in the procedures for limited supervisory check.

CHAPTER 22 PRESSURE TANKS

§22-01 Installation and Maintenance of Pressure Tanks Operating at a Pressure in Excess of 15 PSI and Their Proximity to Gas Supply or Service Lines.

(a) *Applicability.* These regulations shall apply to tanks containing water and air in combination, under pressure exceeding 15 psi above atmospheric pressure, where the pressure is supplied and maintained by pumps connected directly to the tanks.

b) *Design.*

The system shall be designed by a registered Architect or a Licensed Professional Engineer. An application and plans shall be filed and the approval of the department obtained. The plans and application shall contain, but not be limited to:

(1) Size and location of high pressure tanks.

(2) The operating pressures and temperatures.

(3) The location, type and specifications of pressure relief valves.

(c) *Location.*

(1) All high pressure tanks shall be located a clear distance of at least five feet horizontally from a gas service or distribution line or its vertical projection upon the floor.

(2) All new high pressure tank [*sic*] installations shall be located in rooms separated from gas service or distribution lines.

(3) In cases where the spatial relationship between tanks and gas services does not comply with the regulations, it shall be the responsibility of the party responsible for the last installation to correct the violation.

(d) *Installation.*

(1) Installation with the exception of welding, shall be under controlled inspection by the engineer responsible for the design, or by a Professional Engineer acceptable to him.

(2) The welding shall be under controlled inspection of an Engineer, supervising a welding inspection agency acceptable to the Department of Buildings.

(3) Welders shall be qualified for all pipe sizes, wall thickness and positions in accordance with either the American Petroleum Institute, 1801 K Street, N.W., Washington, D.C. 20006, Standard for Welding Pipelines and Related Facilities, Fourteenth Edition, January 1977, (API STD 1104-1977), or the American Society of Mechanical Engineers, Welding and Brazing Qualification, Section VIII, Boiler and Pressure Vessel Code, 1980, (ANSI/ASTM BPV-IX-1980), and requalified on an annual basis.

(4) The qualification testing shall be performed by an agency listed with the Department of Buildings, and the inspector shall have a minimum radiography qualification of Level II in accordance with the American Society for Nondestructive Testing, 3200 Riverside Drive, Columbus Ohio 43221, Recommended Practice, Document No. SNT-TC-1A-1980.

(5) Copies of the certified welder qualification reports shall be maintained by the responsible welding agency and shall be made available upon request to the Department of Buildings.

(6) No reports from any welding inspection agency shall be accepted unless such agency has first requested and obtained approval from this Office, in accordance with Rule 2511(G)(1) of the Board of Standards and Appeals Welding Rules.

(7) All welded piping shall be butt welded.

(8) Radiography shall be performed on all butt welds in accordance with API STD 1104-1977 or ANSI/ASTM BPV-IX-1980.

(9) Testing- A hydrostatic test of the completed installation at 150 percent of the design pressure adjusted to compensate for the difference in gas or fluid pressure and the ambient temperature shall be conducted. Where the changes in an existing system incorporating high pressure tanks involves less than 30 percent of the piping system, the testing may be in accordance with Standard Power Piping, ANSI B31.1-1980.

CHAPTER 23 NONCOMMERCIAL GREENHOUSES

§23-01 Noncommercial Greenhouses Accessory to Residential Uses as a Permitted Obstruction in Required Rear Yards or Rear Yard Equivalents.

(a) *Definitions*: Greenhouse. A greenhouse shall be defined as a glass or slow burning plastic enclosed building used for cultivating plants.

(b) *Detached accessory noncommercial greenhouse*. A detached accessory noncommercial greenhouse is a permitted obstruction in a required rear yard or rear yard equivalent, pursuant to §23-44 (b) of the Zoning Resolution, when it complies with the following conditions:

1. no portion of the greenhouse is located in a rear yard equivalent which also is a required front or side yard,
2. the greenhouse does not exceed ten feet above the level of the rear yard or rear yard equivalent,
3. the floor area of the greenhouse is included in the total floor area on the zoning lot,
4. the greenhouse use does not create offensive odors or dust,
5. the wall of the greenhouse closest to the appurtenant residential use building shall be a minimum distance of six feet from the exterior wall of such residential use building,
6. the greenhouse shall not be located less than 3 feet from a lot line,
7. the greenhouse shall be constructed of non-combustible materials and glazed with plain or wire glass or slow burning plastic,
8. the glass or slow burning plastic constructed roof shall be capable of supporting the live load prescribed in §27-561 (a) of the Building Code.

(c) *Attached accessory noncommercial greenhouse*. An attached accessory noncommercial greenhouse is a permitted obstruction in a required rear yard or rear yard equivalent, pursuant to §23-44 (b) of the Zoning Resolution when it complies with the following conditions:

1. no portion of the greenhouse is located in a rear yard equivalent which also is a required front or side yard,2. the greenhouse roof shall be no higher than the level of the floor above the lowest residential level,
3. the floor area of the greenhouse is included in the total floor area on the zoning lot,
4. the greenhouse use does not create offensive odors or dust,
5. in no event shall the greenhouse project more than six feet from the plane surface of the building wall,
6. the greenhouse shall be constructed of noncombustible materials and glazed with plain or wire glass or slow burning plastic. The floor of the greenhouse shall be constructed as required in Table 3-4 of the Building Code, for the construction classification of the building to which it is attached and if not on grade [*sic*] shall be capable of sustaining a minimum live load of 75 pounds per square foot,
7. the roof of the greenhouse shall be constructed of glass or slow burning plastic and capable of supporting the live load prescribed in §27-561(a) of the Building Code,
8. the depth of the greenhouse need not be included in the maximum permitted depth of a room, pursuant to §30(3) of the Multiple Dwelling Law,
9. the greenhouse shall be provided with operable windows or jalousies, whose free openable area shall be equal to at least five percent of the combined floor area of the greenhouse, as prescribed in §27-750 of the Building Code.

CHAPTER 24 REFUSE CHUTES AND REFUSE ROOMS

§24-01 Construction and Maintenance of Refuse Chutes and Refuse Rooms.

(a) *Refuse chute enclosures*. Refuse chutes used for conveyance of garbage and rubbish from upper floors of a building to a cellar or other location shall be constructed with an enclosure of brick masonry at least eight inches in thickness or of reinforced concrete at least six inches in thickness, except as otherwise provided in this section.

(b) *Height and service openings*. Refuse chutes shall extend from the refuse collection room to a height of at least six feet above the roof. A spark arrestor shall be provided at the top of the chute above the roof. Service openings into the chute shall be equipped with approved self-closing hoppers so constructed that the chute is closed off while the hopper is being loaded and so that no part will project into the chute. The area of service opening shall not exceed one third the area of the chute. Hopper doors shall have a fire resistive rating of at least one hour, unless separated from the corridor by a fireproof, self-closing door in which case they shall be constructed of incombustible material**.**

(c) *Existing flues and refuse chutes***.** Flues for existing incinerators may be used for refuse chutes provided such flues are in good condition and provided the flues comply with the provisions of subdivisions (a) and (b) of this section. Existing refuse chutes may be continued in use provided they conform to the provisions of subdivisions (a) and (b) of this section, except that existing refuse chutes of other construction, which have been approved by the Department may be retained.

(d) *Refuse chutes in new construction*. Where refuse compacting systems are required hereafter in new construction, refuse chutes shall be required for conveyance of garbage and rubbish to refuse collection rooms, except that refuse chutes will not be required in class A multiple dwellings which are four stories or less in height. Refuse chutes erected hereafter in new construction shall be of a type approved by the board or shall comply with the requirements of subdivisions (a) and (b) of this section. Chutes shall be constructed straight and plumb, without projections of any kind within the chute. Refuse chutes shall have an inside dimension of at least twenty-four inches for the full height of the chute. All chutes shall be supported on fireproof construction having at least a three hour resistive rating.

(e) *Refuse collection rooms*. A refuse collection room shall be provided at the bottom of all chutes at the cellar or lowest story level to receive the refuse. Such rooms shall be enclosed with walls and roofs constructed of material having a minimum fire resistive rating of three hours, except that gypsum masonry may not be used for such enclosure walls. Openings to such rooms shall be provided with fireproof, self-closing doors having a minimum fire resistive rating of one and one-half hours. It shall be unlawful to keep such doors open. Refuse chutes shall extend to the underside of the roof of the refuse room or lower. Roofs shall be at least six inches away from combustible floor or wall construction. Refuse rooms shall be used only for receipt of refuse and for refuse compacting equipment. Refuse rooms shall be provided with sufficient sprinklers to sprinkle all parts of the room, with at least two sprinkler heads provided and with sprinklers so separated as to sprinkle a maximum area of the room when one of the sprinklers is blocked or not operating. A hose connection shall be provided within the refuse room. Existing refuse rooms and incinerator rooms that have been approved by the Department for such use may be retained as approved.

(f)*Collection room floors.* The floor within the room for the collection of refuse shall be constructed of concrete and shall be sloped to a floor drain within the room connected to the house drain. The drain shall be provided with a protective screen to retain solid material. Floor drain traps shall be readily accessible for cleaning.

(g) *Use of existing combustion chambers.* Existing incinerator combustion chambers may be used in whole or in part as refuse collecting rooms for collection of refuse and for compacting equipment provided the grates are removed and provided they comply with the provisions of subdivision (e) of this section.

(h) *Sprinkler operation and water supply*. Sprinklers shall be designed to operate automatically at a temperature not exceeding one hundred sixty-five degrees Fahrenheit. They may be electrically controlled provided such sprinklers are approved by the Board of Standards and Appeals. Sprinklers may be connected to the cold water supply of the building at the point where such service enters the building or at the base of a water supply riser provided the piping of such service or riser is of adequate size. No connections, except those for sprinklers, shall be made to the sprinkler piping.

(i)*Hoppers, cut off doors and compactors.* A hopper and cut off door shall be provided at the bottom of the refuse chute to regulate and guide the flow of refuse into containers. Where compactors are installed so that the refuse flows directly into the compacting equipment, the equipment may be used in place of the hopper and cut off door. Compacting equipment shall be arranged to operate automatically when the level of rubbish is not higher than three feet below the lowest door.

Compactors shall be located entirely within the enclosure of the refuse room and former combustion chamber where the latter is retained, except that motors, pumps and controls may be installed in adjacent rooms.

Where refuse is removed manually, the refuse shall be removed with sufficient frequency so that it will at no time extend less than three feet below the level of the lowest hopper door opening into the chute.

(j)*Number of sprinkler heads.* Sufficient sprinklers shall be installed in the refuse room and former combustion chamber to provide sprinkler coverage for the entire area of each unit.

(1) Adequate lighting shall be provided in refuse rooms.

(2) Refuse chutes, refuse rooms, hoppers and all parts of the refuse collecting system shall be maintained in a clean and sanitary condition at all times, free of vermin, odors and defects, and shall be maintained in good operating condition. Fused sprinkler heads shall be replaced promptly.

(3) The owner shall establish a program to ensure that the refuse chute and the refuse room and appurtenances will be treated as often as may be necessary to prevent infestation with insects or rodents. The owner shall maintain a record of such treatments which shall be available at all times for inspection by the Department.

(k) These rules shall apply only to refuse chutes in new construction and to refuse chutes resulting from the conversion of existing incinerator flues and to existing refuse chutes.

(l) *Collection and disposal of refuse within premises.* The collection and disposal of refuse within any building or on any premises shall be performed as deemed necessary to provide for the safety, health and well being of the occupants of buildings and of the public. The construction, operation, maintenance, cleanliness and sanitation of refuse chutes and refuse rooms and extermination treatment for insects and rodents, and the keeping of records of such treatments for refuse chutes and refuse rooms shall be in accordance with regulations established by this Department in consultation with the Department of Health.

CHAPTER 25 CLIMBER AND TOWER CRANE RIGGERS

§25-01 Licensing Persons as Climber or Tower Crane Rigger.

(a) *Qualifications*. Applicants shall meet the following qualifications at the time of filing for the license:

(1) Be able to read, write and speak the English language.

(2) Be able to interpret structural and erection drawings.

(3) (i) Have at least five years of supervisory experience within the last 10 years in the planning and execution of the erection or dismantling of tower and climber cranes; or

(ii) For a period of five years within the last 10 years, an applicant shall have erected or dismantled, as part of a team, eight or more tower and/or climber cranes of which at least three erections and dismantlings of such cranes shall be under his supervision, and/or oversee the safety and code requirements for the same.

(b) *Prerequisites to examination*. Applicants shall be required to have passed a written and practical examination no more than one year prior to the application filing date. Prior to being eligible to take such examination, an applicant must submit satisfactory evidence that:

(1) the applicant has at least five years of supervisory experience in the planning and execution of the erection or dismantling of tower or climber cranes; or

(2) the applicant has at least five years of practical experience working as part of a team erecting and dismantling tower or climber cranes and has participated in at least eight such erections or dismantlings.

(c) *Annual renewal of licenses without examination.* Licenses issued under the above stated rules may be renewed annually without examination.

(d) *Requirement of examination following failure of timely renewal.* Failure to renew this license annually shall require an examination or re-examination as appropriate. Renewal applications shall be submitted between 30 and 60 days prior to the expiration date of the license.

(e) *Fees*. The initial fee for licensing in accordance with these rules shall be $150.00, and the annual renewal fee shall be $50.00. If the initial application is denied, a refund of $50.00 will be made.

CHAPTER 26 SAFETY OF PUBLIC AND PROPERTY DURING CONSTRUCTION OPERATIONS

26-01 Filing of Site Safety Programs and Designation of Site Safety Managers.

(a) Program to be filed.

(1) No permit shall be issued for:

(i) the construction of a major building (as hereafter defined); or

(ii) for the alteration of the facade of a major building when a sidewalk shed is required by §27-1021(a)(5) of. The site

safety program shall be submitted after the Administrative (Building) Code, until a document describing a site safety program has been filed at the borough office approval of the building application has been obtained, but before approval of any full or partial permit. If partial approval and partial permit are being sought (e.g. foundation, excavation or the like), then the scope of the site safety program shall reflect that component of work.

(2) A major building is a building either:

(i) 15 or more stories;

(ii) 200 feet or more in height;

(iii)with a lot coverage of 100,000 square feet or more regardless of height; or

(iv) as designated by the commissioner of the Department of Buildings.

(b) *Manager to be designated.* The site safety program shall provide for the designation of a site safety manager, certified by the Department of Buildings.

(c) The Department of Buildings shall issue a site safety manager certificate to an individual who shall have good moral character so as not to adversely impact upon his or her fitness to perform the duties and responsibilities of a site safety manager, and the following qualifications:

(1) (i)New York State Licensed Professional Engineer or Registered Architect, or eight years of construction supervision experience, including five years of such experience with major buildings, and

(ii) Proof that, within the year prior to the date of the application for certification, the person has satisfactorily completed an orientation course approved by the Department of Buildings of no less than five hours in duration and passed a written examination covering Subchapter 19 of Chapter 1 of Title 27 of the Administrative (Building) Code and the duties of site safety manager; or

(2)(i) Completion of an on-the-job training program under a currently certified site safety manager. Such training shall cover all aspects of the site safety management and all phases of building construction, from the commencement of construction until the building is completely enclosed, and shall last a minimum of 18 months. Each month the site safety manager shall summarize the trainee's activities in the site safety log or other record, and shall certify as to the trainee's satisfactory completion of the training program; and

(ii) Proof that, within the year prior to the date of the application for certification, the person has satisfactorily completed 40-hour course approved by the Department of Buildings and passed a written examination covering Subchapter 19 of Chapter 1 of Title 27 of the Administrative Code and the duties of a site safety manager.

(d) Certificates shall be renewable every three years, provided that the certificate holder shall have good moral character so as not to adversely impact upon his or her fitness to perform the duties and responsibilities of a site safety manager, and shall have satisfactorily completed a seven (7) [*sic*] hour site safety course approved by the department within one (1) year prior to the renewal date.

(e) Effective October 1, 1987, all individuals, whether previously approved or currently designated as site safety managers or alternates, must hold a site safety manager certificate from the Department of Buildings. All incumbents who do not hold a certificate as of that date shall be disqualified from the position.

(f) *Responsibility for site safety.* Nothing in these rules is intended to alter or diminish any obligation otherwise imposed by law on the owner, construction manager, general contractor, contractors, materialmen, architects, engineers, or other party involved in a construction project to engage in sound engineering, design and construction practices and to act in a reasonable and responsible manner to maintain a safe construction site.

(g) *Site Safety program and manual.* (1) The site safety program shall include the duties of the site safety manager and the measures to be taken to ensure compliance with the safety requirements of Subchapter 19 of Chapter 1 of Title 27 of the Administrative (Building) Code.

(2) The site safety manager shall monitor compliance with the safety requirements of Subchapter 19 of Chapter 1 of Title 27 of the Administrative (Building) code, but shall not be responsible for reviewing design specifications, lifting capacities, performing technical inspections, etc. (except as such duties may fall within the scope of other responsibilities of such person).

(3) The specific duties and responsibilities of the site safety managers are described in the Department of Buildings' Manual for Site Safety Programs, which appears as an appendix to this rule.

(i)the manual may not be changed or modified by the Department of Buildings without first obtaining comment from the Building Industry Advisory Council of the Department of Buildings or representative organizations for the construction industry.

(i)The manual shall be an appendix to these rules and regulations.

(ii)The manual shall be available at the offices of the Department of Buildings.

(4) The site safety program to be submitted pursuant to this section shall contain statements from both the contractor and the site safety manager and alternate managers, if any, that the manager and alternates will have those duties and responsibilities as described in the manual and that the contractors' policy is as set forth in the manual. The site safety program shall include a site safety plan, which shall have descriptions of the following items, including approximate dates of installation, where applicable:

(i) location of all construction fences around job site;

(ii) location of all gates in fences;

(iii) location of guardrail around excavation during excavation, when required;

(iv) horizontal and vertical safety netting program, including details of the initial installation, a schedule of horizontal jumps and vertical installations, and designated crane and derrick lifting areas where the horizontal netting is to be omitted;

(v) location of sidewalk sheds;

(vi) location of temporary walkways;

(vii) location of footbridges and motor vehicle ramps;

(viii) protection of side of excavation, when required;

(ix) location of street and sidewalk closing(s);

(x) axpproximate location of material and personnel hoist(s) and loading areas;

(xi)approximate location of all crane and derrick loading

areas;

(xii) location of surrounding buildings, indicating occupancy, height and type of roof protection, when required; location of standpipe system and siamese hose connections; location of temporary elevators for fire department use when building is above 75 feet in height; location of all exterior contractors' sheds; safety netting and scaffolding when required by §27-1022 of the Administrative Code; sidewalk and roadway widths and all traffic information and all exits from job sites; specific case reconsiderations in relation to requiring safety netting during construction operations are to be attached and the revised site safety plans shall be approved.

(h) *Signs at construction sites.* In addition to the information required to be displayed on signs at construction sites specified in §27-1009(c) of the Administrative Code, the telephone numbers of the following shall be prominently displayed in both English and Spanish:

The Department of Buildings
The Building Enforcement Safety Team (B.E.S.T.)
The Emergency Squad
The Department of Transportation

(i) *Fees.* The initial fee for obtaining certification as a site safety manager in accordance with these rules shall be $300.00, and the renewal fee shall be $150.00.

(j) Other than as required by statute or pursuant to these rules or as set forth in 1 RCNY §27-03, there shall be no information, pictorial representations, or any business or advertising messages posted on the sidewalk shed or bridge or other structure listed [***sic***] in §26-252(a) of the Administrative Code of the City of New York which is erected at the construction site and is adjacent to such building.

(k) Where renewal for an application for a sidewalk shed or other protective structure listed in §26-252(a) of the Administrative Code of the City of New York and pursuant to §27-1021 of the Administrative Code is required, such application must be signed by the owner of the affected building.

§26-02 Safety Netting During Construction Operations.

(a) *Applicability.* Safety netting shall be provided on the sides of a structure more than six stories or seventy-five feet in height above the adjoining ground or adjoining roof level, whichever is applicable, when there is exposure to the public or adjacent property. Reference to OSHA Safety and Health Standard 29 CFR 1926.500 is suggested.

(1) While under construction, the facade of such structure is not enclosed. In such case:

(i) Horizontal safety netting shall be provided pursuant to §27-1021(a)(6) and §26-02(e)(3) of these rules.

(ii) Vertical safety netting shall be provided pursuant to §27-1021(a)(7) and §26-02(f)(4).

(2) When demolishing the exterior walls or roof of a structure. In such case: Horizontal safety netting shall be provided pursuant to §27-1022(a)(1) and §26-02(e)(3)(ii).

(3) When exterior walls are being constructed. In such case: Horizontal safety netting shall be provided pursuant to §27-1022(a)(2) and §26-02(e)(3)(iii).

(b) ***Definitions.***

Debris Netting. "Debris netting" shall mean netting of a fine mesh of a size and strength sufficient to catch debris such as falling tools and materials.

Enclosed.

(i) "Enclosed" shall mean a structure is enclosed when the permanent facade is completed except for the windows.

(ii) Such windows shall be protected to a height specified in §26-02 (f)(3) unless there is a sill not less than two feet-six inches in height and vertical mullions or piers with a maximum opening of five feet and a non-corrosive wire cable which is capable of withstanding a load of at least two hundred pounds applied in any direction (except upward).

Exposure to the public or adjacent property. "Exposure to the public or adjacent property" shall refer to any unenclosed facade of [*sic*] a structure which is opposite a street, public way or other open areas intended for public use or which is opposite any side or rear lot line.

Horizontal safety netting.

(i) "Horizontal safety netting" shall mean a horizontal system of nets and their supports, as cited and modified in Building Code Reference Standard RS 19-4.1.

(ii) "Horizontal safety netting" shall include a structural net lined with a debris net of a size and strength sufficient to catch falling tools and materials.

Protected. "Protected" shall mean a structure is protected when there is temporary vertical netting.

Public or adjacent property. "Public or adjacent property" shall mean property which is protected as used herein in relation to "public or adjacent property" as required by Article Seven of Subchapter Three of Title Twenty-six of the Administrative Code.

Qualified person. "Qualified person" shall mean a person trained and qualified in a manner satisfactory to the holder of the work permit.

Structural netting. "Structural netting" shall mean a system of nets capable of complying with the prototype test described in Section Seven of Reference Standard RS 19-4.

Vertical safety netting.

(i) Vertical safety netting means a vertical system of nets and their supports, as cited and modified in Building Code Reference Standard RS 19-4.

(ii) Vertical safety netting shall be of a fine mesh of a size and strength sufficient to contain falling tools and materials.

(iii) Wall opening screens, grills or tarpaulins may be used in lieu of vertical safety netting, provided that they shall be structurally equivalent and of such construction and mounting installed so as to retain debris.

(c) *General requirements.*

(1) Structural net hardware shall be drop forged, pressed or formed steel or material of equal or better quality. Surfaces shall be smooth and free of sharp edges. All hardware shall have a corrosion resistant finish capable of withstanding a fifty hour salt spray test in accordance with ASTM B-1117.

(2) *Identification of nets.* Each structural net shall be permanently labeled with the following information:

(i) Name of manufacturer
(ii) Identification of net material
(iii) Date of manufacture [*sic*]
(iv) Date of prototype test
(v) Name of testing agency
(vi) Serial number

(3) *Inspection.*

(i) Structural nets, including mesh ropes, hardware, connectors,

suspension systems, shall be completely inspected by the manufacturer or manufacturer's representative or other qualified person after each installation. Additional inspections shall be made after relocation, alterations, repair, impact loading and welding or cutting operations above the nets.

(ii) Nets that show mildew, wear, damage or deterioration that substantially affects their strength shall be immediately removed from service and replaced.

(4) *Records to be maintained*.

(i) An on-the-job up-to-date [*sic*] record shall be maintained for the structural portion of each horizontal net. The record shall include the following information:

Net serial number

Date installed

Dates inspected and all removal orders, per §26-02(c)(3)(ii).

The qualified person responsible for the nets shall initial each entry.

The information required by this rule shall be recorded as part of the Site Safety Log, where such log is required.

(ii) A letter or other documentation from the manufacturer stating the description, model or serial number of all vertical netting shall be kept posted until all such netting is removed.

(5) *Care, maintenance and storage*.

(i) Care, maintenance and storage of nets shall be in accordance with the net manufacturer's recommendations with due attention being given to the factors affecting net life.

(ii) Debris shall be removed from nets at least daily.

(iii) Nets shall be capable of a minimum service life of two years under normal on-the-job exposure to weather, sunlight, and handling, excluding damage from misuse, mishandling and exposure to chemicals and airborne contaminants.

(6) *Storage of materials*. Safety netting shall not be used for storing materials.

(7) *Combustibility*. The debris netting shall be noncombustible or flame-resistant.

(d) *Precautions*.

(1) *Sunlight*. Ropes one-half inch in diameter and smaller shall be treated to resist damage from the sun's rays. All nets not in use should be protected from direct and indirect sunlight.

(2) *Abrasion*. Dragging or chafing of nets over the ground or other rough surfaces shall be minimized in order to protect against abrasions and prolong life.

(3) *Sand*. Care shall be taken to keep nets as clean and free of sand as possible.

(4) *Rust*. Nets shall not be stored in metal containers that are rusty. Net hardware shall be replaced if there is evidence of heavy corrosion.

(5) *Welding and cutting operations*. Nets and debris shall be protected from sparks and hot slag resulting from welding and cutting operations or other operations producing sparks or excessive heat.

(e) *Horizontal safety netting*.

(1) *Design, testing and installation requirements*. Horizontal safety netting shall be designed, tested and installed in accordance with Reference Standard RS 19-4, as modified.

(i) *Structural mesh openings*. Mesh openings should be small in order to spread the deceleration force through as many net strands as possible. The maximum size of mesh shall not exceed thirty-six square inches or be longer than six inches on any side measured center-to-center of mesh ropes or webbing, and center-to-center of mesh crossing. All mesh crossings shall be anchored to eliminate frictional wear and prevent enlargement of the mesh opening.

(ii) *Debris netting openings*. The largest opening area for fine mesh netting when used horizontally shall not be larger than one-half square inch.

(iii) *Deceleration and rebound force*. Design, materials and construction shall combine to produce a net which will minimize a deceleration and rebound force.

(iv) *Connections*. Connections between net panels shall develop the full strength of the net.

(2) *Projection of safety netting*. Horizontal safety netting shall project outward horizontally from the edge of the floor a minimum distance of ten feet.

(3) *Locations where required*.

(i) Horizontal safety netting shall be maintained not more than two stories below the stripping operation floor on concrete structures or the uppermost finished (and walkable) concrete floor on steel frame structures, provided that such floor is more than six stories or seventy-five feet in height above the adjoining ground or adjoining roof level, whichever is applicable.

(A) *Stripping operation*. The stripping operation on concrete structures shall not be performed more than three stories below the story being formed.

Note: Industrial Code Rule 23 of the State of New York (12 NYCRR 23-2.4 (a)) states:

"23-2.4 Flooring requirements in building construction. (a) Permanent flooring and skeleton steel construction in tiered buildings. The permanent floors of such buildings or other structures shall be installed as soon as possible as the erection of structural steel members progresses. In no case shall there be more than eight stories, floors or equivalent levels or 120 feet, whichever is less, between the erection floor and the uppermost permanent floor".

(B) *Tarpaulins*. When tarpaulins encase one or more floors immediately below the finished concrete floor in order to maintain temporary heat, the horizontal nets may be located no more than three floors below the finished concrete floor.

(C) The installation of the horizontal safety nets shall not interfere with Fire Department access from the street.

When [*sic*] demolishing the exterior walls or roof of a structure horizontal [*sic*] safety netting shall be constructed and maintained not more than two stories or thirty feet below the story from which the exterior walls and roof are being removed until the demolition has progressed to within six stories or seventy-five feet off [*sic*] the ground or adjoining roof level.

(A) An exterior built-up scaffold conforming to Article eight of Subchapter nineteen of the Building Code may be used in lieu of horizontal safety netting.

(B) The horizontal safety netting or scaffolding shall be required in addition to the sidewalk sheds, fence or railings required under §27-1021 of the Administrative (Building) Code.

(iii) Constructing exterior walls from a scaffold. Horizontal safety netting shall be constructed and maintained not more than two stories or thirty feet below the story from which the exterior walls are being constructed, or the bottom, outer faces and ends of the scaffold shall be enclosed with debris netting or its equivalent so as to prevent the falling of material and debris.

(iv) Designated crane and derrick lifting areas. The

horizontal safety netting required by §§26-02(e)(3)(i)(ii) and (iii) may be omitted in designated crane and derrick lifting areas so long as it is as indicated on the crane application and on the site safety program.

(v) Horizontal safety netting may be removed after the formwork for the topmost level of concrete is removed or after the topmost level of concrete for a steel building is poured.

(f) *Vertical safety netting.*

(1) *Design and installation requirements.* Vertically installed nets or screens shall be supported so as to be capable of withstanding a load of at least two hundred pounds applied at any direction (except upward).

(2) *Debris netting openings.* The largest opening area for fine mesh netting when used vertically shall not be larger than one square inch.

Debris netting purchased prior to November 3, 1987 may be installed until January 2, 1988 and may remain for the duration of construction with openings up to five and one-half square inches. Such netting may not be used to replace tow boards as provided in §26-02(f)(5).

(3) *Height of safety netting.* Vertical safety netting shall have a height not less than sixty inches in buildings more than six stories or seventy-five feet in height.

Vertical safety netting purchased prior to November 3, 1987 may be installed to a height of not less than forty-two inches until January 2, 1988 prior to which time additional netting to a height of not less than sixty inches shall be installed.

(4) *Locations where required.*

(i) Vertical safety netting shall be provided on the sides of a structure more than six stories or seventy-five feet in height above the adjoining ground or adjoining roof level.

(ii) Vertical safety netting shall be maintained at each story except at the story at grade, the story immediately above the sidewalk shed and the roof level where a parapet is installed.

Until elevator in readiness is operative for Fire Department access, such netting shall not be installed below the sixth story or seventy-five feet in height.

(iii) Vertical safety netting shall be secured and kept closed at all times except during actual loading operations or perimeter construction operations.

(5) The top edge and intermediate height of nets shall be mounted securely to non-corrosive wire cable capable of withstanding a load of at least two hundred pounds applied to any direction (except upward).

(6) Toe boards, required by subdivision (b) of §27-1050 of the Administrative Code shall not be necessary if the netting is brought to deck level and securely fastened and has openings not over one inch in greatest dimension.

(g) *Responsibility.* The holder of the work permit and his/her designee shall be responsible for the installation and maintenance of all horizontal and vertical netting, and for complying with these rules and regulations.

(h) *Appeals.*

(1) Requests for New York City Building Code Information, Interpretations, Consultations and Reconsiderations shall be in accordance with Paragraph four of Directive one of 1985. The Commissioner may, in specific cases, modify these rules and regulations where proper methods are proposed to be employed.

(2) *Site Safety Program.* The appeal shall make reference to the Site Safety Program where applicable, when stating the specific relief requested, the practical difficulty, proposed equivalencies consistent with public safety to be complied with and any stipulations.

(i) *Accidents pertaining to public and adjacent properties.*

(l) *Borough office.* The Borough Office of the Department of Buildings shall be notified of all accidents at construction sites at telephone numbers provided in the City's website, http://www.nyc.gov.

(2) The Building Enforcement Special Team (BEST Squad) shall be notified of any accidents relative to buildings fifteen or more stories and two hundred feet or more in height at the telephone number provided in the City's website, http://www.nyc.gov.

§26-03 Storage of Materials During Construction.

(a) *Applicability.* Pursuant to subdivisions (c), (d) and (e) of §27-1018 of the Administrative Code of the City of New York, materials stored on the floors of a building during construction operations shall comply with these rules and regulations.

(b) *Housekeeping.*

(1) When not being used, materials, equipment and tools that might fall from levels above areas used by the public shall be kept away from edges or openings.

(i) When exterior walls are not in place, stored material shall be kept at least ten feet back from the perimeter of the building.

(ii) However, when the floor area is less than one thousand square feet, stored material may be kept not less than five feet back from the perimeter of the building.

(iii) Material may be stored between five feet and ten feet back from the perimeter of the building when such material weighs [*sic*] less than seven hundred-fifty pounds.

(2) Material stored on floors of a building shall be secured when not being used.

(c) *Storage of materials at top working floors.*

(1) Material may be stored to within two feet of the edge of the building on the upper working floors located not more than two stories below the stripping operation on concrete structures or on the uppermost concrete floor on steel structures.

Such material shall be secured against accidental movement such as by winds and vibration from adjacent moving loads or load carriers.

(2) No material shall hang over the edge of a building unless banded and braced preparatory to relocation at the end of the workday.

(i) Where such material is so banded and braced, it may overhang the floor of the stripping operation by not more than one-third of its length so long as it is relocated on the next workday for concrete operations.

(ii) Where the steel mill and lumber mill are located on not more than two additional floors, material may overhang for relocation until the next workday.

(d) *Debris.*

(1) All debris shall be cleaned off floors daily.

(2) The roof of the sidewalk shed and the street shall be cleaned of construction debris daily.

(3) A daily inspection shall be made for construction debris on all floors and if a major building noted in the site safety log.

(e) *Waste dumpsters, debris boxes and skip boxes.*
(1) Waste dumpsters, debris boxes and skip boxes shall be secured from movement by rope, cable or chocking at wheels at the end of the workday.
(2) Containers containing debris or waste shall be covered at the end of the workday and when full to near the rim.
(3) Containers need not be covered when not in use or while stored in a fully enclosed space at the end of the workday.

(f)*Containers for the storage of debris.*
(1) Sufficient containers of metal, canvas, plastic or other material acceptable to the commissioner shall be available.
(2) The containers shall be of three-quarter cubic yard minimum capacity.
Containers of one-half cubic yard minimum capacity may be used so long as the total capacity of the containers at the construction site is not less than that required by this subdivision (f)(2).
(3) The Commissioner may accept alternate container sizes to function with the building's size.

§26-04 Use of Reshores During Construction Operations.

(a) *Applicability*. Pursuant to subdivision (f) of §27-1035 of the Administrative Code, reshoring shall be provided where forms and shores are stripped before concrete has gained adequate strength to support the superimposed loads due to construction above. Paragraph (1) of subdivision (f) specifies a prohibition on the use of wedges within ten feet of a facade and such other locations as determined by rules and regulations.
(1) *Definition.* Shores are defined as vertical or inclined falsework supports.
(2) *Stripping*. Removal on the floor of any parts of the concrete formwork including shoring, bracing and other supports shall be considered as stripping.
Waste debris as a result of stripping operations shall be immediately contained and removed at reasonable intervals.

(b) *Formwork*.
(1) *Form design drawings*. Form design drawings shall be available to the Commissioner as per subdivision (c) of §27-1035.
(2) *Records*. Records shall be available for inspectors per subdivision (b) of §27-1035.
(c) *Installation limitations* - reshores.
(1) Reshores shall be perpendicular to the surface which they are supporting.
(2) Reshores of wood or metal shall be screw adjusted or jacked and locked and wedged to make them secure.
(3) Wedges shall not be used within ten feet of the facade of a building.
(4) Adjusting devices shall not be used if heavily rusted, bent, dented, rewelded or having broken weldments or other defects.
(5) Metal shoring and accessory parts shall be fully operative when in use.
(6) Reshores within ten feet of the facade of a building shall be secured to prevent them from falling off the building.

(d) *Specific safety provisions*.
(1) Extra shores or material and equipment that might be needed in an emergency shall be furnished.
(2) Care shall be taken while stripping is underway to insure that material does not fall off the building.
(3) Building materials shall be properly piled and tied or contained.

APPENDIX A

The Department of Buildings Manual for Site Safety Programs May, 1988

A. Purpose.

This "Manual" outlines the requirements of the site safety programs submitted to the Department of Buildings pursuant to Local Law 45 of 1983, Local Law 61 of 1987 and the rules and regulations relating to the filing of site safety programs, dated September 23, 1986, as set forth in Subchapter 19 of Chapter 1 of Title 27 of the Administrative (Building) Code. The requirements include a schedule of specific duties and responsibilities for the site safety manager and other items that are to be set forth in a site safety program. They are not intended, however, to supersede any requirements of the Building Code, or rules and regulations promulgated by the Buildings Department or any other city, state or federal agency, pertaining to site safety and other construction activity.

B. Scope.

Site Safety program requirements shall apply to all construction projects that have the following scope of work:

1. The construction of a major building, which is defined as either 15 or more stories, or 200 feet or more in height.
2. 100,000 square feet or more of lot coverage regardless of height.
3. The alteration of the facade of a major building, when a sidewalk shed is required.
4. As designated by the Commissioner of the Department of Buildings.

C. Designation of Site Safety Manager.

In accordance with §27-1009 of the Administrative (Building) Code, unless otherwise determined by the Commissioner, it shall be the responsibility of the builder/owner, agent, the construction manager or the general contractor (the "Contractor") to designate a construction site safety manager who must be present on a construction site for those projects that are within the scope of this program, as defined above, and who shall be responsible for all site safety requirements as specified in the site safety program and Subchapter 19 of Chapter 1 of Title 27 of the Administrative Code.
In the event that an alternate manager will be acting as the full-time safety manager for a period longer than two weeks, the Department of Buildings must be so notified. Any permanent change of site safety manager requires immediate notification of the Department of Buildings.

D. Site Safety Manager Qualifications.

Individuals eligible for designation as site safety manager shall meet one of the following requirements: (1, 2, or 3).

1. a. New York State Licensed Professional Engineer or Registered Architect, or a person with eight years of construction supervision experience including five years of such experience with major buildings, and
b. Certification that the person has satisfactorily completed an orientation course approved by the Department of Buildings of no less than 5 hours in duration and passed a written examination given by the N.Y.C. Department of Personnel covering Subchapter 19 of Chapter 1 of Title 27 of the Administrative Code,[*sic*] and the duties of site safety manager as detailed in Local Law 45 of 1983; or

2. a. Satisfactory equivalent of experience and/or education, as determined by the N.Y.C. Department of Personnel, and
b. Certification that the person has satisfactorily completed a

40-hour course approved by the Department of Buildings and passed a written examination given by the N.Y.C. Department of Personnel covering Subchapter 19 of Chapter 1 of Title 27 of the Administrative Code and the duties of a site safety manager; or

3. a. Completion of an on-the-job training program under a currently certified site safety manager. Such training shall cover all aspects of site safety management and all phases of building construction, from the commencement of construction until the building is completely enclosed, and shall last a minimum of 18 months. Each month, the site safety manager shall summarize the trainee's activities in the site safety log or other record, and shall certify as to the trainee's satisfactory completion of the training program; and

b. Certification that the person has satisfactorily completed a 40-hour course approved by the Department of Buildings and passed a written examination given by the N.Y.C. Department of Personnel covering Subchapter 19 of Chapter 1 of Title 27 of the Administrative Code and the duties of a site safety manager.

4. All individuals approved by the Department of Buildings as site safety coordinators prior to July 1, 1985 shall be required to complete the 40 hour orientation course and pass the written examination given by the N.Y.C. Department of Personnel, but shall not be subject to the Personnel Department's subsequent review of qualifications.

5. Site Safety Manager Certificates shall be issued by the Department of Buildings in accordance with the regulations relating to the filing of site safety programs. A copy of the Site Safety Manager Certificate for the proposed site safety manager (and alternate manager, if any), shall be included with the contractor's submission of its site safety program. No proposed alternate manager shall have as his or her primary duty the job of site safety manager on any other construction project.

E. Statement of Contractor's Policy.

1. The Contractor agrees that it shall appoint a qualified site safety manager who shall be assigned the responsibilities described in the Contractor's site safety program submitted to the Department of Buildings pursuant to Local Law 45 of 1983. The site safety program will incorporate the provisions of this site safety manual as required as per §26-01(d) of the Rules and Regulations of the Department of Buildings, effective [September 23, 1986.]*

*** Copy in brackets not enacted but probably intended.**

The contractor also agrees that it shall notify all of its supervisory personnel and all of its subcontractors working on the construction site of the name and responsibilities of the site safety manager.

It shall state to its directly employed personnel and also to its subcontractors that the site safety manager is responsible for monitoring compliance with the Buildings Department regulations dealing with site safety and that they are required to obey and implement all orders and directives relating to safety requirements.

2. The contractor also agrees to inform the site safety manager that, in the event he or she discovers a violation of the site safety regulations, he or she should immediately notify the person or persons responsible for creating the violation, whether these persons are employed by the Contractor or by subcontractors. If the site safety manager is unable to obtain the cooperation of these persons in correcting the violation, he or she will be instructed to inform his or her direct supervisor immediately and request that the supervisor order the necessary corrective action. If the supervisor of the site safety manager is not present at the site or otherwise available, the site safety manager will be told to notify any other supervisory personnel of the Contractor present on the job or any other responsible manager or officer of the Contractor.

F. Contractor's Responsibility.

It shall be the responsibility of all general contractors, construction managers and subcontractors engaged in building work to institute and maintain safety measures and provide all equipment or temporary construction necessary to safeguard the public and property affected by their operations.

G. Site Safety Manager's Responsibility.

1. In addition to other safety duties assigned by the owner or contractor to meet the federal and state requirements, it shall be the responsibility of the site safety manager to monitor compliance with the safety requirements of Subchapter 19 of Chapter 1 of Title 27 of the Administrative (Building) Code. At a minimum, this requires that the manager, as a representative of the owner, his agent, the general contractor and/or construction managers, meet on a weekly basis with the designated representative of each subcontractor to ascertain that they are complying with the provisions of Subchapter 19 of Chapter 1 of Title 27 of the Administrative Code when the scope of the subcontractor's work at that time falls within the Subchapter.

2. The site safety manager shall immediately notify the Chief Inspector of the Building Enforcement Special Team directly if he/she discovers any of the following in the routine performance of the job:

a. a person is operating a crane, derrick or hoisting equipment on the construction site without a permit and refuses to desist from operating the crane;

b. that crane is being operated by an unlicensed operator and said unlicensed operator refuses to desist from operating the crane;

c. no flagmen present during crane operation where required by the Building Code;

d. sidewalk sheds required by the site safety plan are not in place during construction activity;

e. permits have not been issued for the sidewalk sheds;

f. the designer and/or supplier of sidewalk sheds has not certified that the sheds have been erected in accordance with the approved plans;

g. an accident involving the public, or private or public property has occurred.

3. Upon proper notification of the Department of Buildings of the existence of any of the above noted circumstances, any liability the site safety manager has or may have under the Building Code arising out of, relating to, or as a result of the existence of that circumstance, shall cease.

4. It shall be the responsibility of the site safety manager to inspect personally, on a regular basis, specific areas and items, identified below, and to notify responsible personnel employed by the general contractor, construction manager or any subcontractor when violations of Subchapter 19 of Chapter 1 of Title 27 of the Administrative Code or the Subchapter 19 Site Safety Program have occurred.

5. The site safety manager shall ensure that all daily entries

in the site safety log are completed. These entries must be recorded by 7:00 a.m. on the day following the activities.

6. An example of a log sheet and permit log are attached as Appendix A and B.

7. The site safety manager, or alternate, shall sign the log at the beginning of each day, and must be present at the job at all times during ongoing construction. If at any point during the day the site safety manager, or alternate, shall be relieved of his/her responsibilities at the construction site, or leave the site for any reason he/she shall indicate this in the log, and an alternate shall sign in.

8. The site safety manager shall make periodic inspections of the construction site in accordance with the schedule in the following chart to determine that the conditions at the site meet the public safety requirements of Subchapter 19 of Chapter 1 of Title 27 of the Administrative Code.

H. Items to be recorded in Site Safety Log.

1. Details of areas inspected by the site safety manager.

2. Companies and representatives met with weekly to ascertain their Subchapter 19 compliance.

3. Any unsafe acts and/or conditions. (dates and locations).

4. Companies and representatives notified of unsafe acts and/or conditions.

5. Dates of notification of unsafe acts and/or conditions.

6. Dates of correction of unsafe acts and/or conditions.

7. Any accident the public or damage to public or private property.

8. Any violations, stop work orders or summonses issued by the Department of Buildings, including date issued and date lifted or dismissed.

9. Dates and location where horizontal and vertical netting has been installed, replaced and/or repaired.

10. Date horizontal safety netting is removed.

11. Date when building reaches a height of 75 feet.

12. Any equipment brought onto the job which requires permits, including a description of the equipment, where it is to be located, permit number, issue and expiration date of the permit, and certificate of inspection, if required, shall be entered on a Permit Log.

I. Periodic Site Safety Inspections.

1. General Requirements for Site Safety

Construction Sites	Minimum Schedule of Inspections
a. When the building reaches a height greater than 75 feet at least one elevator or personal hoist with an emergency communication system shall be kept available for use at all times as per Fire and Building Department requirements.	As appropriate
b. When the personnel hoist requires a jump, all necessary permits must be obtained and testing performed.	As appropriate
c. When the building reaches a height greater than 75 feet, a standpipe system shall be available and in readiness at all times for Fire Department [*sic*] use.	Daily
1. Valves shall be in place at each story below construction floor.	As appropriate
2. Standpipes shall be connected to water source and siamese connection.	Periodic
3. Siamese hose connections shall be kept free from Obstruction and shall be marked by a sign reading. "Standpipe Siamese Connection," and by a red light.	Daily
d. The construction shed shall be constructed of noncombustible materials if located within 30 feet of the building.	Once per shed
e. Interior and exterior guard rails and toeboards shall be provided and properly installed to meet the standards as described in the Administrative (Building) Code §27-1050.	Daily
f. All openings and/or holes in the floor must be covered at all times.	Daily
g. All stairwells must have standard handrails.	Daily
h. Each sign as required in the Administrative (Building) Code §27-1009(c) shall also contain the telephone number of B.E.S.T. and the Emergency Squad.	Once per sign
2. Safety Netting.	
a. Horizontal safety netting shall be maintained not more than two stories below the stripping operation floor on concrete structures or uppermost finished and walkable concrete floor on steel frame structures, providing that such floor is more than six stories or such floor is seventy-five feet in height above the adjoining ground or adjourning roof level, whichever is applicable.	Daily
b. Horizontal safety netting shall project outward horizontally From the edge of the floor a minimum distance of ten feet.	Daily
c. The horizontal safety netting may be omitted in designated crane and derrick lifting areas as it is indicated and approved on the crane application and on the site safety plan.	Weekly
d. For steel frame construction where the steel frame extends more than eight	Daily

	stories above the walkable concrete floor, vertical safety netting shall be provided at the floors at and below the topmost working metal deck, where this deck is substantially completed and the required guard rails and toeboards are in place.	
e.	Vertical safety netting shall be provided at all floors below the floor on which horizontal netting is required.	Daily
f.	Vertical safety netting shall be maintained at each story except for the story at grade, the story immediately above the sidewalk shed and the uppermost level.	Daily
g.	Vertical safety netting shall be secured and kept closed at all times except during actual loading operations or perimeter construction operations.	Daily

3. Maintenance of site and adjacent areas.

a.	Guards, shields or barricades shall surround all exposed, electrically charged, moving or otherwise dangerous parts of machines and construction equipment so as to prevent contact with the public.	Daily
b.	There shall be no exposed hose lines, wire, ropes etc., that may constitute a tripping hazard to the public.	Throughout day
c.	Adjoining property shall be protected when the height of build ing exceeds that of adjoining property.	Daily
d.	If the building is erected, enlarged or increased in height so that any portion of such building, except chimneys or vents, extends higher than the top of any previously constructed chimneys within 100 feet the chimneys must be made to conform with §27-860 of the Administrative Code.	As Appropriate

4. Housekeeping.

a.	All areas used by the public shall be maintained free from ice, snow, grease, debris, equipment, materials, projections, tools or other items substance or conditions that may constitute a slipping, tripping or other hazard.	Throughout day
b.	Floors and stairs shall be cleaned [*sic*] of excess debris.	Throughout day
c.	[*sic*] When not in use, equipment and tools shall be kept away from edges or openings.	Throughout day
d.	[*sic*] The roof of the sidewalk shed and the street shall be cleaned of debris	Daily
e.	[*sic*] Sufficient containers for the storage of garbage and debris shall be in place.	Daily
f.	[*sic*] Containers shall be covered when full and secured.	Daily

5. Removal and storage of material.

a.	Combustible waste material or combustible debris shall be removed from the site.	Daily
b.	Chutes, when used for the removal of debris, shall be installed and maintained in accordance with §27-1019 of the Administrative Code.	Weekly
c.	When exterior walls are not in place, stored material shall be kept at least ten feet back from the perimeter of the building. If the floor area is less than one thousand square feet, stored material may be kept not less than five feet back from the perimeter of the building.	Daily
d.	Material stored on floors of a building shall be secured when not being used.	Daily
e.	Material may be stored to within two feet of the edge of the building only on the upper working floors located not more than two stories below the stripping operation on concrete structures or on the uppermost concrete floor on steel structures.	Daily
f.	No material shall hang over the edge of a building unless banded and braced preparatory to relocation prior to the end of the workday.	Daily
g.	Where such material is so banded and braced it may overhang the floor of the stripping operation by not more than one-third of its length so long as it is relocated by the next workday for concrete operations.	Daily
h.	Where the steel mill and lumber mill are located, material may overhang for relocation until the next workday. Maximum number of floors designated as steel mills [*sic*] or lumber mills [*sic*] is two.	Daily

6. Protection of sidewalks.

a.	Permits for sidewalk sheds shall be in effect and posted in a central, visible area.	Periodic
b.	Approved drawings of the sidewalk shed shall be at the construction site.	Periodic
c.	The designer and/or supplier of sidewalk sheds shall certify that such sheds have been erected in accordance with the approved plans and that a Form B-23 has been filed with the Department of Buildings.	Once

d.	Sidewalk sheds shall remain in place until the structure is en closed, all exterior work completed, the sash is glazed above the second story, the exterior of the facade is cleaned down, all outside handling of material, equipment and machinery is completed and dismantling of a material hoist, tower or climber crane, or the use of a derrick in their removal above the second story, is completed.	Weekly
e.	All openings in sidewalk sheds, fences and railings for loading purposes shall be kept closed, barricaded, protected or guarded at all times.	Throughout day
f.	Sidewalk sheds shall extend the entire perimeter of the building.	Once
g.	When the building exceeds 100 feet in height, sidewalk sheds shall extend 20 feet beyond the side property line.	Once
h.	Sidewalk sheds shall be illuminated at night by the equivalent of 100-watt bulbs spaced 15 feet apart at a minimum height of 8 feet above floor.	Daily
i.	Any temporary footbridges and walkways for the public shall be maintained at a width of at least 4 feet.	Daily as appropriate

7. Warning signs and lights.

a.	All dangerous and hazardous areas to the public or areas where work is performed near vehicular traffic shall be marked appropriately with warning signs and lights.	Daily
b.	Other steps necessary to protect the public shall be taken, including provisions for flagmen whenever intermittent operations are conducted on or across areas open to the public or when dangerous operations, such as blasting, may affect such areas.	Throughout day as appropriate

8. Scaffolds, structural ramps, runways and platforms.

a.	Where it poses a risk to the public all structural ramps, scaffolds, runways and platforms shall be provided with standard rails, toeboards, screening, or nets, unless otherwise specified in the Building Code [*sic*].	Daily

9. Material handling and hoisting equipment.

a.	Certificates of approval, operation and on site inspection for all cranes, derricks and/or cableways shall be obtained and available for inspection at the construction site.	As required
b.	Permits for highway and street closings shall be available at the construction site.	As required
c.	Licenses of crane operators shall be available at the construction site.	Daily
d.	Cranes shall be jumped, as needed, in accordance with the schedule submitted by the professional engineer and approved by the Department of Buildings.	As Appropriate
e.	A means of communication shall be arranged and put into effect between the responsible parties when the operator of hoisting machinery has no vision of the lift or loading areas	Daily when operational
f.	A program shall be established and operational for the control of pedestrian and/or vehicular traffic around the construction site during all lifting and hoisting operations.	Daily when operational
g.	Flagmen shall be required to stop pedestrian and/or vehicular traffic during the following intermittent operations: 1. All lifting and hoisting operations; 2. Trucks entering and exiting site; 3. Materials being lifted over sidewalk shed; 4. Dangerous operation, e.g., blasting; 5. When sidewalk and/or street is temporarily closed.	As Appropriate

10. In addition to the above schedule, the site safety manager shall use reasonable prudence to ensure that safety is maintained at the job site as job conditions and Contractor's Statement of Policy dictate.

J. General notes for site safety plan.

Site Safety plans at a minimum shall include the following:

1. Location of all construction fences around job site;
2. Location of all gates in fences;
3. Location of guard rail around excavation during excavation, when required; [*sic*]
4. Horizontal and vertical netting program, including details of the initial installation, schedule of horizontal jumps and vertical installations, and designated crane and derrick lifting areas where horizontal netting is omitted;
5. Location of sidewalk sheds;[1]
6. Location of temporary walkways;[1]
7. Location of foot bridges and motor vehicle ramps;[1]
8. Protection of side of excavation, when required;[1]
9. Location of street and sidewalk closing(s);[1]
10. Approximate location of material and personnel hoist(s) and loading areas;[1]
11. Approximate location of all crane and derrick loading areas; [1]
12. Location of surrounding buildings, indicating occupancy,

noncombustible enclosure having a fire-resistance height and type of roof protection, when required;

13. Location of standpipe system and siamese hose connections;

14. Location of temporary elevators for Fire Department use when building is above 75 feet in height;

15. Location of all exterior contractors' sheds;

16. Safety netting and scaffolding when required by §27-1022 of the Administrative Code;

17. Sidewalk and roadway widths and all traffic information and all exits from job site;

18. Specific case reconsiderations in relation to requiring safety netting during construction operations are to be attached and the revised site safety plan shall be approved.

1. Indicate appropriate Department of Buildings application numbers and/or Department of Transportation permit numbers and expiration dates.

NOTE: Location of cranes-derricks and hoists, etc. may be entered on site plan as indicated on the Department of Buildings application and number by the Site Safety Manager and signed by the inspector when checked against the Department of Buildings application number during inspection.

CHAPTER 27 SIGNS

§27-01 Stair and Elevator Signs in Buildings Which Have at Least One Elevator.

(a) *Applicability.*

These rules and regulations shall apply to all buildings which have at least one elevator including:

(1) Any existing office buildings occupied or arranged to be occupied for an occupant load of more than one hundred (100) persons above or below the street level or more than a total of five hundred (500) persons in the entire building, and

(2) All other existing buildings which have at least one elevator, pursuant to §27-390 of the Administrative (Building) Code, as enacted by Local Law 16 of 1984.

(b) *Signs at elevator landings.*

(1) *Elevator landing sign.* On all floors other than the main entrance floor, a sign shall be posted and maintained on every floor at the elevator landing. The sign shall read "IN CASE OF FIRE, USE STAIRS UNLESS OTHERWISE INSTRUCTED".

(2) *Floor diagram sign.* The sign shall contain a floor diagram showing the location where it is posted and the location and letter identification of the stairs on the floor and each elevator bank.

(3) *J-2 multiple dwellings.* The floor diagram sign may be omitted on all residential floors in J-2 multiple dwellings provided that:

(i) The stair is in the line of sight from the elevator call button, and

(ii) The stair is located a maximum of twenty (20) feet from the elevator call button, and

(A) There is not more than one stair, or

(B) Two scissors [*sic*] stairs, or

(C) A stair or fire escape serves only an individual apartment and directional signs with arrows and reading "TO STAIRS" are provided.

(c) *Location.* The sign(s) shall be located:

(1) Directly above the call button, and

(2) Its top shall not be above six (6) feet from the floor level.

(3) The sign(s) may be placed on the wall or an adjacent conspicuous place where there is insufficient wall space at the call button, or

(4) The sign(s) may be placed on the elevator door(s) where there is insufficient wall space or an adjacent conspicuous place at the elevator landing.

Exception: Raised signs on horizontal sliding flush type elevator doors.

(d) *Floor number sign(s).* Floor numbering sign(s) shall be posted and maintained within each stair enclosure on every floor. The floor numbering sign shall be posted and maintained on the stair side of the door, or if no door, nearby on the wall or an adjacent conspicuous place.

(e) *Stair and elevator identification signs.* Each stair and each bank of elevators shall be identified by an alphabetic letter. A sign indicating the letter of identification for the elevator bank shall be posted and maintained at each elevator landing directly above or as part of the sign specified in §27-01(b). The stair identification signs shall be posted and maintained on the occupancy and stair sides of the door, or if no door, nearby on the wall or an adjacent conspicuous place.

(f) *Stair re-entry signs.* Stair re-entry signs shall be posted and maintained on the stair door at each floor in buildings classified in Occupancy Group E, occupied or arranged to be occupied for an occupant load of more than a total of 500 persons in the entire building indicating re-entry is provided. The signs shall be attached approximately five feet above the floor. The signs shall read as follows and may be either independent or combined with the corresponding sign required by §§27-392 and 27-393:

(1) Where no re-entry is provided:

(i) Where no re-entry is provided from the stairs to any floor, the sign shall read "NO RE-ENTRY FROM THIS STAIR" and such sign shall be posted and maintained on the occupancy side of the stair door at each floor. No re-entry sign shall be required on the stair side of the door.

(ii) On every floor where fail-safe [*sic*] re-entry locking devices are installed on exit doors, a sign reading "NO RE-ENTRY FROM THIS STAIR EXCEPT DURING FIRE OR EMERGENCY" shall be posted on the occupancy side of the stair door.

(2) Where re-entry is provided to specified floors:

(i) On the stair side of the door at floors where re-entry is provided, the sign shall read "RE-ENTRY ON THIS FLOOR".

(ii) Where no re-entry is provided on that floor, the sign on the stair side of the door shall read, "NO RE-ENTRY, NEAREST RE-ENTRY ON THE_AND FLOORS". The floor numbers of the nearest re-entry below and the nearest re-entry floor above shall be entered in the blank spaces

(g) *Size of signs.*

(1) Signs for new buildings shall be limited to combined elevator landing and floor diagram signs, conforming with paragraph (4) below. Signs for existing buildings in Occupancy Group J-2 may be either independent signs as required or combined signs, conforming with the size requirements as set forth in the following subdivisions.

(2) *Elevator landing signs*. Elevator landing signs shall be at least two and one-half (2 1/2) [*sic*] inches by ten (10) inches.

(3) *Floor diagram signs*. Floor diagram signs shall be at least eight (8) inches by twelve (12) inches.

(4) *Combined elevator landing and floor diagram signs*. Combined elevator landing and floor [***sic***] diagram signs shall be at least ten (10) inches by twelve (12) inches.

(h) *Lettering and coloring of signs.*

(1) Lettering and background shall be in contrasting colors.

(2) Lettering shall be of bold-type and properly spaced to provide good legibility.

(3) The lettering and numerals of the signs shall be at least one-half inch high, except that:

(i) Floor numbering sign numerals shall be at least three inches high.

(ii) Elevator identification sign letters shall be at least three inches high.

(i)*Material for signs.*
(1) Signs shall be of metal or other durable materials.
(2) Fire resistive pressure sensitive vinyl decals may be permitted if the plastic is printed on the reverse side.

(j)*Attachment of signs.* Signs shall be securely attached to the wall or partition.

(k) *Signs in existing buildings.*
(1) Signs installed prior to March 27,1984 may be accepted by the Commissioner, provided that such signs will adequately accomplish the intended purpose.
(2) In buildings existing prior to March 27,1984, the Commissioner may modify the requirements as to location of signs where compliance would cause practical difficulty or undue hardship.
(3) All existing buildings not already subject to the requirements of Local Law 5 as of January 18, 1983 shall comply with these requirements on or before October 1, 1985.

(l)*Compliance date.* Signs shall be installed on or before October 1, 1985.

(m)*Report of compliance.* Owners shall file a report with the Department of Buildings certifying that they have posted the signs in compliance with the Building Code requirements on or before October 1, 1985.

§27-02 Caution Sign Tapes Required on Elevators Being Serviced.
(a) In all buildings, when an automatic passenger elevator is being serviced by an elevator maintenance company, elevator maintenance personnel or other persons and there are no maintenance personnel available to remain in the elevator car, "CAUTION" sign tapes shall be placed across the car door jamb. One strip of "CAUTION" sign tape shall be placed at a height of eighteen (18) inches from the car floor and another strip of "CAUTION" sign tape shall be placed at a height of fifty-four (54) inches above the floor.
(b) The "CAUTION" sign tape shall be three (3) inches in width with the words "CAUTION - DO NOT ENTER" repeated every six (6) inches. The lettering shall be black on yellow background. The letters shall be at least two (2) inches high.

§27-03 Signs on any Sidewalk Shed, Fence, Railing, Footbridge, Catch Platform, Builder's Sidewalk Shanty, and Over-the-Sidewalk Chute Erected at Demolition or Construction Sites.
(a) *Applicability.* These rules and regulations shall apply to all protective structures erected at demolition or construction sites, including but not limited to, sidewalk sheds, fences, railings, footbridges, catch platforms, builder's sidewalk shanties, and over-the-sidewalk chutes as specified in Administrative Code §26-252(a).
(a) Other than the signs required by 1 RCNY §§8-01 and 26-01 or as set forth below, there shall be no information, pictorial representations, or any business or advertising messages posted on such protective structures at demolition or construction sites.
(c) *Required shed sign.* Where a sidewalk shed is erected and a sign is posted in compliance with Administrative Code §27-1021(a)(1)(b), the information shall also include the Department of Buildings' Complaint Telephone Number and whether the shed is a heavy duty sidewalk shed or light duty sidewalk shed as defined in 1 RCNY §8-01(a)(2). If the shed is for light duty use, the sign shall include the statement that storage is not permitted on the shed.

(d) *Signs.* A sign may be posted on such protective structure when the structure is adjacent to any building and obscures from view a lawful and existing sign and shall comply with the following requirements:
(1) Signs shall be securely fastened to the face of the protective structure at a location directly in front of such business storefront;
(2) No projecting signs shall be permitted, and all signs shall be limited to a maximum height of three feet six inches and when affixed to a sidewalk shed, shall not project above the parapet;
(3) No signs shall be permitted on the ends of any protective structure, unless the lawful and existing sign would otherwise be obscured from view by a deck or parapet of a sidewalk shed or bridge; and
(4) No sign shall project below the deck of any sidewalk shed.

(e) *Materials.* Such signs shall be constructed of three-fourths inch plywood or sheet metal.

(f)*Area and height limitations.* The maximum height for the erection of such sign shall comply with the applicable zoning regulations, statutes and these rules, and in no event shall the height of such sign be greater than three feet six inches.
(g) *Non-illumination.* No illuminated signs shall be permitted on any protective structure subject to this rule.

§27-04 311 Advisory Signs Required on Construction Sites.
(a) *Applicability.* Pursuant to subdivision (a) of Section 27-1009 of the Administrative Code, at least one sign shall be placed at any site of construction for which a New Building or Demolition permit is required. Such sign(s) shall contain the words "TO ANONYMOUSLY REPORT UNSAFE CONDITIONS AT THIS WORK SITE, CALL 311" (referred to herein as a "311 advisory sign") in both English and Spanish.
(b) *Location.* 311 advisory signs shall be placed at a height no more than twelve feet above ground and shall be prominently placed on each perimeter of a construction site fronting on a public thoroughfare.
(c) *Visibility.* The letters on 311 advisory signs shall be black on white background and be no less than six inches high.

CHAPTER 28 SMOKE DETECTING DEVICES AND SYSTEMS AND CARBON MONOXIDE DETECTING DEVICES AND SYSTEMS

§28-01 Required Smoke Detecting Devices and Systems.
(a) *Applicability.* (1) Local Law 62 for the year 1981 requires that all existing dwelling units within Occupancy Group J-1 (which includes Hotels, Motels, Lodging Houses, and Rooming Houses) and Occupancy Group J-2 (which includes Apartment Houses, Apartment Hotels and School Dormitory Buildings), and new buildings or substantially improved or altered buildings in Occupancy Group J-1, J-2 and J-3 (the latter includes One and Two Family Dwellings, Rectories, Convents and Group Homes) to be equipped with approved smoke detecting devices, except such units which contain operational automatic wet sprinkler systems.
(2) The devices shall be operational in existing Occupancy Groups J-1 and J-2 by January 1, 1982; however, the Commissioner may upon good cause shown extend the period of compliance to June 30, 1982. Appeals to the Commissioner for extension of the period of compliance shall be set forth on a form to be available and filed at the Office of the Commissioner, (Attention: The Executive Engineer), Department of Buildings, 60 Hudson Street New York, N.Y. 10013, [*sic*] no later than December 1, 1981, and contain the following information:

(i)The location of the premises, block and lot, the Building Department Application number, if any, the Construction and Occupancy Class, number of dwelling units, estimated number of detectors, type, and where they are to be installed.

(ii) The hardship to be considered with regard to the delivery or installation of the equipment.

(iii) The proposed time table for compliance.

(iv) A copy of the signed contract for the purchase and/or installation of the system. (Cost figures may be deleted).

(v) The application number, as appropriate.

(3) The Commissioner will not consider "good cause" appeals unless:

(i) The installation is wired into the building's electrical system, or

(ii) The number of units in single ownership or management responsibility exceed 500, and a complete schedule for installation is submitted prior to January 1, 1982, or

(iii) Special circumstances not covered by subdivisions (i) or (ii) above are involved.

(4) Notice of approved extensions are to be forwarded to the Commissioner of the Department of Housing Preservation and Development.

(5) The requirements for new buildings within Occupancy Group J-3 and new or substantially improved or altered buildings in Occupancy Group J-1, J-2, or J-3, shall only apply to those for which plans are Approved by the Department of Buildings on or after January 1, 1982.

(b) *Installation—new, existing and altered buildings*. (1) Dwelling units shall be equipped with smoke detecting devices receiving their primary power from the building wiring, and there shall be no switches in the circuit other than the overcurrent device protecting the branch circuit.

(2) However, dwelling units in existing buildings may, in the alternative, be equipped with battery-operated smoke detecting devices except where such buildings are substantially improved or altered on or after January 1, 1982.

(3) An existing building is one which is within either Occupancy Group J-1 or Occupancy Group J-2 for which plans have been approved by the Department prior to December 31, 1981.

(4) A building shall be deemed to have been substantially improved or altered if

(i) the cost of improvement or alteration exceeds the sum of $150,000 or

(ii) 50 percent or more of the dwelling units or square feet of the structure are improved or altered and the cost of such improvement or alteration exceeds the sum of $15,000 per dwelling unit or

(iii) there has been a change in the occupancy or use of the entire structure.

(5) In applying the foregoing provisions where cost is the factor, items falling within the scope of minor alterations or ordinary repairs, as set forth in §§27-124 and 27-125 of the Administrative Code, thereby exempt from permit requirements based on §27-147, as well as any other cost associated with any matters that are not regulated by the Building Code are not included within calculation of the cost, as well as minor applications filed pursuant to Directive 14/75, or for any other miscellaneous applications referred to in §§27-148 (c) to (h).

(6) Cost of alterations are not cumulative, provided any application filed with this department is signed off as satisfactorily completed prior to the filing of a subsequent application; and, if a Certificate of Occupancy is involved that a final Certificate of Occupancy has been issued for the pertinent application.

(c) *Equipment requirements*.

(1) Section 27-981 of the Administrative Code provides that all smoke detecting devices required to be provided and installed shall either be approved by the Board of Standards and Appeals, accepted pursuant to Rules and Regulations promulgated by the Commissioner, or be listed by a Nationally Recognized Independent Laboratory that:

(i) Maintains periodic inspections of production of listed equipment.

(ii) States in its listing that the equipment meets nationally recognized standards.

(iii) Maintains a periodic follow-up service of the devices to ensure compliance with the original listing.

(2) The following is the current list of Acceptable Testing Laboratories:

Underwriters' Laboratories, Inc.
333 Pfingsten Road Tele: (312) 272-8800
Northbrook, Illinois 60061 MEA Laboratory No. 1-69-L
Canadian Standards Association
178 Rexdale Boulevard Tele: (416) 744-4316
Rexdale, Ontario M9W IR 3 Canada MEA Laboratory No. 25-69-L
Underwriters' Laboratories of Canada
7 Crouse Road Tele: (416) 757-3611
Scarborough, Ontario MIP 3AP Canada MEA Laboratory No. 81-80-L

(The Director of the Materials and Equipment Acceptance Division, who maintains the current list of MEA Acceptable Testing Laboratories, will be able to advise interested parties of any changes.)

(3) (i) The device shall be of either the ionization chamber or photoelectric type. The device shall be in compliance with the requirements of:

REFERENCE [*sic*] **STANDARD RS 17-11**

UL No. 217-1980—Single and Multiple Station Smoke Detectors.

The device shall be installed in a manner consistent with the requirements of:

REFERENCE STANDARD RS 17-12

ANSI/NFiPA No. 74-1980—Standard for the Installation, Maintenance and Use of Household Fire Warning Equipment, as Modified.

The following sections of this standard are modified to read as follows:

1-1 Scope. Covers the requirements for the proper selection, installation, operation and maintenance of fire warning equipment for use within dwelling units or rooming units.

1-2.6 The installation of wiring and equipment shall be in accordance with the New York City Electrical Code.

2-1.1.1 Smoke detectors shall be installed outside of each separate sleeping area in the immediate vicinity of the rooms used for sleeping purposes in dwelling units in Occupancy Group J-2 and J-3, and in basements and basement recreation rooms in Occupancy Group J-3.

Smoke detectors shall be installed within the sleeping area of hotel or motel units, rooming units or studio dwelling units in Occupancy Group J-1.

4-5.5 Each smoke detector shall have an integral test means to permit the occupant to check that it is operational. A continuous power display indicator light is recommended.

5-2.1.4 A smoke detector installed to protect a sleeping area

in accordance with 2-1.1.1 shall be located outside the rooms used for sleeping purposes, but in the immediate vicinity of the sleeping area, except as set forth for rooming units.

5-2.1.6 Smoke detectors shall be located on or near the ceiling and within fifteen feet of all rooms used for sleeping purposes in J-2 or J-3 occupancies. In all dwelling units with multiple levels, when any level has only one means of egress, the dwelling unit shall be provided with smoke detectors on all levels.

5-2.6.1 If ceiling mounted, the closest edge of the detector shall be a minimum of four inches from any wall.

5-2.1.6.2 If wall mounted, the closest edge of the detector shall be a minimum of four inches and a maximum of twelve inches from the ceiling.

(ii) The following sections of this standard are extracted for informational purposes:

3-3.1 Household fire warning equipment may be powered by a battery provided that the battery is monitored to assure that the following conditions are met:

(a) All power requirements are met for at least one year's life, including weekly testing.

(b) A distinctive audible trouble signal is given before the battery is incapable of operating (from aging, terminal corrosion, etc.) the device(s) for alarm purposes.

5-1.1.6 The supplier or installing contractor shall provide the owner with:

(a) An instruction booklet illustrating typical installation layouts.

(b) Instruction charts describing the operation, method and frequency of testing and proper maintenance of household fire warning equipment.

(c) Printed information for establishing a household emergency evacuation plan.

(d) Printed information to inform the owner where he may obtain, [*sic*] repair or replacement service and where and how parts requiring regular replacement (such as batteries or bulbs) may be obtained within two weeks.

NOTE: Owners of buildings in Occupancy Group J-2 are required to pass on all printed information as described in (b), (c) and (d) to the tenant who is responsible for maintaining the unit.

B-2.1 Where to locate the required smoke detectors.

B-2.1.1 The major threat from fire in a family living unit is at night when everyone is asleep. The principal threat to persons in sleeping areas comes from fires in the remainder of the unit; therefore, smoke detector(s) are best located between the bedroom areas and the rest of the unit. In units with only one bedroom area on one floor, the smoke detector should be located as shown in Figure B-2.1.1.

Figure B-2.1.1 A smoke detector (indicated by cross) should be located between the sleeping area and the rest of the family living unit.

B-2.1.2 In family living units with more than one bedroom area or with bedrooms on more than one floor, more than one smoke detector may be needed as shown in Figure B-2.1.2.

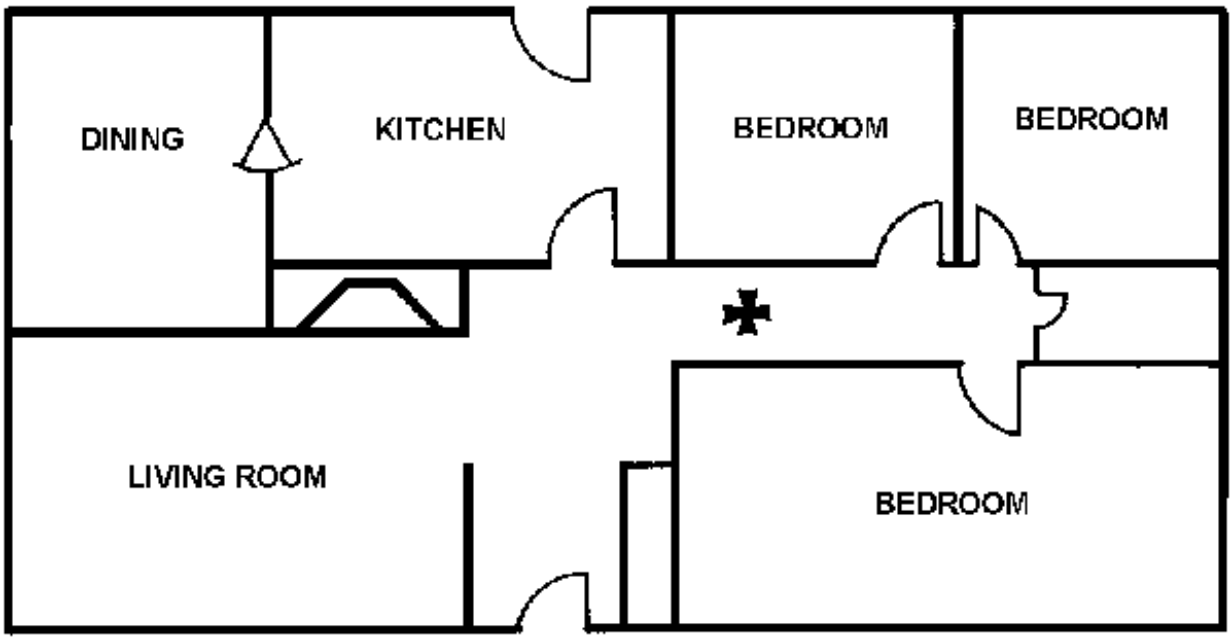
Figure B-2.1.2 In family living units with more than one sleeping area, a smoke detector (indicated by cross) should be provided to protect each, if the distant requirement of 5-2.1.6 is exceeded.

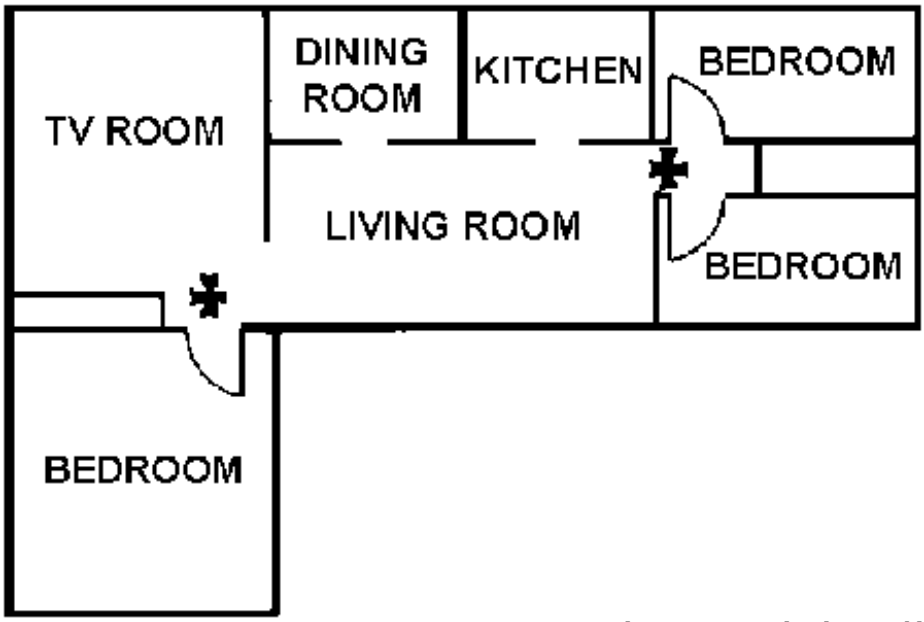
(4) (i) Buildings with Occupancy Group J-1 and including Class "B" Multiple [*sic*] Dwellings, may in the alternative be equipped with a line-operated zoned smoke detecting system with central annunciation and central office tie-in for all public corridors and public spaces.

(ii) Such system shall be in compliance with the requirements of the Division of Fire Prevention of the Fire Department and the following standards:

REFERENCE STANDARD RS 17-3

§13.—Automatic Heat and Smoke Detection System of the standards for the Installation of Fire Sprinkler, Standpipe Smoke Detection, Oxygen, Nitrous Oxide, and other Alarm and Extinguishing Systems.





REFERENCE STANDARD RS 17-5A

ANSI/NFiPA No. 72A-1979—Standard for the Installation, Maintenance and Use of Local Protective Signaling Systems for Guard's Tour, Fire Alarm and Supervisory Service.

REFERENCE STANDARD RS 17-5E

ANSI/NFiPA No. 72E-1979—Standard of Automatic Fire Detectors.

(iii) All devices and equipment shall be approved by the Board of Standards and Appeals.

(5) (i) For dwelling units to be equipped with smoke detecting devices receiving their primary power from the building wiring, a Licensed Electrician shall file an application for a Certificate of Electrical Inspection with the Bureau of Electrical Control, Department of Buildings at the address provided in the City's website, http://www.nyc.gov.

(ii) For buildings within Occupancy Group J-1 (Class "B" Multiple Dwellings) using the alternate provisions of Paragraph D of these Rules, the following shall apply:

(A) A Miscellaneous Application shall be filed in the Borough Office of the Department of Buildings, by a Registered Architect or Professional Engineer. All fees are to be paid.

(B) A duplicate set of plans and specifications are to be forwarded for examination, approval and inspection to the Electrical Section, Division of Fire Prevention, Fire Department, prior to the signing-off of the application.

(C) Notice of approvals shall be forwarded to the Commissioner of the Department of Housing and Preservation.

(6) No applications are required to be filed for installation of battery operated devices.

(7) It shall be the duty of the owner of a building in Occupancy Group J-2 (Class "A" Multiple Dwelling) to:

(i) Provide and install one or more approved and operational smoke detecting devices in each dwelling unit.

(ii) Post a notice in a form approved by the Commissioner of the Department of Housing Preservation and Development in a common area of the building, readily visible and preferably in the area of the inspection certificate, informing the occupants of such building, that the owner is required by law to install one or more approved and operational smoke detecting devices in each dwelling unit in the building, and that each occupant is responsible for the maintenance and repair of such devices and for replacing any or all such devices which are stolen, removed, missing or rendered inoperable during the occupancy of such dwelling unit.

(iii) Replace any smoke detecting device which has been stolen, removed, missing or rendered inoperable during a prior occupancy of the dwelling unit and which has not been replaced by the prior occupant prior to the commencement of a new occupancy of a dwelling unit.

(iv) Replace within thirty calendar days after the receipt of written notice any such device which becomes inoperable within one year of the installation of such device due to a defect in the manufacture of such device and through no fault of the occupant of the dwelling unit.

(v) File a certification of satisfactory installation within 10 days after completion with the Department of Housing Preservation and Development, Borough Division of Code Enforcement. This certification shall be set forth on a form available at the H.P.D. Borough Office.

(vi) Keep such records as the Commissioner of the Department of Housing Preservation and Development shall prescribe relating to the installation and maintenance of smoke detecting devices in the building and make such records available to the Commissioner of the Department of Housing Preservation and Development and/or the Fire Commissioner (or their representatives) upon request.

(8) It shall be the sole duty of the Occupant of each dwelling unit in a building in Occupancy Group J-2 (Class "A" Multiple Dwelling) in which a smoke detecting device has been provided and installed by the owner to:

(i) Keep and maintain such device in good repair; and,

(ii) Replace any and all devices which are either stolen, removed, missing or rendered inoperable during the occupancy of such dwelling unit.

NOTE: The occupant of a dwelling unit in which a battery operated smoke detecting device is provided and installed pursuant to this section shall reimburse the owner a maximum of ten dollars for the cost of providing and installing each such device. The occupant shall have one year from the date of installation to make such reimbursement.

(9) It shall be the duty of the owner of a building in Occupancy Group J-1 (Class "B" Multiple Dwelling) which is required to be equipped with smoke detecting devices to install and maintain such devices, and to keep such records as the Commissioner of the Department of Housing Preservation and Development

shall prescribe relating to the installation and maintenance of smoke detecting devices in each dwelling unit and make such record available to the Commissioner of the Department of Housing Preservation & Development and/or the Fire Commissioner, (or their representatives) upon request.

(10) In Occupancy Group J-1 all components of the line operated zoned detecting systems, with central annunciators and central office tie-ins shall be inspected and tested by qualified personnel holding a Fire Department Certificate of Fitness for testing and maintaining smoke detecting systems at intervals of not more than six months. In addition, trouble signals shall be tested daily and each sounding device monthly and records of such test be maintained.
For further information, refer to the Board of Standards and Appeals, Rules for Interior Fire Alarm Signal Systems, §8-01 of the B.S.A. rules.

(11) Smoke detecting devices and systems installed in accordance with the technical requirements of Divisions C, D and E after publication of this Notice of Opportunity to Comment, may at the option of the owner continue to be operated after the effective date of the promulgation, and modification of such devices and systems will not be required.

§ 28-02 Required Carbon Monoxide Detecting Devices and Systems.
(a) Definitions.
(1) The term "CO" means carbon monoxide.
(2) The term "CO alarm" means a "carbon monoxide alarm" as defined in RS 17-14, and shall also mean a "carbon monoxide detecting device" as such term is used in the Subchapter 17 of Chapter 1, and Subchapter 2 of Chapter 2, of Title 27 of the Administrative Code of the City of New York. Such CO alarms may be combined with smoke detecting devices provided that the combined unit complies with the respective provisions of the administrative code, reference standards and departmental rules relating to both smoke detecting devices and CO alarms.
(3) The term "dwelling unit" means one or more rooms in a dwelling or building that are arranged, designed, used or intended for use by one or more families, including such units in occupancy groups J-1 (hotels, motels, lodging houses, rooming houses, etc.), J-2 (apartment houses, apartment hotels, school dormitory buildings, etc.), and J-3 (one- and two-family dwellings, rectories, convents, group homes, etc.).
(4) The term "fossil fuel" means coal, kerosene, oil, wood, fuel gases and other petroleum products.
(5) The term "fuel gases" shall include, but not be limited to, methane, natural gas, liquified natural gas and manufactured fuel gases.
(6) The term "fossil fuel burning equipment" shall mean any furnace, boiler, water heater, fireplace, apparatus, appliance or device that burns fossil fuel, excluding household cooking appliances and household (Type 1) gas clothes dryers.

(b) Location of CO alarms.
(1) In buildings containing dwelling units, including dwelling units classified in occupancy group J-1 (hotels, motels, lodging houses, rooming houses), J-2 (apartment houses, apartment hotels, school dormitory buildings) and J-3 (one-and two-family dwellings, rectories, convents, group homes), CO alarms shall be located as follows:
A. CO alarms shall be installed for the following affected dwelling units:
i. Every dwelling unit located within a building that contains any fossil fuel burning furnace, boiler, or water heater as part of a central system;
ii. Every dwelling unit located within a building served by a central fossil fuel burning furnace, boiler or water heater that is located in an adjoining or attached building.
iii. If not already provided for by (i) or (ii) above, every dwelling unit on the same floor as, the floor below, and the floor above any other fossil fuel burning equipment that is located within the same building; and
iv. If not already provided for by (i) or (ii) above, every dwelling unit on the same floor as, the floor below, and the floor above any enclosed parking that is located in the same building.
B. When a CO alarm is required by 28-02(b)(1)(A), such CO alarms shall be installed within fifteen feet of the primary entrance to any room used for sleeping purposes. Where the dwelling unit comprises only one room (as in hotels), the CO alarm shall be installed within such room.
C. In J-1 occupancies, the owner may in the alternative elect to install a line-operated zoned CO detecting system with central annunciation and central office tie-in. Such system shall provide a CO alarm:
i. in all public corridors and public spaces at intervals specified by the manufacturer;
ii. in every room or space that contains a fossil fuel burning furnace, boiler or water heater;
iii. in every room or space adjacent to and on the same floor as the fossil fuel burning furnace, boiler or water heater;
iv. in every dwelling unit on the same floor as, on the floor below, and the floor above a room that contains a fossil fuel burning furnace, boiler or water heater;
v. in every dwelling unit connected by ductwork or ventilation shafts to a room that contains a the fossil fuel burning furnace, boiler or water heater; and
vi. in every dwelling unit on the same floor as, the floor below, and the floor above any enclosed parking that is located in the same building.
(2) In buildings classified in occupancy groups G and H-2, CO alarms shall be located as follows:
A. Occupied rooms and spaces. CO alarms shall be installed within such rooms or spaces where such rooms or spaces contain any fossil fuel burning equipment.
B. Sleeping rooms. CO alarms shall be installed within fifteen feet of the primary entrance to any room or space used for sleeping purposes in H-2 occupancies such as nursing homes, orphanages, and similar occupancies (except patient rooms in hospitals) located within a building containing any fossil fuel burning furnace, boiler, or water heater as part of a central system. Such CO alarms may be located in public corridors, provided that at least one CO alarm is located within 15 feet of the primary entrance to each sleeping room.
C. Non-occupied rooms and spaces. Supervised CO alarms shall be installed within such rooms or spaces where such rooms or spaces contain any fossil fuel burning equipment. However, in existing buildings classified in occupancy groups G and H-2 that are not substantially altered or improved as per § 28-02(d)(2)(A) of this rule, any required CO alarms may, at the option of the owner, be single-station CO alarms in compliance with the installation requirements of § 28-02(d)(2).

(c) Equipment Requirements.

(1) All CO alarms for occupancy groups J-1, J-2, J-3, G, and H-2 shall be in compliance with RS 17-13, however, for G and H-2 occupancies, the design professional may utilize CO alarms responding to a lower level of CO concentration (PPM) than the reference standard, subject to approval of the department and of the Fire Department of New York.

(2) For J-1 occupancies, all line-operated zoned CO detecting systems with central annunciation and central office tie-in shall also comply with the following:

A. The individual alarm that detects CO shall sound locally, and may, at the option of the owner, also sound other alarms on that zone or elsewhere in the building.

B. Each CO alarm shall report to a central station monitoring company approved by the Fire Department of New York as an "alarm signal" and shall be identified to the monitoring company as CO. CO alarm troubles shall be reported to the central station as a "trouble signal."

C. Such system shall be either:

i. powered and supervised by a fire alarm system, installed in accordance with RS 17-3, 3A, or 3B, and connected to a central station transmitter; such system shall comply with RS 17-14 §§ 5.3.7 and 5.3.9; or

ii. powered and supervised by a dedicated CO alarm system, installed in accordance with RS 17-3 and connected to a central station transmitter; such system shall comply with RS 17-14 § 5.3.9.

D. The CO alarms, control panels and central station transmitters of such systems must be approved by the Material Equipment Acceptance Division (MEA).

(3) For G and H-2 occupancies, except for existing buildings not substantially altered or improved as per § 28-02(d)(2)(A), supervised CO alarms for non-occupied rooms and spaces shall also comply with the following:

A. Each CO alarm shall sound locally within the non-occupied room or space;

B. Except where the CO alarm signal does not report to a central station monitoring company as provided for in ii. below, each CO alarm shall report to a central station approved by the Fire Department of New York as an "alarm signal" and shall be identified to the monitoring company as CO. CO alarm troubles shall be reported to the central station as a "trouble signal." Such system shall be either:

i. powered and supervised by a fire alarm system, installed in accordance with RS 17-3, 3A, or 3B, and in accordance with RS 17-14 § 5.3.7; or

ii. powered and supervised by a dedicated CO alarm system, installed in accordance with RS 17-3; however, such system is not required to transmit to a central station monitoring company provided that the system is continually monitored by full time on-site staff during periods that the building is occupied.

C. Such systems' CO alarms, and control panels must be approved by the Material Equipment Acceptance Division (MEA).

(d) Installation.

(1) Power source. All CO alarms shall be hard-wired, receiving their primary power from the building wiring, in compliance with RS 17-14 § 5.2.2, with secondary battery back-up in compliance with RS 17-14 § 5.2.4. Where more than one hard-wired CO alarm is required within the same dwelling unit, all such alarms shall be interconnected.

(2) Existing buildings. Buildings in existence on November 1, 2004, and buildings with work permits issued prior to November 1, 2004, may, in the alternative, be equipped with battery-operated CO alarms compliant with RS 17-14 § 5.2.3 or plug-in type CO alarms with a back-up battery compliant with RS 17-14 §5.2.4, except where such buildings are substantially improved or altered on or after November 1, 2004.

A. A building shall be deemed to have been substantially improved or altered if:

i. 50 percent or more of the dwelling units in occupancy group J-1, J-2, or J-3 are improved or altered and the cost of such improvement or alteration exceeds the sum of $25,000 per dwelling unit;

ii. 50 percent or more of the square footage of the structure is improved or altered for J-1, J-2, J-3, G, or H-2 occupancies and the cost of the improvement or alteration exceeds $500,000; or

iii. there has been a change in the occupancy or use of the entire structure to J-1, J-2, J-3, G, or H-2 occupancies.

B. In applying the foregoing provisions where cost is the factor, items falling within the scope of minor alterations or ordinary repairs, as set forth in §§27-124 and 27-125 of the Administrative Code, thereby exempt from permit requirements based on §27-147, as well as any other cost associated with any matters that are not regulated by the Building Code, are not included within calculation of the cost.

C. Costs of alterations are not cumulative, provided any application filed with this department is signed off as satisfactorily completed prior to the filing of a subsequent application; and, if a Certificate of Occupancy is involved, that a final Certificate of Occupancy has been issued for the pertinent application.

D. Time for compliance. The CO alarms shall be operational in existing buildings in occupancy groups J-1, J-2, J-3, G, and H-2 by November 1, 2004; however, the commissioner may upon good cause shown extend the period of compliance to June 30, 2005.

E. Where a dwelling has existing hard-wired smoke detecting devices installed pursuant to 1 R.C.N.Y § 28-01(b)(1), combination smoke detecting device/CO alarms are not permitted unless the combination units are hard wired.

F. Extension of time for compliance.

i. Appeals to the commissioner for extension of the period of compliance shall be set forth on a form filed at the applicable borough office of the Department of Buildings, no later than December 1, 2004, and contain the following information:

aa. Location of premises, block and lot, Building Department Application number, if any, Occupancy Classification, number of dwelling units, estimated number of CO alarms, type, and where they are to be installed.

bb. The hardship to be considered with regard to the delivery or installation of the equipment.

cc. The proposed time table for compliance.

dd. A copy of the signed contract for the purchase and/or installation of the system. (Cost figures may be deleted).

ii. The Commissioner will not consider "good cause" appeals unless all required annual boiler inspections for the building are filed and up to date and no open boiler violations exist and:

aa. The installation of the CO alarms is hard-wired into the building's electrical system in accordance with RS 17-14 § 5.2.2.; or
bb. The number of units in single ownership or management responsibility exceed 500, and a complete schedule for installation is submitted prior to December 1, 2004; or
cc. Special circumstances not covered by subdivisions (i) or (ii) above are involved.
iii. Notice of approved extensions for J-1, J-2, and J-3 occupancies are to be forwarded to the Commissioner of the Department of Housing Preservation and Development.
(3)Reference Standard. CO alarms for J-1, J-2, J-3, G, and H-2 occupancies shall be installed in accordance with RS 17-14.

(e) Filing requirements.

(1) Applications for the installation of any CO alarm system in J-1, G, or H-2 occupancies that connects to a fire alarm system or reports to a central station monitoring company shall be filed with the Department of Buildings and Fire Department of New York following the same administrative procedures as filing of fire alarm applications.
(2) Applications for the installation of any CO alarm system in G or H-2 occupancies that is required to be continually monitored may be filed under Directive 14 of 1975 provided:
i. the system is not connected to a fire alarm system; or
ii. the system does not report to a central station monitoring company.
(3) Applications for the installation of other hard-wired CO alarms shall be filed with the Bureau of Electrical Control where filing is required by the New York City Electrical Code.
(4) For existing buildings that are not substantially improved or altered, installation of single station CO alarms that receive primary power from batteries or that are plug-in type with back-up batteries does not require filing with the Department of Buildings.

CHAPTER 29 SPRINKLER SYSTEMS

§29-01 Installation of Automatic Sprinklers in Halls and Rooms in Class "A" Multiple Dwellings Used For Single-Room Occupancy Under the Provisions of Subdivision 7-A of §4 and §248 of the Multiple Dwelling Law.

(a) Before the installation of any sprinkler system in any single-room occupancy building is begun, an application, together with plans and specifications for such installation shall be filed with and approved by the Department of Buildings. Plans shall show accurately, both horizontally and vertically, the arrangement and dimensions of the private halls and rooms and the areas to be sprayed by each sprinkler head.
Application and specification forms may be obtained at the borough office of the Department of Buildings. Applications shall be filed in the department office in the borough in which the premises are located. Applications and specifications shall be in triplicate. Preliminary plans may be on paper. Final plans shall be filed in triplicate on paper and microfilmed.
When it is proposed to supply a sprinkler system by means of a direct connection to a public water supply main, the specifications shall be accompanied by a letter from the Department of Environmental Protection, establishing the fact that the water-supply conditions and pressures are suitable to meet the requirements of these rules for water supplies for sprinklers.

(b) Sprinkler systems shall be of the automatic wet type.

(c) Water supply from public water mains will be acceptable when such supply will provide a minimum static pressure at the highest sprinkler head or heads of not less than 15 pounds per square inch.
Taps connecting to public water mains must be equal in size to the main pipe line, except that:
A two-inch (2") tap connecting to the public water main and immediately increased to two-and-one-half inches (2 1/2") direct connection to the public water main and,
A one-and-one-half inch (1 1/2") tap connecting to the public water main and immediately increased to two inches (2") in diameter, with piping of the same diameter extending into the building, shall be considered the same as a two-inch (2") direct connection to the public water main.
The sprinkler system of each building shall have a separate and independent source of supply. When a sprinkler system is supplied direct from a public water main, it shall be separately and independently connected to the public water main. However, a house service water supply connection may be taken from the sprinkler water supply connection to the public main, on the house side of the main shut-off valve for the building, provided the diameter of the house service water supply connection does not exceed one-half of the diameter of the sprinkler water supply connection. Only one connection of the domestic water supply to the sprinkler water supply line shall permitted and no shut-off valve shall be placed on the sprinkler supply line other than the main shut-off valve for the building on the street side of the house service water supply connection.

(d) A gravity tank upon the roof will be required when the normal minimum water pressure from the public mains is insufficient, or, in lieu of a gravity tank, a pressure tank may be installed in the basement or cellar in accordance with the requirements hereafter specified in these rules.
The bottom of each gravity tank supplying the sprinkler system shall be elevated at least 20' above the roof.
Each gravity tank shall be filled through a fixed water supply tank of at least one-and-one-half inch (1 1/2") diameter and independent of the sprinkler pipe system, by means of an automatically controlled pump of a discharge capacity of at least sixty-five (65) gallons per minute against the total head, including friction at the discharge nozzle of the pump. The tank fill line shall be standard weight pipe, galvanized steel, or brass or copper pipe.
A gravity tank, if used exclusively to supply the sprinkler system, shall have an effective capacity of not less than 1,500 gallons. Gravity tanks which serve both the house supply and the sprinkler system shall have a capacity of not less than 2,500 gallons.
All exposed water supply piping connecting with roof gravity tanks shall be properly protected against frost action by four layers of one inch (1") high-grade hair felt, and each layer of hair felt shall be covered with a layer of heavy tar paper.
Each wrapping must be securely fastened with heavy twine, and wrapping joints shall have a lap not less than two inches (2"), staggered with the laps of adjacent layers.
All coverings shall be finally covered with heavy canvas, painted with two coats of waterproof [*sic*] paint.
In lieu of the foregoing, three inch thick fiberglass in a metal shield may be used.

(e) Pressure tanks when used shall be capable of supplying actual water volume as required in subdivision (j) of this section of these rules. The required water volume shall be two-thirds of the tank capacity and the [*sic*] air pressure one-third.

For the pressure to be maintained, pressure tanks shall be constructed and tested in accordance with the requirements of the ANSI/NFiPA 22 of Reference Standard RS 17-10 of the Administrative (Building) Code.

At the end of each pressure tank there shall be a glass water level gauge, and the pressure tank must also be provided with a pressure gauge and manhole for access to the tank.

The filling pump for the pressure tank shall have a capacity of 65 gallons per minute with sufficient strength to pump water into the pressure tank against full air pressure.

The air compressor for the pressure tank must be capable of delivering ten cubic feet of air per minute for the permanent maintenance of the required maximum air pressure in the tank.

The filling pipe from pump to air compressor must be provided with a relief valve set at 15 pounds in excess of the maximum air pressure carried in the tank.

(f)All tanks shall be supported in accordance with the provisions of the Administrative (Building) Code.

All tanks shall be provided with emergency outlets in conformity with Section P107.8(c) of Reference Standard RS-16 of the Administrative (Building) Code.

(g) Standard one-half inch (1/2") spray type sprinkler heads. Each private hall and room within an apartment having single-room occupancy shall be sprinkled as hereinafter provided.

In private halls within apartments, sprinkler heads shall be placed not more than fourteen feet (14') apart. No sprinkler head in a hallway shall be distant more than seven feet (7') from a wall, partition or end of the hall.

No sprinkler protection will be required within any closet with a floor area of not more than 20 square feet provided such closet is within a room and the area of the closet is considered as part of the room area in computing the required number of heads.

(h) The term "protected area" shall be construed to mean that single-room occupancy apartment within the building requiring the greatest number of sprinkler heads. In computing the required number of heads within a "protected area," the number of heads within the same apartment may be used on the condition that there is no connection to another apartment or private hall.

Whenever there is a direct connection between two adjoining apartments, either or both of which are used for single-room occupancy, the combined connected apartments and private halls shall be considered as the "protected area." In computing the required number of heads in a "protected area" of this type, the number of heads within the rooms in the connected apartments or the number of heads required in the private halls of such connected apartments, whichever is greater, shall be used.

(i)The total number of heads in the "protected area" requiring the greatest number of heads shall determine the required size of the main supply, including service mains, main branch, tank, down feed and riser, but in no case shall the size of the main supply be less than two inches.

(j)There shall be sufficient actual water volume to supply 25 percent of the heads in the "protected area" requiring the greatest number of heads for a period of 20 minutes at 20 gallons per minute.

(k) The number of sprinkler heads on a given size of piping shall not exceed the following:

Size of pipe diameters	Maximum number of sprinkler heads allowed
1 inch……..	2 heads
1 1/4 inch……	3 heads
1 1/2 inch……	5 heads
2 inch……..	10 heads
2 1/2 inch……	30 heads
3 inch……..	60 heads
3 1/2 inch……	100 heads
4 inch……..	Unlimited heads

(l)The sprinkler main shall not be less in size than the sprinkler riser and [*sic*] the check valve of equal diameter to the main and the riser shall be provided on the sprinkler main. For draining the sprinkler system, a 3/4" plugged valve shall be provided on the sprinkler main just inside the aforesaid check valve. All sprinkler piping and fittings shall be so installed that they can be thoroughly drained.

On the sprinkler main, an outside screw and yoke gate valve, readily accessible, must be provided near the front of the front of the building and located so as to control the water supply to all of the interior sprinkler systems. The said outside screw and yoke gate valve must be sealed in an open position.

If tank water supply is used for sprinklers, an outside screw and yoke gate valve shall be provided on the piping leading from the tank to the sprinkler system under conditions similar to those specified for such valves on sprinkler mains.

(m) Sprinkler risers shall not be located close to windows and all sprinkler piping shall be properly supported.

(n) Sprinkler systems shall be maintained for sprinkler use only, and connections to such sprinkler systems for any other purposes are prohibited.

(o) All piping used in sprinkler systems shall be full weight standard steel threaded pipe, well reamed and screwed up tight into fittings without reducing the waterway. Fittings shall be standard cast iron. All fittings placed inside of tank shall be of brass or other non-corroding material.

(p) Sprinkler risers shall be provided at the top for testing purposes, with a connection not less than one inch in diameter, with a valved outlet so located that same will be readily accessible at all times. When not in use, the valve shall be provided with an iron or brass plug screwed in tight.

(q) Sprinkler systems when completed shall be subjected to a hydrostatic test at a pressure of not less than thirty pounds in excess of the normal pressure required for such sprinkler systems when in service, and shall remain uncovered in every part until they have successfully passed the test. The Department of Buildings, in the borough in which the test is to be conducted, shall be notified when such test is to take place. Tests shall be conducted by the contractor or the owner or [*sic*] the owner's representative, in the presence of a representative of the Building Department.

(r)Sprinkler systems shall be inspected at least once in each month by a competent representative of the owner, to ascertain that all parts of the system are in perfect working order. A detailed record of each inspection shall be kept on the premises for examination by the Fire Department, the Department of Housing Preservation and Development, and the Department of

Buildings.

(s) There shall be kept available on the premises at all times a sufficient supply of extra sprinkler heads and also a sprinkler wrench for use to replace promptly any fused or damaged sprinkler heads.

Any head which has opened or has been damaged shall be replaced immediately with a good sprinkler head.

Sprinkler heads shall be of a type and manufacture approved by the Board of Standards and Appeals.

The minimum operating temperature of all sprinkler heads shall be in the ordinary degree range. Appropriate higher degree operating temperatures shall be required in cooking spaces.

§29-02 Installation of Automatic Wet-Pipe Sprinklers in Certain Class A and Class B Multiple Dwellings, Including Hotels, Under the Provisions of §67, Multiple Dwelling Law.

Effective February 25, 1949, automatic wet-pipe sprinklers used in certain Class A and Class B multiple dwellings, including hotels, shall be installed in conformity with the provisions of the Administrative Code, Subchapter 17 of Chapter 1 of Title 27, except as modified herein.

These rules do not apply to sprinkler installations in converted dwellings, lodging houses or multiple dwellings used for single room occupancy.

(a) In lieu of one of the four alternate automatic sources of water supply specified in §27-961, of the Administrative (Building) Code, a connection may be made to the domestic water supply system on the condition that:

(1) It can be established from information obtainable from the Department of Environmental Protection that the pressure at the top of the highest riser will be 15 pounds per square inch (except as provided in §29-02(f).

(2) If the pressure from this source is insufficient to provide a pressure of 15 pounds at the highest line of sprinklers, but is sufficient to supply a pressure of 15 pounds or more at the highest line of sprinklers, an automatic booster pump is provided, the capacity of which shall be sufficient to supply 25 percent of the standard one-half inch (1/2") inch heads in the sprinkler area having the maximum number of heads, and in no event shall such supply be less than 250 gallons per minute at a pressure of at least 15 pounds at the highest sprinkler line.

(3) A local approved type of water-flow alarm is provided, the gong so located that when it operates it may be heard by the occupants or employees, and the gong also plainly marked "Sprinkler Alarm", in red letters one inch in height on a white background.

Exception: In a sprinkler area which does not contain more than 36 heads, no water-flow alarm shall be required.

(4) A sprinkler shut-off valve is provided conveniently accessible and its purpose clearly indicated by the words "Automatic Sprinkler Shut-Off Valve" on a sign affixed thereto.

(5) The size of the domestic water supply line is at least equal to the size of the main sprinkler connection. *Note* : The provisions of Paragraph c of §27-964 shall not apply to sprinklers installed in conformity with the provisions of §29-02(a).

(b) The capacity of gravity tanks for sprinklers shall be in conformity with the provisions, of §27-965, or such tank may be supplied by an automatic filling pump of at least 65 gallons per minute capacity, which shall be sufficient to supply 25 percent of the sprinkler heads in the largest sprinkler area for 20 minutes. The capacity of such tank shall be not less than 1,000 gallons . The bottom of the gravity tank or sprinkler supply pipe shall be not less than 20 feet above the highest supplied sprinkler line. When such elevation is not practicable, an automatic booster pump may be installed in the main sprinkler supply line in conformity with §29-02(a)(2).

(c) In lieu of complying with the provisions of §27-965, a pressure tank located not more than one story below the highest supplied sprinkler line, filled by an automatic pump, and with a supply of water, all as described in §29-02(b) may be installed. In addition, a high-and-low air-alarm shall be provided.

(d) The provisions of §27-963(a) may be construed to permit the sprinkler connection to the street main to be the same size as main sprinkler riser, but in no instance shall it be less than two inches. A tap may be one pipe size less than the sprinkler main.

(e) §27-935 shall apply only when the number of heads in any sprinkler area as defined in these rules exceeds 36.

(f)*Standard 1/2-inch sprinkler heads*. In lieu of applying the provisions of §27-956, sprinkler heads shall be so spaced that there shall be one head for approximately 168 square feet of floor area, and shall also be spaced not more than 14 feet on centers. The distance from a wall or partition to the first sprinkler head shall not exceed seven feet, measured at right angles to the wall or partition. In multiple dwellings that are presently equipped with sprinklers, the heads in the public halls may be spaced 14 feet on centers, with the first head not more than seven feet from any wall or partition. A 12 pound static pressure will be accepted at the topmost sprinkler line, provided the sprinkler heads are spaced to cover 100 square feet or less. Sprinkler heads may be installed in covered shafts in lieu of fire-retarding on the condition that:

(1) Such shafts are not exposed to freezing temperatures;

(2) If ventilating louvres, windows or skylights are present in such shafts, the highest head is located a sufficient distance from such openings to prevent freezing;

(3) One head is centered at the top of such shaft at the level of the highest ceiling;

(4) In shafts constructed of [*sic*] incombustible materials, excepting windows or doors opening thereon, sprinkler heads are placed at each floor level and are staggered at alternate levels;

(5) In shafts constructed of combustible materials, and which exceed 60 square feet in cross-sectional area, sprinkler heads are placed at each floor level and are staggered at alternate floor levels.

(g) The protection afforded by sprinklers to stairs, halls, corridors, and other passageways shall also apply to their soffits and overlaps.

(h) These rules shall also apply to a store or other space used for business on any story where there are no sleeping rooms and which is not provided with sprinkler heads, unless such spaces are otherwise arranged in conformity with the provisions of Section 6l, Multiple Dwelling Law.

(i)In lieu of complying with the provisions of §3-9.l.l of ANSI/NFiPA 13 of Reference Standard RS 17-2 of the Administrative (Building) Code, a 1 inch valved pipe may be extended from the top of the riser to the outside of the building, or inside the building to a deep sink for testing the system, pump and alarm under water-flow conditions.

(j)Check valves, gate valves, and water meters shall be installed

as and when directed by the Department of Environmental Protection.

(k) The term "sprinkler area" as used in these rules shall mean any floor space within a structure enclosed on all sides by exterior walls, fire walls, fire partitions, fire-retarded partitions, or fire-resistive partitions and doors acceptable to the Department of Housing and Buildings. The term "fire-resistive partition" as used in these rules shall mean a partition which is constructed of incombustible materials or wood studs covered on both sides with lath and plaster, plaster board, or other fire-resistive materials acceptable to the Department.

Such partitions shall extend from the floor to the ceiling. All doors in such partitions shall be self closing.

(l) The sprinkler control valve shall be inspected at least once weekly by a competent person, who is employed by the owner to see that such valves are sealed open, and who holds a certificate of fitness. A record of each inspection shall be kept for examination by a representative of the Department. The provisions of §27-957, in relation to alarm devices shall not apply to a sprinkler area which does not contain more than 36 heads in multiple dwellings, in which such weekly inspections are made.

(m) Systems installed before July 1, 1928 shall be subject to inspection and if found adequate may be accepted by the Department of Buildings. However, in such cases, a copy of the plans approved by the Fire Department shall be filed with the Department of Buildings.

(n) Where there are practical difficulties in the way of carrying out these rules, the Superintendent may permit modifications, provided that the spirit of these rules are observed and safety secured.

§29-03 Installation of Automatic Wet-Pipe Sprinkler Systems and Alarm Systems in Certain Class B Multiple Dwellings (Lodging Houses).

(a) Notice is hereby given that, pursuant to the provisions of Chapter 713 of the Laws of 1929, and Section 4 of Chapter 553 of the Laws of 1944, effective April 5, 1944, automatic wet pipe sprinkler systems installed in "lodging houses", shall be installed in conformity with the provisions of the Administrative Code of the City of New York.

(b) An automatic closed-circuit water-flow and valve-tamper alarm system, having at least one manual fire alarm station shall be provided in connection with the sprinkler system. This alarm system shall be connected to an approved central station which provided supervisory and maintenance service satisfactory to the fire commissioner.

In connection therewith, there shall be an approved transmitter so arranged as to actuate all gongs of the interior fire alarm system whenever a water flow through the sprinkler system occurs.

Interior fire alarm systems of the closed-circuit type previously installed under the rules then in force and approved by the fire commissioner may be accepted if, after inspection and test the systems are found to be adequate and in proper operating condition.

Battery operated interior fire alarm systems of the open-circuit type shall be replaced with an approved closed-circuit system.

In connection with these rules, the persons affected are advised to consult Article 5 of Subchapter 17 of Chapter 1 of Title 27, of the Administrative (Building) Code and §§15-126, 15-127 and 15-214, of the Administrative (Fire Prevention) Code of the city of New York, concerning interior fire alarm system, watchmen's time detector system and telegraphic communication.

§29-04 Installation of Automatic Wet-Pipe Sprinkler Systems and Alarm Systems in Certain Class B Multiple Dwelling (Lodging Houses).

(a) Automatic wet-pipe sprinkler systems installed in lodging houses in compliance with Subdivision 3, of §66, of the Multiple Dwelling Law shall be in conformity with the provisions of the Administrative Code, Subchapter 17 of Chapter 1 of Title 27, only to the extent that such article is not inconsistent with these amended rules.

(1) Sprinkler systems shall be automatic wet-pipe with one automatic source of water supply.

(2) Acceptable automatic sources of water supply shall be any one of the following:

(i) Elevated gravity tank having a minimum capacity of 5,000 gallons and installed in accordance with §27-965 of the Administrative (Building) Code. Effective capacity shall be determined by the largest number of heads in any floor area multiplied by 75 gallons, and shall never be less than 5,000 gallons.

(ii) Pressure tank having a minimum capacity of 2,500 gallons and installed in accordance with §27-965 of the Administrative (Building) Code. Effective water capacity shall be determined by the largest number of heads in any floor area multiplied by 37.5 gallons, and shall never be less than 2,500 gallons.

(iii) Automatic fire pump having a capacity of not less than 250 gallons per minute and installed in accordance with §27-964 of the Administrative (Building) Code.

(iv) A direct connection to the public water main, provided it is capable of maintaining a pressure of at least 15 pounds per square inch at the top of the highest sprinkler riser, with 250 gallons of water flowing per minute at a 2 1/2-inch outlet from a hydrant at the street level within 250 feet of the building. The hydrant test shall be made between the hours of 8 a.m. and 5 p.m. on a working day.

If the public water main pressure is incapable of maintaining a minimum pressure of 15 pounds per square inch as specified herein, a booster pump may be installed in conformity with these rules; or, in lieu of such booster pump, the sprinkler spacing and pipe sizes for the area not having the required minimum water pressure of 15 pounds per square inch shall be in conformity with the provisions of §27-956 of the Administrative (Building) Code, provided that in no event shall [*sic*] the minimum water pressure at the highest sprinkler riser be less than 2 pounds per square inch Booster pumps, if required, shall have a capacity sufficient to supply 250 gallons per minute, at a pressure of at least 15 pounds at the top of the highest sprinkler riser. All shall be installed in accordance with §27-964 of the Administrative (Building) Code.

A letter from the Department of Environmental Protection shall be filed with the application for the installation of a sprinkler system, stating the water pressure and supply conditions of the street main to which the sprinkler supply is to be connected.

(3) One common source of water supply shall be acceptable for any contiguous buildings under the same ownership or leasehold and under the same lodging-house management, provided that each such building is fully separated by fire walls with automatic fire doors on any connecting openings.

Supply mains shall be at least the size of the largest main riser in any one building and shall be arranged to be centrally located and run as directly as possible from the source of water supply to the respective risers in each building.
Each building shall be provided with a separate alarm valve in accordance with §29-04(a)(8).
In all other respects, the installation in each building shall comply with these rules.
Supply mains shall be increased in size as may be required for adequate water supply and pressure requirements in accordance with §29-04(a)(2).
(4) Sprinkler spacing for standard 1/2-inch heads under sheathed or plaster ceilings shall not exceed 168 square feet of protection area, with the distance between lines and between sprinklers on lines not in excess of 14 feet.
(5) The maximum permissible number of standard 1/2-inch sprinkler heads on a given pipe-size, in one fire area, on any one story shall be as follows:

Size of pipe diameters	Maximum number of sprinkler heads allowed
1 inch	2 heads
1 ¼ inch	3 heads
1 ½ inch	5 heads
2 inches	10 heads
2 ½	30 heads
3 inches	60 heads
3 ½ inches	100 heads
4 inches	Unlimited heads

Branch lines should not exceed eight sprinkler heads on either side of a cross main.
Areas within fire walls may be subdivided into separate fire areas by one-hour partitions. Openings in such partitions shall be protected with fireproof doors and assemblies, and such doors shall be self-closing. Areas within such subdivisions may be considered independent fire areas.
(6) Each riser shall be of sufficient size to supply all the sprinkler heads on that riser in any one fire area according to §29-04(a)(5).
The supply main shall be at least the size of the riser it serves, except that no main shall be less than two inches and shall be installed in accordance with §27-956 of the Administrative (Building) Code.
(7) Taps in the public water main may be one standard pipe-size smaller than the required supply main according to §29-04(a)(6), provided the supply main immediately increases at the tap to its full required size.
All water main installations shall be subject to the approval of the Department of Environmental Protection.
(8) Systems shall be equipped with an alarm valve so constructed that any flow of water in any part of the system, or the closure of any valve controlling water supply will automatically cause the interior fire alarm system and the central station alarm to operate.
(9) Prior to the issuance of a letter of approval from the Department of Buildings as to the satisfactory installation of any system, a letter from the Department of Environmental Protection must be filed with the Department as to the size of tap and service main and its satisfactory installation.

(b) An automatic closed-circuit water-flow and valve-tamper alarm system, having at least one manual fire alarm station shall be provided in connection with the sprinkler system. This alarm system shall be connected to an approved central station which provided supervisory and maintenance service satisfactory to the fire commissioner.
In connection therewith, there shall be an approved transmitter so arranged as to actuate all gongs of the interior fire alarm system whenever a water flow through the sprinkler system occurs.
Interior fire alarm systems of the closed-circuit type previously installed under the rules then in force and approved by the fire commissioner may be accepted if, after inspection and test the systems are found to be adequate and in proper operating condition.
Battery operated interior fire alarm systems of the open-circuit type shall be replaced with an approved closed-circuit system.
In connection with these rules, the persons affected are advised to consult Article 5 of Subchapter 17 of Chapter 1 of Title 27, of the Administrative (Building) Code and §§15-126, 15-127 and 15-214, of the Administrative (Fire Prevention) Code of the city of New York, concerning interior fire alarm system, watchmen's time detector system and telegraphic communication.

§29-05 Installation of Automatic Wet-Pipe Sprinklers in Fireproof Multiple Dwellings Converted to Business Use.

(a) Except as otherwise provided herein, automatic wet-pipe sprinklers used in fireproof multiple dwellings, converted in whole or in part to business use under the provisions of §27-248 of the Administrative (Building) Code, in effect prior to December 6, 1968, and in fireproof multiple dwellings that are altered under the provisions of §9, Subdivision 5, Paragraph b, of the Multiple Dwelling Law (subdivision of large apartments) shall be installed in conformity with Subchapter 17 of Chapter 1 of Title 27 of the Administrative (Building) Code.

(b) In lieu of one of the four alternate automatic sources of water supply specified in §27-961 of the Administrative (Building) Code, a connection may be made to the domestic water supply system on the condition that:
(1) It can be established from information obtainable from the Department of Environmental Protection that the minimum static pressure at the top of the highest riser will be at least 15 pounds per square inch, except as otherwise provided in §29-05(g).
(2) If the pressure from this source is insufficient to provide a minimum static pressure of 15 pounds per square inch, at the highest line of sprinklers, but is sufficient to supply a pressure of 5 pounds per square inch or more at the highest line of sprinklers, and that an automatic booster pump is provided, the capacity of which shall be sufficient to supply 250 gallons per minute at a pressure of at least 15 pounds per square inch at the highest sprinkler line
(3) A sprinkler shut-off valve is provided conveniently accessible, and its purpose clearly indicated by the words "Automatic Sprinkler Shut-Off Valve" on a sign affixed thereto, and that such valve is sealed open.
(4) The size of the domestic water supply line is at least equal in size of the main sprinkler connection.
(5) The provisions of Paragraph c of §27-964 shall not apply to sprinklers installed in conformity with the provisions of this

§29-05(b).

(6) Where the length of pipe from the furthermost sprinkler to the riser exceeds 100 feet the pipe beyond the 100 foot distance shall be increased in size one pipe size above the size otherwise required for each 100 feet of additional length or part thereof. This provision shall not require an increase in the size of the risers.

(7) A separate riser shall be provided in each required stair enclosure, separately controlled.

(c) The capacity of gravity tanks for sprinklers shall be in conformity with the provisions of §27-965, or such tank may be supplied by an automatic filling pump capable of delivering at least 65 gallons per minute to the tank and shall have sufficient capacity to supply 25 percent of the sprinkler heads in the largest sprinkler area for 20 minutes, at 20 gallons per minute The capacity of such tank shall not be less than 1,500 gallons. The bottom of the gravity tank, or the sprinkler supply pipe shall not be less than 20 feet above the highest supplied sprinkler line. When such elevation is not practicable, an automatic booster pump may be installed in the main sprinkler supply line in conformity with §29-05(b)(2).

(d) In lieu of complying with provisions of §27-965, a pressure tank located not more than one story below the highest supplied sprinkler line, filled by an automatic pump, and with a supply of water, all as described in §29-05(c), may be installed. In addition, a high-and-low air-alarm shall be provided.

(e) §27-963 may be construed to permit the sprinkler connection to the street main to be the same size as the main sprinkler riser, but in no instance shall it be less than 2 inches. A tap may be one pipe size less than the sprinkler main.

(f) §27-940 shall apply only when the number of sprinkler heads in any fire area as defined in these rules exceeds 36.

(g) In lieu of applying the provisions of §27-956, sprinkler heads shall be so spaced that there shall be one head for approximately 130 square feet of floor area, and heads shall be spaced not more than 14 feet on centers. The distance from a wall or partition to the first sprinkler head shall not exceed seven feet measured at right angles to the wall or partition. A 12 pound minimum static pressure will be accepted at the topmost sprinkler line, provided the sprinkler heads are spaced to cover 70 square feet or less.

(h) In lieu of complying with the provisions of Section ANSI/NFiPA 13 of Reference Standard RS 17-2 of the Administrative (Building) Code, a 1 inch valve pipe may be extended from the top of the riser to the outside of the building, or inside the building to a deep sink for testing the system, pump and alarm under water-flow conditions.

(i) Check valves, gate valves, and water meters shall be installed as and when directed by the Department of Environmental Protection.

(j) The term "sprinkler area" as used in these rules shall mean any floor space within a structure enclosed on all sides by [*sic*] exterior walls, fire walls, fire partitions, or fireproof [*sic*] partitions and self-closing doors acceptable to the Department of Buildings.

(k) The sprinkler control valve shall be inspected at least once weekly by a competent person, who is employed by the owner to see that such valves are sealed open, and who holds a certificate of fitness. A record of each inspection shall be kept for examination by a representative of the Department. The provisions of §27-957, in relation to alarm devices, shall not apply to those buildings having not more than 36 heads in any sprinkler area.

(l) Where there are practical difficulties in the way of carrying out these rules, the Superintendent may permit modification, provided that the spirit of these rules are observed and safety secured.

§29-06 Installation of Automatic Sprinklers in the Public Halls of Multiple Dwellings Under the Provisions of §187 (Converted Dwellings) and §218, Subdivision 5 (Old-Law Tenements), of the Multiple Dwelling Law, and of the Sprinklers in Cooking Spaces in all Types of Multiple Dwellings Under the Provisions of §33 of the Multiple Dwelling Law.

(a) *Certification from the Department of Environmental Protection*. When it is proposed to supply a sprinkler system by means of a direct connection to a public water supply main, the specifications shall be accompanied by a letter or other approved certification from the Department of Environmental Protection, establishing the fact that the water supply conditions and pressure are such that will meet the requirements of these rules for water supplies for sprinklers.

(b) Type of system required.

Sprinkler system shall be of the automatic wet type.

(c) *Connection to water main*.

The sprinkler system of each building shall have a separate and independent source of supply except as herein otherwise specifically provided. When a sprinkler system is supplied direct from a public water main, it shall be separately and independently connected to the public water main except that one street main supply will be accepted for not more than three contiguous buildings under one ownership where such buildings are separated by fire walls, provided that the supply is brought into the center building of a group of three, and provided further, that the supply shall be adequate for the total number of sprinklers in any two buildings, but not less than 50 percent of the total number of sprinklers in all the buildings in any case. In all other respects, the installation in each building shall comply with these rules.

When one street supply serves more than one building, there shall be submitted to the department evidence that [*sic*] an easement has been created in favor of each building for the continued use of such supply for each building.

A house service water supply connection may be taken from the sprinkler water supply connection to the city main, on the house side of the main shut-off valve for the building provided the diameter of the house service water supply connection does not exceed one-half of the diameter of the sprinkler water supply connection. Only one connection of the domestic water supply to the sprinkler water supply line shall be permitted and no shut-off valve shall be placed on the sprinkler supply line, other than the main shut-off valve for the building on the street side of the house service water supply connection. (§29-06(c) amended by resolution filed with City Clerk February 9, 1956.)

(d) *Water pressure and supply.*

Water supply from public water mains will be acceptable when such supply will provide a minimum static pressure at the highest sprinkler of not less than 15 pounds per square inch

For computation of the required water pressure at the curb

level to provide adequate pressure at the highest sprinkler, the following formula shall be used:
Required water pressure in pounds per square inch = 0.434 H plus 15.
Where H = height in feet from the curb level to the level of the highest sprinkler.
When the minimum pressure in the water supply is insufficient to provide the required pressure, but is capable of [*sic*] providing a pressure of not less then five pounds per square inch at the highest sprinkler, an automatic centrifugal booster pump for the purpose of increasing the water pressure will be accepted under the following conditions:
(1) The rated capacity of the pump shall be not less than 250 gallons per minute and shall be sufficient to supply at least 25 percent of the total number of sprinklers, or where there is insufficient pressure in the top story only, all the sprinklers on the top floor, at the rate of 20 gallons per minute per sprinkler. A 2 1/2-inch diameter test tee shall be attached to the discharge pipe from the pump for the purpose of testing its capacity.
(2) There shall be a pressure regulator attached to the pump which shall be set so that the pump will automatically start operating when the water pressure at the highest sprinkler falls below 20 pounds per square inch, and cease to operate when the said pressure reaches 30 pounds per square inch.
(3) The pump shall be attached on bypass properly valved to the sprinkler main on the house side of the main control valve. The intake and discharge pipes to the pump shall be of sufficient size to deliver the required volume of water to the system at the stated minimum pressure.
(4) Drain valves shall be installed on the main between the main (O.S.&Y.) control valve and the intake connection to the pump and on the house side of the discharge connection to the pump. Such drain valves shall be closed by means of screw plugs.
(5) A check valve shall be installed on the main on the inside service between the intake and discharge connections to the pump.
(6) The intake and discharge pipes from the pump shall each be provided with an O.S.&Y. valve.
(7) A variation of not more than two pounds per square inch, in the minimum pressure, in the street supply below the required pressure for the sprinkler system without the introduction of a booster pump or increased size in piping may be accepted by the Superintendent if in his opinion the supply is adequate.
There shall be sufficient actual water volume to supply 25 percent of the heads for a period of 20 minutes at 20 gallons per minute.

(e) *Roof tanks.*

Except as otherwise specifically provided in §29-06 (d), a gravity tank upon the roof will be required when the normal minimum water pressure from the public water main is insufficient.
The bottom of each gravity tank supplying a sprinkler system shall be elevated at least 20 feet above the roof.
Each gravity tank shall be filled through a fixed water supply pipe of at least one and one-half inch diameter and independent of the sprinkler pipe system, by means of an automatically controlled pump of a capacity at the discharge nozzle of the pump of at least 65 gallons per minute against the total head, including friction. The tank fill line shall be standard weight pipe, galvanized steel, brass or copper [*sic*] pipe. The pump shall be equipped with control apparatus which will automatically start operation when the effective capacity of the tank falls below the minimum reserve supply for the sprinkler system.
A gravity tank, if used exclusively to supply the sprinkler system, shall have an effective capacity of not less than fifteen hundred (1500) gallons. Gravity tanks which serve both the house supply and the sprinkler system shall have an effective capacity of not less than twenty-five hundred (2500) gallons with a minimum of fifteen hundred (1500) gallons reserved for the sprinkler system.
All exposed water supply piping connecting with roof gravity tanks shall be properly protected against freezing by four layers of one inch high-grade hair felt, and each layer of hair felt shall be covered with a layer of heavy tar paper.
Each wrapping shall be securely fastened with heavy twine, and wrapping joints shall have a lap of not less than two inches staggered into the laps of the adjacent layers.
All coverings shall be finally covered with heavy canvas sewed at seams and painted with two coats of waterproof paint.
In lieu of the foregoing, three inch thick fiberglass in a metal shield may be used.
Exposed gravity tanks on the roof shall be protected against freezing by means of an approved enclosure, insulation, heating coil or other means acceptable to the Superintendent.
Gravity tanks shall be supported in accordance with the provisions of §P107.8 of Reference Standard RS-16 of the Administrative (Building) Code.
Gravity tanks shall be provided with emergency outlets in conformity with §P107.8 of Reference Standard RS-16 of the Administrative (Building) Code.

(f) *Pressure tanks.*

Except as otherwise specifically provided in §§29-06(d) and (e), a pressure tank will be required when the normal minimum water pressure from the public main is insufficient. Such pressure tank may be installed in the basement or cellar.
Pressure tanks when used shall be capable of supplying actual water volume as required in §29-06(d) of these rules at a pressure of not less than 15 pounds per square inch Pressure tanks shall be constructed and tested in accordance with the requirements of ANSI/NFiPA 22 of Reference Standard RS 17-10 of the Administrative (Building) Code.
Pressure tanks shall be at least two-thirds filled with water and an air pressure by gauge shall be maintained in the tank of not less than 75 pounds plus the pressure caused by the column of water in the sprinkler system above the bottom of the tank.
At the end of each pressure tank there shall be a glass water-level gauge, and the pressure tank shall also be provided with a pressure gauge and a manhole for access to the interior of the tank.
The filling pump for the pressure tank shall have a capacity of not less than 65 gallons per minute against the total head including friction and air pressure of the tank. The compressor shall be powered by an electric motor which shall be equipped with control apparatus, which will automatically start the motor when the pressure in the tank drops to 75 pounds per square inch and will cut out the motor when the pressure in the tank reaches the total required pressure. The air compressor shall be capable of delivering not less than 10 cubic feet of air per minute.
The filling pipe from the pump or air compressor shall be provided with a relief valve set to open at 15 pounds in excess of the maximum air pressure required in the tank.

(g) *Sprinkler pressure, where required.*

Sprinklers shall be arranged to spray all parts of the public stairways, service stairways, their hallways, landings and soffits.

Sprinkler protection shall be provided also in each closet opening on a public hall and in any permanent telephone booth placed in a public hall, but no sprinkler protection shall be required in any bathroom, water closet [*sic*] compartment or shower room opening upon a public hall.

There shall be two or more sprinklers installed under the soffit of each public stairs spaced not more than fourteen (14) feet apart. Sprinklers shall be provided over and under the stairway leading from the basement or cellar to the first floor, except that where the under part of the cellar stairway is completely enclosed with fireproof material, sprinklers will not be required under the soffit of such cellar stairway.

Sprinkler protection shall be provided in spaces exceeding three (3) feet in height, above a public hall between the ceiling of the top story and the roof unless such spaces are properly cut off from the public hall by means of fire retarded partitions.

Sprinkler protection shall be provided also on the underside of public stairhalls, stair landings and soffits which are not within stair enclosures except when such surfaces are fire-retarded.

Sprinklers shall not be required in roof bulkheads or in unheated outside street vestibules.

Sprinkler protection shall not be required in any auxiliary stairway extending from the lowest story to the next higher story above, on condition that such stairway is not located under any stairway leading to upper stories nor terminates in a public hall.

Deflectors of sprinklers shall be placed not less than three inches nor more than ten inches below ceilings or soffits.

Sprinklers shall not be located within 12 inches distance of any obstruction such as hanger, lighting fixture, etc.

(h) *Tap sizes required*.

Taps connecting to public water mains shall be equal in size to the main pipe line, except that:

A two and one-half inch tap connecting to the public water main and immediately increased to three inches in diameter, with piping of the same diameter extending into the building, shall be considered the same as a three inch direct connection to the public water main.

A two inch tap connecting to the public water main and immediately increased to two and one-half inches in diameter, with piping of the same diameter extending into the building, shall be considered the same as a two and one-half inch direct connection to the public water main.

A one and one-half inch tap connecting to the public water main and immediately increased to two inches in diameter, with piping of the same diameter extending into the building, shall be considered the same as a two inch direct connection to the public water main.

(i) *Pipe schedules*.

Except as otherwise provided in this section, the number of sprinklers on a given size of piping shall not exceed the following:

Diameter of Pipe	Maximum number of sprinklers allowed
1 inch pipe	2 sprinkler heads
1 ¼ inch pipe	3 sprinkler heads
1 ½ inch pipe	5 sprinkler heads
2 inch pipe	10 sprinkler heads
3 inch pipe	30 sprinkler heads
4 inch pipe	60 No Limit

The sprinkler main shall not be less in size than the sprinkler riser and shall not be less in size than any branch it serves.

Except as otherwise specifically provided in §29-06(h), the total number of sprinklers in a structure shall determine the required size of the tap, service main, risers and branches, but in no case shall the size of the main supply be less than two inches

The following sprinklers will not be counted in computing the size of the taps, mains and risers:

(1) One sprinkler of the required sprinklers placed under the soffits of the stairs in each story when more than one sprinkler is provided.

(2) Sprinklers placed in any closet or telephone booth opening upon a public hall.

(3) Sprinklers placed (in lieu of fire retarding) on the underside of public stairhalls, stair landings and soffits not within the stair enclosure.

The permissible number of heads may at the discretion of the Superintendent be increased by not more than 10 percent.

(j) *Siamese*.

A sprinkler system containing 55 or more sprinklers in one building or fire area, shall be provided with an approved Fire Department Siamese Connection installed in accordance with §27-940 of the Administrative (Building) Code.

(k) *Sprinklers in existing cooking spaces*.

When a sprinkler is installed in the ceiling over an existing cooking space, pursuant to §33 of the Multiple Dwelling Law, the sprinkler shall be connected with the domestic water supply of the building through a pipe of at least one inch diameter, at a point either side of the valve controlling the supply to the plumbing fixture in the cooking space. There shall be at least one sprinkler for every 49 square feet or fraction thereof of the floor area of the cooking space. Such sprinklers shall not be included in the computations for determining the size of the sprinkler piping or the necessity of a siamese as outlined in §§29-06(i) and 29-06(j).

No sprinkler shall be installed in a cooking space without a written approval from the Department of Buildings. The Superintendent may, however, waive the requirement as to the filing of the plans when, in his opinion, the nature of the alteration may be fully explained in the application.

(l) *Valves*.

Each valve controlling water supply and each valve controlling drainage of system or test flow, shall bear a metal plate securely attached to the valve and indicating clearly the purpose of each such valve.

On the sprinkler main, an outside screw and yoke gate valve, readily accessible, shall be provided near the front wall of the building and located so as to control the water supply to all of the interior sprinkler system. The said outside screw and yoke gate valve shall be sealed in an open position.

If a roof tank is used as a supply for sprinklers, an outside screw and yoke gate valve shall be provided in the piping leading from the tank to the sprinkler system, under conditions similar to those specified for such valves on sprinkler mains.

A check valve of equal diameter to the main shall be installed in all sprinkler mains where a building is supplied by services connected to different street mains, or where a building is equipped with a siamese connection. Such check valve shall be placed within two feet of the outlet side of the main control valve.

Where a sprinkler system is supplied with both a gravity tank and a street main, a check valve shall be placed in the independent supply pipe to the tank (on the tank side of the pump) and in the main at the outlet end of the main control valve. Such check valves shall be of equal diameter to the supply pipe and the main respectively.

When the sprinkler system has an auxiliary supply in the form of a siamese connection, a check valve shall be placed in a horizontal position in the down feed from the gravity tank and immediately below the roof.

When a building is supplied through a pressure tank in the cellar or basement, a check valve of equal diameter to the main shall be placed in the sprinkler main on the inside service between the intake and discharge connections to the pump feeding the pressure tank.

Where a sprinkler system is equipped with a booster pump, valves shall be provided in accordance with §29-06(d).

All control valves in supplies to the sprinkler system shall be sealed in an open position in an approved manner.

Where an underground main is used, the main control valve shall be located where readily accessible.

(m)*Drainage*.

All sprinkler pipe and fittings shall be so installed that the system can be thoroughly drained. Where practicable, all piping shall be arranged to drain to the main drain valve. Where this is impracticable, as in the case of sprinkler piping under stair soffits, a three-quarter inch screw plug shall be provided in the lower end of such piping to permit drainage.

Except where otherwise provided in the previous paragraph, sprinkler pipes shall be pitched not less than one-quarter inch in the 10 feet Pipe shall be straightened before installation to prevent pockets which would interfere with proper drainage.

For draining the sprinkler system, a three-quarter inch tee branch with a three-quarter inch plugged valve shall be provided on the sprinkler main on the house side of the main (O.S.&Y.) control valve.

Where a sprinkler system is provided with check valves, the intermediate pipe between check valves shall be so arranged as to properly drain.

(n) *Sprinkler specifications*.

Sprinklers shall be of a type and manufacture approved by the Board of Standards and Appeals and of current issue.

The operating temperature of all sprinklers shall be in the ordinary degree range. Appropriate higher degree operating temperatures shall be required in cooking spaces.

Any sprinkler which has opened or has been damaged shall be replaced immediately with a good sprinkler.

There shall be kept available on the premises at all times at least three extra sprinklers and also a sprinkler wrench for use to replace any fused or damaged sprinklers.

(o) *Pipe specifications- sleeves*.

All piping except underground piping used in sprinkler systems shall be full weight standard steel threaded pipe, well reamed and screwed up tight into fittings without reducing the waterway. Fittings shall be standard weight cast-iron. All fittings and pipes placed inside of tanks shall be of brass or other non-corroding material.

Underground piping shall be of Extra Heavy Cast Iron Corporation pipe with bell and spigot [*sic*] or mechanical joints.

Sprinkler piping passing through floors (other than floors in public halls) of concrete or waterproof construction, shall have properly designed substantial thimbles or sleeves projecting three to six inches above the floor to prevent possible floor leakage.

The space between the pipe and sleeve should be caulked with oakum or equivalent material. If floors are of cinder concrete, thimbles or sleeves should extend all the way through to protect the piping against corrosion.

(p) *Hangers and support of piping*.

All branches shall be adequately supported. There shall be at least one hanger for each length of pipe between sprinklers, with one hanger within 30 inches of the end sprinkler and with hangers not over 12 feet apart.

Vertical piping shall be securely supported at the base and at maximum intervals of every other floor, provided that such maximum intervals are 20 feet or less.

The maximum spacing between hangers on horizontal mains and risers shall be twelve 12 feet

Hangers shall be of a substantial metal type.

Sprinkler risers shall not be located within 12 inches of a window or other exterior wall opening.

(q) *Frost protection*.

When necessary for the protection of a sprinkler system against frost, the Superintendent shall require that the public halls be heated.

Exposed water supply piping shall be protected against frost in accordance with §29-06(e).

(r)*Tests*.

Sprinkler systems when completed shall be subjected to a hydrostatic test at a pressure of not less the thirty 30 pounds per square inch in excess of the normal pressure required for such sprinkler system when in service, except that where a siamese is required, the test pressure shall be not less than 200 pounds per square inch.

All piping shall remain uncovered in every part until it has successfully passed the test.

The Department of Buildings, in the borough in which the test is to be conducted, shall be notified when such test is to take place. Tests shall be conducted by the contractor or the owner or the owner's representative, in the presence of a representative of the Building Department.

Sprinkler risers shall be provided at the top for testing purposes, with a connection not less than one inch in diameter, with a valve outlet so located that same will be readily accessible at all times. When not in use the valve shall be provided with an iron or brass plug screwed in tight.

(s) *Maintenance*.

Each sprinkler system shall be maintained in good condition and in such manner that it will function effectively in the event of fire on the premises.

The owner is responsible for the condition of his sprinkler system and shall use due diligence in keeping the system in good operating condition.

Sprinkler systems shall be inspected at least once in each six months by the owner, to ascertain that all parts of the system are in perfect working order. A detailed record of each such inspection shall be kept on the premises for examination by the Department of Housing Preservation and Development, the Department of Buildings and the Fire Department.

(t)*Painting*.

When the sprinkler system is given any kind of coating, such

as whitewash or paint, care shall be exercised to see that no portion of the automatic sprinklers is covered.

(u) *Alterations*.

No additional sprinklers shall be installed and no part of a sprinkler system shall be altered without a written approval from the Department of Buildings.

(v) *Issuance of approval*.

Before the installation of a sprinkler system is approved and prior to the issuance of a letter of approval, there shall be filed with the Department of Buildings, in the borough in which the work has been installed, a letter from the Department of Environmental Protection indicating the size of the tap and service main and whether same has been installed in an approved manner.

§29-07 Installation of Wet-Pipe Sprinklers.

Rules and Regulations for the Installation of Wet-Pipe Sprinklers under the provisions of §248, Subdivision 4, Paragraph b, Multiple Dwelling Law, in Certain Fireproof Multiple Dwellings Erected before May 16, 1913, and Converted in Whole or in Part to Single Room Occupancy Prior to December 9, 1955.

Extract from the Multiple Dwelling Law Section 248, Subdivision 4, Paragraph b. "There shall be access to a second means of egress within the apartment without passing through any public stair or public hall. On and after July first, nineteen hundred fifty-seven, every tenement used or occupied for single room occupancy in whole or part under the provisions of this section, and which does not have at least two means of egress accessible to each apartment, and extending from the ground story to the roof, shall be provided with at least two means of egress or, in lieu of such egress, every stair hall or public hall, and every hall or passage within an apartment, shall be equipped on each story with one or more automatic sprinkler heads approved by the department. Elevator shafts in such tenements shall be completely enclosed with fireproof or other incombustible material and the doors to such shafts shall be fireproof or shall be covered on all sides with incombustible material."

(a) Except as otherwise provided herein, automatic wet-pipe sprinklers installed under the provisions of §248, Subdivision 4, Paragraph b, Multiple Dwelling Law, in certain fireproof multiple dwellings erected before May 16, 1913, and converted in whole or in part to single room occupancy prior to December 9, 1955, shall be installed in conformity with Subchapter 17 of Chapter 1 of Title 27 of the Administrative Code.

(b) In lieu of one of the four alternate automatic sources of water supply specified in §27-961, Subdivision b, of the Administrative (Building) Code, a connection may be made to the domestic water supply system under the following conditions:

(1) It can be established from the information obtainable from the Department of Environmental Protection that the minimum static pressure at the top of the highest riser will be at least 15 pounds per square inch except as otherwise provided in §29-07(g).

(2) If the pressure from this source is insufficient to provide a minimum static pressure of 15 pounds per square inch at the highest line of sprinklers, but is sufficient to supply a pressure of 5 pounds per square inch or more at the highest line of sprinklers, an automatic booster pump shall be provided, the capacity of which shall be 250 gallons per minute at a pressure of at least 15 pounds per square inch at the highest sprinkler line.

(3) A sprinkler shut-off valve is provided conveniently accessible, and its purpose is clearly indicated by the words "Automatic Sprinkler Shut-Off Valve" on a sign affixed thereto, and that such valve is sealed open.

(4) The size [*sic*] of the domestic water supply line is at least equal to the size of the main sprinkler connection.

(5) The provisions of Paragraph c, of §27-964 shall not apply to sprinklers installed in conformity with the provisions of this §29-07(b).

(6) Where the length of pipe from the furthermost sprinkler to the riser exceeds 100 feet, the pipe beyond the 100 foot distance shall be increased in size one pipe size above the size of otherwise required, for each 100 feet of additional length or part thereof. This provision shall not require an increase in the size of the risers.

(c) The capacity of [*sic*] gravity tanks for sprinklers shall be in conformity with provisions of §27-965, or such tank may be supplied by an automatic filling pump, capable of delivering at least 65 gallons per minute to the tank and shall have sufficient capacity to supply 25 percent of the sprinkler heads in the largest sprinkler area for 20 minutes, at 20 gallons per minute. The capacity of such tank shall not be less than 1,500 gallons The bottom of the gravity tank or the sprinkler supply pipe shall not be less than 20 feet above the highest supplied sprinkler line. When such elevation is not practicable, an automatic booster pump may be installed in the main sprinkler supply line in conformity with paragraph b of §29-07(b)(2).

(d) In lieu of complying with the provisions of §27-965, a pressure tank located not more than one story below the highest supplied sprinkler line, filled by an automatic pump, and with a supply of water, all as described in §29-07(c), may be installed. In addition, a high-and-low air-alarm shall be provided.

(e) Subdivision b of §27-963(a) may be construed to permit the sprinkler connection to the street main to be the same size as the main sprinkler riser, but in no instance shall it be less than 2 inches. A tap may be one pipe-size less than the sprinkler main.

(f) When the number of sprinkler heads in any fire area as defined in these rules exceeds fifty-five (55), an approved Fire Department siamese connection shall be installed in accordance with the requirements of §27-940 of the Administrative (Building) Code.

(g) In lieu of applying the provisions of §27-956, sprinkler heads shall be so spaced that there shall be one head for approximately 144 square feet of floor area, and heads shall be spaced not more than 14 feet on centers. The distance from a wall or partition to the first sprinkler head shall not exceed 7 feet, measured at right angles to the wall or partition. A 12-pound minimum static pressure will be accepted at the topmost sprinkler line, provided the sprinkler heads are spaced to cover 100 square feet or less.

(h) In lieu of complying with the provisions of ANSI/NfiPA [*sic*] 13 of Reference Standard RS 17-2 of the Administrative (Building) Code, a 1-inch valve pipe may be extended from the top of the riser to the outside of the building, or inside the building to a deep sink for testing the system, pump and alarm under water-flow conditions.

(i) Check valves, gate valves, and water meters shall be installed as and when directed by the Department of Environmental Protection.

(j) *Definition.* **Sprinkler area.** The term "sprinkler area" as used in these rules shall mean any floor space within a structure

enclosed on all sides by exterior walls, fire walls, fire partitions, or fireproof [*sic*] partitions and self-closing doors acceptable to the Department of Buildings.

(k) The sprinkler control valves shall be inspected at least once weekly, by a competent person, who is employed by the owner and who holds a Certificate of Fitness to see that such valves are sealed open, A record of each inspection shall be kept for examination by a representative of the Department. The provisions of §27-957, in relation to alarm devices, shall not apply to those buildings having more than 36 heads in any sprinkler area.

(l) In conformity with the provisions of §27-957, sprinkler alarm devices shall be required when more than 36 heads are installed in any fire area.

(m) Where there are practical difficulties in the way of carrying out these rules, the Superintendent may permit modification, provided that the spirit of these rules are observed and safely secured.

§29-08 Installation of Sprinklers in Rooms of Class B Non-Fireproof Converted Dwellings and in Rooms Used for Class B Occupancy in Non-Fireproof Class A Converted Dwellings Under the Provisions of §194 of the Multiple Dwelling Law.

(a) *Applicability*. Sprinklers installed in rooms of class B non-fireproof converted dwellings, and in rooms used for class B occupancy in non-fireproof class A converted dwellings shall conform to the "sprinkler rules governing the installation of automatic sprinklers in the public halls of multiple dwellings. Under the provisions of §187 (Converted Dwellings) and §218(7) (Old Law Tenements) of the Multiple Dwelling Law, and of sprinklers in cooking spaces in all types of multiple dwellings under the provisions of §33 of the Multiple Dwelling Law," except as provided otherwise in these rules.

(b) *Sprinkler protection-when required*. In every room in a class B non-fireproof converted dwelling, and in every room used for class B occupancy in any non-fireproof class A converted dwelling, there shall be one or more sprinkler heads so arranged as to sprinkle all parts of such rooms. A sprinkler system in the public stairway or in the service stairway shall not be required by these rules, but sprinklers shall be provided for such stairways where required by the Multiple Dwelling Law or the provisions of other rules.

(c) *Spray type sprinklers*. Where approved spray type sprinkler heads are used, they shall conform to the requirements of the rules specified in subdivision (a) of this section, except that the protected area for approved 1/2 inch spray type sprinklers shall not exceed 168 square feet in area, and the distance between heads shall not exceed 14 feet and the maximum distance between such heads and a wall or partition shall not exceed 7 feet

(d) *Connection to existing sprinkler systems*. Where a separate sprinkler system exists in a building and such sprinkler system was installed prior to December 15, 1956, and the sprinkler system was approved by the Department of Buildings and is in good operating condition, piping for the sprinklers in rooms may be taken from the existing sprinkler riser at each story, provided the riser has a diameter of not less than one inch The size of the branch piping between the sprinklers and the riser shall be determined according to the number of sprinklers supplied but shall not be required to be greater in size than 1 1/4 inches in diameter, except that if the length of pipe exceeds 50 feet, the entire length of pipe shall be increased one pipe size for each 50 feet of length. Existing risers and mains of sprinkler systems shall not be required to be increased. The sprinkler heads installed in rooms shall not be counted in determining whether a siamese hose connection is required.

(e) *Installation where no sprinkler system exists*. Where it is required that sprinklers be provided in rooms and there is no existing approved sprinkler system in the building, a system of sprinklers shall be provided which shall conform to the requirements of the rules specified in subdivision (a) of this section and to the requirements of these rules in the same manner as if such sprinklers were existing except that mains shall be not less than 1 1/4 inches in diameter and that a siamese hose connection shall not be required, and except as follows:
Where the existing water supply piping is tested at any location within the dwelling and discharges at least 20 gallons of water per minute, at a flow pressure of not less than 10 pounds per square inch at the point of delivery, the existing house water supply main may be used provided the diameter of the main is not less than 3/4 inch, and provided a static pressure of at least 15 pounds per square inch is provided at the highest sprinkler. In such case, a riser for the sprinkler system shall be connected to the water main not more than 12 inches from the point where the main enters the building and on the house side of the main house control valve. No additional branch control valves shall be permitted. The size of the riser shall be determined by the number of sprinkler heads as required by the rules specified in subdivision (a) of this section, except that the riser shall not be required to be more than 1 1/4 inches in diameter regardless of the number of sprinkler heads provided. The size of branches shall be determined by the number of sprinkler heads, except that branches shall not be required larger than 1 1/4 inches in size. Risers and branches provided for the sprinkler system shall be used for no other purpose.

§29-09 Installation of Chlorinated Poly Vinyl Chloride (CPVC) Sprinkler Pipe and Fittings.

(a) Storage and Handling

CPVC piping shall be stored and carried in the original shipment containers whenever possible. Reasonable care should be exercised in handling the pipes. If improper handling results in splits, gouges or cuts and scratches that are not superficial in nature, the damaged section shall be cut out and discarded. Pipes must be covered with non-transparent material when stored outdoors without the original containers.

(b) Safety Precautions

All solvent cements and primers for CPVC piping are flammable and shall not be used or stored near heat, spark or open flames. Cement shall be stored in closed containers at temperatures between 40 ºF (4.4 ºC) and 110 ºF (43 ºC). They shall be used only with adequate ventilation. Containers shall be kept tightly closed when not in use and covered as much as possible when in use.

(c) Certification

Individuals installing CPVC piping shall be trained and certified by the manufacturer. Documentation of such certification of the individual shall be on the job site at all times when installation work is performed.

(d) Installation

(1) General

Sprinkler piping systems shall be laid out so that the piping is not located adjacent to heat producing sources such as light fixtures and ballasts, steam lines, etc. which can produce an ambient temperature exceeding 150 °F (66 ºC). CPVC pipes shall not be threaded, grooved or drilled.

(2) Concealed Installation

(i) For concealed installation, the minimum protection

shall consist of one layer of 3/8" (10mm) gypsum wallboard or a suspended membrane ceiling with lay-in panels or tiles having a weight of not less than 0.35 pounds per square foot (1.71kg/m²) when installed with metallic support grids, or ½" (13mm) plywood pipe enclosure. Plywood used for pipe enclosure shall be fire-retardant treated when used in buildings of non-combustible construction.

(ii) When pipes and fittings are installed in a plenum space, they shall not be positioned directly over open ventilation grills.

(iii) System risers shall not be installed exposed, and shall be provided with minimum protection for concealed installation as stated above.

(3) Exposed Installation

(i) Exposed sprinkler piping shall be installed below a smooth, flat, horizontal ceiling construction. Positioning of sprinkler heads relative to obstructions such as, but not limited to, beams, light fixtures or decorations shall be in accordance with Reference Standard RS 17-2, 17-2A and 17-2B.

(ii) Only quick-response sprinkler heads shall be used on exposed piping.

(iii) Deflectors of pendent sprinklers when installed shall be not more than 4" (102mm) from the ceiling, and sidewall sprinklers not more than 6" (152mm) from the ceiling and not more than 4" (102mm) from the sidewall.

(iv) Upright quick-response sprinklers when installed on exposed piping shall meet the following conditions:

(a) The deflectors shall be not more than 4" (102mm) from the ceiling.

(b) The maximum temperature rating shall be 155 ºF (68 ºC).

(c) The maximum distance from the ceiling to the centerline of the main run of pipe shall be 7½" (191mm).

(d) The maximum distance from the centerline of a sprinkler head to a hanger shall be 3" (76mm).

(4) Hangers and Supports

The pipe hangers shall comply with all the requirements of RS 17-2, 17-2A and 17-2B. The hanger shall not have rough or sharp edges which come in contact with the pipe. Hangers shall not bind the pipe from movement.

Nomianal Pipe Size		Maximum Support Spacing	
Inches	(millimeters)	Feet	(meters)
¾	(19)	5 ½	(1.675)
1	(25)	6	(1.830)
1 ¼	(32)	6 ½	(1.980)
1 ½	(38)	7	(2.135)
2	(51)	8	(2.440)
2 ½	(64)	9	(2.745)
3	(76)	10	(3.050)

TABLE A

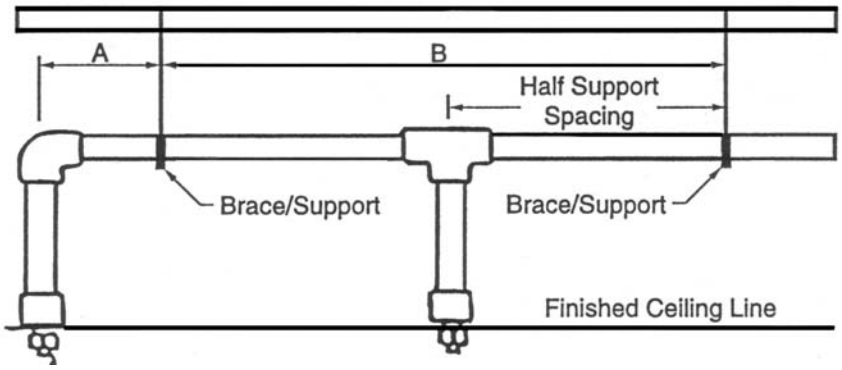
Maximum Support Spacing Distance End Line Sprinkler Head Drop Elbow

Norminal Pipe Size (In)	Less than 100 psi (689kPa)	More than 100 psi (689kPa)
¾" (19mm)	9" (229mm)	6" (152mm)
1" (25mm)	12" (305mm)	9" (229mm)
1 ¼" (32mm)	16" (406mm)	12" (305mm)
1 ½"-3" (38-76mm)	24" (610mm)	12" (305mm)

TABLE B

Maximum Support Spacing Distace Inline spinkler Head Drop Tee

Nominal Pipe Size (In)	Less than 100 psi (689kPa)	More than 100 psi (689kPa)
¾" (19mm)	4' (1.220m)	3' (0.915m)
1" (25mm)	5'(1.525m)	4' (1.220m)
1 ¼" (32mm)	6' (1.830m)	5'(1.525m)
1 ½"-3" (38-76mm)	7' (2.135m)	7' (2.135m)



(i) The support spacing shall be as shown on the following tables and diagram:
(ii) Vertical pipes shall be supported at each floor level or at 10 feet (3.050m) intervals whichever is less.
(iii) Other methods of pipe support shall be as recommended by the manufacturer.
(5) Pipe Cutting
Pipes shall be cut with a wheel-type plastic-tubing cutter. If any indication of damage or cracking is evident, cut off at least 2" (51mm) beyond any visible crack. Burrs and filings can prevent contact between pipe and fittings during assembly, and must be removed from the outside and inside of the pipe. A slight bevel shall be placed at the end of the pipe to ease entry of the pipe into the socket.
(6) Pipe Joints
(i) Primer and cement application.
The pipe and fittings shall be clean and free of any moisture and debris. Primer and cement shall be applied to the joining surfaces using an applicator. Puddling of cement or primer on or within fitting and pipe must be avoided. When cementing in temperatures below 40 °F (4.4 °C) make certain cement has not gelled. Gelled cement must be discarded.
A bead of cement should be evident around the pipe and fitting juncture. If this bead is not continuous around the socket shoulder, it should be rejected and the joint must be cut out, discarded and begun again.
(ii) Set and Cure Time
The assembly must be allowed to set, without any stress on the joint, in accordance with manufacturer's recommendations, which may vary from 1 to 5 minutes depending upon the pipe size and temperature. Refer to manufacturer's recommendation for minimum cure times prior to pressure testing.
(7) Sprinkler Installation
Sprinklers shall be installed only after all pipes and fittings, including sprinkler head adopters, are solvent welded to the piping system and allowed to cure for a minimum of 30 minutes. Sprinkler head fittings should be visually inspected and probed with a wooden dowel to insure that the waterway and threads are clear of any excess cement. Only Teflon tape or equivalent approved by the Commissioner shall be used when installing the sprinkler heads. If a leak is detected on the sprinkler head drop when the system is pressure tested, the sprinkler head must be removed and the joint redone before reinstalling the head.
(8) Firestopping
Pipe penetration through fire rated construction shall be firestopped as per Section 27-343 of the Building Code
(e) Hydrostatic Pressure Testing
After the installation is completed and cured, the system shall be pressure tested as per Section 27-967 of the Building Code. Air or compressed gas must never be used for pressure testing.

CHAPTER 30 STORAGE OF CERTAIN WASTE MATERIALS

§30-01 Enclosures of Premises Used for Automobile Wrecking, Storage of Scrap Metal, Junk, Scrap Paper or Rags, Storage of Lumber, and Building Material or Contractors' Yards.

(a) All existing or hereafter established yards or areas used for automobile wrecking, storage of scrap metal, junk, scrap paper or rags, including sorting of same, storage of lumber and other building materials, and open contractors' yards, unless the use is conducted entirely within a building enclosed on all sides, shall be completely enclosed by a solid fence or wall, of suitable uniform material and color at least eight feet high conforming to these Rules, the Administrative Code and the applicable provisions of the Zoning Resolution.

(b) Fences or walls shall be constructed or painted uniformly with one color.

(c) No material or racks shall be placed outside of, nor extend above the height of, the enclosing wall or fence.

(d) Fences and walls shall be maintained in good condition and appearance, and weakened or broken parts shall be repaired or replaced. Where paint has peeled or weathered to disclose the material under the paint or where the paint is dirty or faded, the wall or fence shall be repainted. Paint shall cover completely the material underneath.

(e) Walls or fences shall not encroach upon the public street nor upon the adjoining property.

(f) The following establishments are exempt from the requirements of these Rules:
(1) Electrical, glazing, heating, painting, paper hanging, plumbing, roofing or ventilating contractors' establishments, open or enclosed, with open storage limited to 5,000 square feet of lot area.
(2) Fuel, ice, coal or wood sales, open or enclosed, limited to 5,000 square feet of lot area per establishment.

§30-02 Open Lots Used for Storage or Sale of Motor Vehicles.

(a) *General.* (1) (i) These Rules shall apply to all open premises used for the storage or sale of more than four motor vehicles except as otherwise noted, including public parking lots, motor vehicles sales lots, accessory open parking spaces, etc. hereafter established and to all such existing premises hereafter enlarged or changed in location.
(ii) Before any premises is occupied for the storage or sale of motor vehicles, plans or diagrams and [***sic***] application shall be filed with the Department of Buildings by an applicant and a Certificate of Occupancy obtained from the Department. Application shall be made on forms furnished by the Department. Such Certificate of Occupancy shall contain inter alia, the maximum number of vehicles to be accommodated and the type of vehicle (private passenger or commercial).
(2) An application for or including an open parking lot shall be accompanied by a plan showing:
(i) dimensions of the plot and its location in relation to adjoining streets;
(ii) any structure existing or to be erected on the plot;
(iii)the relative elevations of the parking area, curbs and adjoining yards or courts;
(iv)the nature of the walls of adjoining structures, if any, i.e., whether masonry, frame, metal, etc.;
(v) retaining walls to be built;
(vi) retaining walls and open spaces, if any, on adjoining premises;
(vii) existing curb cuts and fences;
(viii)method of providing drainage of the lot;
(ix) material used to surface lot;
(x) etc. The applicant shall also submit such other information as may be requested by the Commissioner.
3. (i) Construction of curb cuts and sidewalks shall comply with the provisions of §27-558 of the Administrative Code.

No Certificate of Occupancy shall be issued unless a drop curb permit has been obtained.
(ii) Curb cuts must be a minimum of five feet from the intersection of two street lines.
(iii)For passenger vehicles with a capacity of not more than nine persons, the minimum width of a curb cut shall be 10 feet including splays, and the minimum width of all entrances and driveways leading to parking spaces shall be eight feet. For all other motor vehicles the minimum width of all driveways shall be 10 feet.
(iv) No motor vehicle may be stored or parked in any location where it would obstruct a required window or required exit.
(4) Openings in enclosures shall be restricted to vehicular entrances and exits on the street frontages. The width of a vehicular entrance and exit shall not exceed the length of the curb cut plus eight feet on each side or 46 feet, whichever is smaller.
(5) (i) Open parking lots shall be graded to conform approximately to the elevation of the abutting sidewalks and properties and shall be maintained so that no drainage will flow onto abutting sidewalks and adjoining properties. Grade separation between the parking lot and properties may be established if masonry retaining walls approved by the Commissioner are installed.

(ii) No resurfacing of porous surfaces shall be done which would increase the thickness to more than 1 1/2 inches after compaction. Maintenance repairs to maintain level surface or to insure adequate drainability of porous surfaces shall be preceded by breaking up and removal of existing asphaltic concrete. The Commissioner of Buildings may require suitable tests to be submitted of the materials used.

(iii)The entrance and exit driveways between the curb line and the open parking lot shall be paved in accordance with the provisions of §27-558 of the Administrative Code. The width of the driveway shall be the width of the opening in the enclosure.
(6) A sign which does not comply with all the requirements of the Administrative Code and the Zoning Resolution shall not be erected or maintained. Signs which may be erected shall be made secure, neatly lettered and properly maintained.
(7) (i) An open parking lot shall be occupied and used for the purpose stated on the Certificate of Occupancy; no other use, occupancy or service shall be conducted on the premises.

(ii) Space used for parking shall be entirely within the lot lines of the premises. Vehicles shall not encroach upon the sidewalks. Where a zoning restriction limits parking to a portion of the plot, the limit of the parking area shall be defined by a fence, wall milling or screening erected and maintained to the satisfaction of the Commissioner.

(iii) Every open parking lot shall be maintained in a clean and sanitary condition. The accumulation of rubbish or the storage of any kind of junk or waste is prohibited. Where a wood frame shelter, wood fence or railing are permitted, they shall be painted periodically in a [*sic*] neat, workmanlike manner and shall be properly maintained.

(b) *Additional rules to be applied where there are 10 or more motor vehicles.*
(1) Curb cuts shall conform to the requirements of §27-480(b), except for additional street frontage over 100 feet, there may be an additional curb cut for each 50 feet of frontage or major fraction thereof.
(2) (i) The premises shall have an enclosure on all interior lot lines and on street lines consisting of a substantial woven wire fence, iron picket fence, or masonry wall. A wood fence or railing may be acceptable at the discretion of the Commissioner in sparsely settled areas or outlying sections of the city. All enclosures shall be substantial and at least 4 feet high but may be omitted in cases where masonry walls of adjoining buildings abut the parking space. Such fences shall be installed in a permanent manner.

(ii) Bumpers shall be situated not less than one foot from adjacent property lines [*sic*] when vehicles are parked parallel to such adjacent property lines. Bumpers shall be situated not less than four feet from adjacent property lines when parked other than parallel to such adjacent property lines.

(iii)A steel guard rail or other substantial barrier designed in accordance with the provisions of §27-558(b) of the Administrative Code which will prevent any part of a vehicle from extending across a property line, may be accepted in lieu of bumpers.
(3) (i) Open parking lots which are to be operated during any portion of the time from 6 p.m. through 6 a.m. shall be adequately illuminated, and the minimum illumination shall be one-tenth of one watt per square foot of parking area, distributed over the entire area. Lights shall be provided with reflectors arranged so that the illumination is directed downward and away from adjacent buildings. Floodlights may also be used where such floodlights do not project light upon adjacent or nearby property.

(ii) For a public parking lot, an attendant's shelter conforming to the Construction Classification I-E of §27-271 of the Administrative Code, 100 square feet or less in area may be erected three feet from a lot line with no fire rating of the exterior walls required. Within three (3) feet, a fire resistive rating of at least two hours is required for the wall nearest the lot line.

(iii)Where there is an attendant's shelter, a copy of the Certificate of Occupancy shall be posted and maintained under glass in the shelter and a copy of the plan or diagram approved by the Department of Buildings shall be kept on the premises. Certified, reduced size, legible copies may be used for this purpose.
(4) Where strict compliance with any of these rules and regulations will create unnecessary hardship or will serve no useful purpose, the Commissioner may modify any part of these rules and regulations in a specific case if, in his opinion, the public health, safety and general welfare will not be endangered thereby, and such modification is in conformity with the general purpose of these rules and regulations.
(c) *Parking lots for four or fewer motor vehicles.*
Where there is hereafter established, provision for 4 or less motor vehicles, the premises shall comply with the applicable provisions of the Zoning Resolution in addition to sections of the above rules numbered (a)(1)(ii), (a)(2), (a)(3)(i), (a)(3)(ii), (a)(3)(iii), (a)(3)(iv)-(a)(5)(i), (a)(5)(ii)-(6)-(a)(7)(i), (a)(7)(ii), (a)(7)(iii)-(b)(4).

(d) *Existing open parking lots.*
Existing Open Parking Lots shall comply with the condition of their prior approval and with sections of the above rules numbered (a)(3)(i), (a)(3)(iv), -(a)(4)-(a)(5)(i), (a)(5)(ii), (a)(5)(iii)-(a)(7)(ii), (a)(7)(iii)-(b)(1)-(b)(2), (b)(2)(ii), (b)(2)(iii)-(b)(3)(i)-(b)(4).

Note: Before any business is conducted on any premises coming within the scope of these regulations, the person conducting or maintaining the business shall obtain such licenses as may be necessary from the Commissioner of Licenses, Department of Consumer Affairs, as required by §20-321 of the Administrative Code.
In addition to compliance with these rules, open parking lots shall comply with applicable provisions of the Zoning Resolution and such other laws as may apply.
The following rules previously promulgated by the Commissioner of Buildings will be repealed:
(1) Public Parking Lots, Filed with City Clerk October 13, 1964.
(2) Use of Vacant Land for Outdoor Motor Vehicle Sales Lot, filed with City Clerk April 22, 1955.
(3) Parking spaces Accessory to Permissible Uses, filed with City Clerk, January 11, 1955.
(4) Accessory Garages and Parking Spaces for Dwellings, filed with the City Clerk January 22, 1951.
(5) Open Parking Lots—Proposed Rules as published in November, 1968.

CHAPTER 31 SUSPENSION, REVOCATION OR LIMITATION OF REGISTRATION

§31-01 Suspension, Revocation or Limitation of Registration of Persons Who Present, Submit, Furnish or Seek Approval of Applications for Approval of Plans or Remove Any Documents from the Possession of the Department of Buildings.

(a) *Grounds for revocation, suspension or limitation of registration.* The Commissioner hereby authorizes the Department's Investigations Disciplinary Unit to give notice of a hearing to suspend, revoke or limit the registration of any person registered with the Department pursuant to Administrative Code §27-140.1 where investigation of such person and his or her activities reveals one or more of the following:
(1) Fraud or deceit in obtaining registration.
(2) Fraudulent dealings.
(3) Gross negligence, incompetence, misrepresentation or misconduct relating to the business, trade or calling of the person who is registered.
(4) Material misrepresentation made to persons not affiliated with the Department regarding the status of applications and/or plans filed with the Department.
(5) Poor moral character that adversely reflects upon fitness to engage in the activity for which registration is required pursuant to §27-140.1 of the Administrative Code [*sic*].
(6) Knowingly or negligently making false or misleading statements to the Department; or knowingly or negligently falsifying or allowing to be falsified any certificate, form, signed statement, application or report filed with the Department, or knowingly failing to submit a report required by law or the Department or willfully impeding or obstructing such submission, or inducing another person to do so.
(7) The conviction of a criminal offense relating to offering or receiving a bribe, giving or receiving unlawful gratuities, engaging in official misconduct, or other corruption-related acts, where the underlying act arises out of the registrant's occupation or business dealings with the City of New York or with any other governmental entity.
(8) Willful or negligent failure to comply with any rule, order or requirement of the Department of Buildings.
(9) Defacing or destroying Department property, or removing Department property, including permitted folders, from Department premises.
(10) Failure to notify the Department of any change in circumstances of employment, for example, change in employer.
(11) Assisting any exempt individual in the commission of any of the above proscribed acts.

(b) *Procedures for the conduct of a hearing regarding suspension, revocation or limitation of registration.*
(1) After a hearing in accordance with the procedures set forth below, and a determination that evidence supports any one or more of the types of misconduct described in subdivision (a), the Commissioner shall have the power to suspend, revoke or limit registration as provided in §27-140.1 of the Administrative Code and these rules.
(2) The hearing shall be conducted by the Office of Administrative Trials and Hearings (OATH) and governed by the rules of procedure utilized by that tribunal.
(3) After the conclusion of the hearing, OATH shall issue proposed findings of fact and conclusions of law where appropriate, along with a report and recommendation to the Commissioner. The Commissioner shall review the report and recommendation issued by OATH and shall issue a final decision. The Commissioner shall notify the registrant in writing of the Commissioner's decision. Such notice shall include a written statement indicating the reason for the decision.

CHAPTER 32 WALLS

§32-01 The Design and Installation of Curtain Wall and Panel Wall (Non-Loadbearing Exterior Wall) Systems.

(a) *Definition.*
Curtain wall or panel wall system. For the purpose of these rules, a curtain wall or panel wall system shall be defined as an exterior building wall, in skeleton frame construction which carries no roof or floor loads. Panel walls are attached at each story and may be wholly supported at every story or other stories. Curtain and panel walls consist of materials, veneering or assemblies other than loadbearing walls of stone, brick, hollow tile, concrete block, or tile, or combination of them, bonded together with mortar and laid up in place, or of concrete poured in place. Curtain and panel walls may include glass, metal, [*sic*] stone or masonry elements arranged in such a manner so as not to intentionally exert common action under load. Such elements move independently of each other and the supporting structure.

(b) *Applicability*. These rules and regulations shall not apply where such wall systems or any portion thereof does not extend more than forty feet above legal grade.

(c) *Factors to be considered*. The Licensed Professional Engineer and/or Registered Architect of record shall be responsible for the design of the wall system. The Licensed Professional Engineer and/or Registered Architect may designate such responsibility to other licensed professionals.
The Licensed Professional Engineer and/or Registered Architect of record or designee shall provide information to, and cooperate with, the designer for the wall system so that singly or jointly the following factors shall be considered:
(1) *Movements of the skeleton frame structure*. Care shall be

exercised in the design in order to prevent the transmission of loads from the building structure into any part of the wall system through the connections or adjacent building elements or components. In this regard, the following items shall be amongst those considered:

(i) Sidesway in buildings over 100 feet in height.

(ii) Elastic deformation of members supporting curtain or panel walls such as live load deflections of spandrel beams, differential live load deflections, etc. Short-term and long-term deflection are particularly significant in concrete frames.

(iii) Creep and shrinkage of concrete frames.

(iv) Thermal movements.

(2) *Dimensional changes of the building structure and of the curtain wall supports.*

(3) *Differential* [*sic*] *movement involving the building structure and veneer*.

(4) *Construction and related trade requirements such as*:

(i)Window supports.

(ii) Window washer tracks.

(iii)Back-up walls and insulation.

(iv)Construction tolerances.

(5) *Protection against water damage.* In this regard, the following items shall be considered:

(i)The protection of veneering joints. Care should be taken in the selection of sealants.

(ii) The location of expansion joints.

(iii)The possibility of a secondary system for controlling water which may enter veneering joints because of design or installation failure, sealant failure, or condensation.

(iv)The prevention of trapping water in wall components.

(v) The use of lap strips in joints/splices of extrusions.

(6) *Prevention of failures.* In this regard, the following items shall be considered:

(i) Specifying performance criteria for veneering.

(ii) Testing for water leakage of specimen wall sections.

(7) *Completeness of architectural drawings*.

(i)They shall contain adequate details of the wall assemblies.

(ii) Termination details of roof and store front.

(8) *Fabrication, installation and maintenance requirements*.

(i) Sufficiency of the horizontal and vertical expansion joints for thermal and other building movements.

(ii) Fabrication and erection tolerances of the connections.

(iii)That the flashing, weep-holes and air circulation have been designed for water defense to prevent uncontrolled water infiltration.

(iv)The prevention of electro-chemical reaction (galvanic action) from use of dissimilar metals.

(v) The anchoring and supporting system is suitable to the building materials.

(vi)The connection design is feasible.

(vii) The testing program is feasible and adequate.

(viii)The selection of the stone.

(ix)The anchor locations, including proper anchor-holes, kerfs, or slots.

(x) The transportation and handling requirements. Panelized units shall be handled and transported if possible in the position in which they are going to be anchored on the building. If other positions have to be used during transit, the panels and the stone anchors should be designed for such positions also.

(d) The general contractor, to whom the work permit is issued, shall be responsible for the fabrication and installation of the wall system.

The general contractor may retain, designate or sub-contract such responsibility to Licensed Professional Engineers, Registered Architects, construction superintendents, contractors, sub-contractors, and manufacturers.

(1) They shall receive information from, and cooperate with the licensed professionals and designer for the wall system, so that singly or jointly the factors enumerated in §32-01(c) shall be considered in the fabrication and installation.

(2) They shall ascertain that the fabrication and installation of the wall system is done in a safe, workmanlike and generally acceptable manner in accordance with:

(i)The Administrative (Building) Code and the Department of Buildings' Rules and Regulations and Directives and Memorandums.

(ii) The Department of Buildings' Approved Applications and Plans.

(iii)The Contractors' Specifications and developed Plans.

(iv)The Accepted Erection and Shop Drawings.

(v) The Manufacturer's recommendations.

(e) The general contractor, to whom the work permit is issued, or his retainee, designatee, sub-contractor or manufacturer responsible for the wall system shall submit the shop drawings and the computations employed to the Licensed Professional Engineer or Registered Architect of record for their acceptance.

(f) The Licensed Professional Engineer or Registered Architect of record shall review the shop drawings and any computations of the wall system for compliance with plans approved by the Department of Buildings, and with the applicable provisions of the Building Code, its reference standards, and the Rules on Exterior Veneering Materials, adopted by the Board of Standards and Appeals, and he shall certify his approval or acceptance of such shop drawings and computations to the Department of Buildings.

(g) A copy of the shop drawings referred to above, marked approved or accepted by the Licensed Professional Engineer or Registered Architect of record shall be available in the field for use in the installation of the wall system until the application is signed-off as completed by the Department of Buildings.

(h) The general contractor, to whom the work permit is issued or his retainee, designatee, sub-contractor, or manufacturer responsible for the fabrication and installation of the wall system, shall certify to the Department of Buildings that the materials and shop fabrications to be supplied by him are in conformance with the approved or accepted shop drawings and with applicable national standards and §27-132(a) of the Building Code of the City of New York.

(i)The requirements of §§32-01(a) through (f) above shall be complied with before the installation of the wall system is begun.

(j)The installation of the wall system shall be subject to controlled inspection as specified in §27-132(a) of the Building Code. It shall be the responsibility of the person performing the controlled inspection to see that the wall system or its component parts is incorporated into the work in a workmanlike manner and in compliance with the approved or accepted shop drawings.

(k) The controlled inspection field check shall include but not limited to the following:

(1) The supporting structure is:

(i) Properly aligned and within the designed tolerances.

(ii) Without missing or mislocated inserts.

(2) The framing components are:
(i) Properly sized and aligned.
(ii) Without missing or mislocated anchoring provisions.
(iii) Without structural defects. (In stone, weak seam, hairline cracks, etc.)
(3) The vision and spandrel lites are not defective.
(4) Anchors are properly placed, welded, bolted or primed.
(5) Accepted anchoring or materials are used in lieu of others where there are field changes.
(6) Weeps and tubes are in place.
(7) The joinery is properly sealed.
(8) Accepted sealants with sufficient elongation capability are provided.
(9) The gaskets meet specifications.
(10) The end dams are sealed where called for.
(11) Horizontal and vertical movement joints have been provided.
(12) "Erection shims", "wedges", mortar draps [*Probably intended "drafts"*] or other material in movement or expansion joints have been removed.
(13) Observation of unanticipated movements.

(l) The samples submitted to, and marked approved or accepted by the Professional Engineer or Registered Architect of record, consisting of, but not limited to sealants, glass and fasteners shall be available in the field until the application is signed-off as completed by the Department of Buildings.

(m) The alteration of an existing wall system for other than ordinary repairs, whether made voluntarily or as a result of damage, deterioration, or other cause, in its entirety or for a portion thereof, shall be made to comply with the pertinent provisions of Article 12 of Subchapter 10 of Chapter 1 of Title 27 and Reference Standard RS 9-5 and all other requirements of the new Building Code, effective December 6, 1968 as amended and/or the Rules on Exterior Veneering Materials, adopted by the Board of Standards and Appeals, regardless of the percentage which the cost of making the alteration bears to the value of the building.

(n) The Registered Architect or Professional Engineer responsible for controlled inspection shall report unsafe wall system conditions to the Department of Buildings.

(o) The Registered Architect or Professional Engineer responsible for controlled inspection shall submit to the Department of Buildings signed copies of required inspection and test reports (of the work in progress) and comment as to the conformance of material and work to Code requirements.

§32-02 Conditions of a Building's Exterior Walls and Appurtenances That Constitute Conditions Dangerous to Human Life and Safety.

(a) *Pertinent conditions*.
The following violations are determined to constitute conditions dangerous to human life and safety and are subject to the provisions of Paragraph 3 of Subdivision d of §26-248 of the Administrative Code. Any condition relating to the exterior walls of a building and appurtenances thereof that is designated:
(1) by an architect or engineer as being in an unsafe condition in the report filed by an architect or engineer with the Department of Buildings pursuant to §27-129 of the Building Code, or
(2) by personnel of the department as being an unsafe condition upon reviewing the aforementioned [*sic*] report or after having made an inspection of the building.

(b) *Civil penalties*. Pursuant to §26-248(d)(3) of the Administrative Code, in the event any person fails to remove any of the violations listed in this rule, after having been served with a notice personally or by certified mail indicating that such conditions exist and requiring removal or compliance, unless the removal of such condition is prevented by a labor dispute or is the result of vandalism beyond the control of the owner, such person shall, in addition to any other prescribed penalty, be liable for a civil penalty of not less than $150 per day commencing on the date of the service of such notice and terminating on the date that such removal or compliance has been substantially completed. When service of such notice is made by mail to the owner, liability for civil penalties shall commence five days from the date of such mailing.

(c) *Discontinuance of action upon removal of violation*. Pursuant to §26-248(f) of the Administrative Code where a notice requiring removal of a violation listed in this rule has been issued, liability shall cease, and the Corporation Counsel, on request of the Commissioner of Buildings, shall discontinue prosecution of the civil penalty action only if the removal or compliance so required has been completed or substantially completed within ten days after the service of such notice. The Commissioner shall, upon good cause shown, grant additional time for such removal or compliance. In addition, the civil penalties shall be tolled from the date the owner certifies under oath, on a form prescribed by the Commissioner, that the removal of the violation has been substantially completed. If a subsequent inspection by the department shows a failure to have removed the violation, the civil penalties shall be deemed to have accrued as of the first day a notice of violation has been served.

(d) *Explanation*. This rule declares that a condition relating to the exterior walls of a building and appurtenances thereof that is designated to be an unsafe condition by an architect or engineer in a report filed pursuant to Administrative Code §27-129 or by personnel of the Department of Buildings, is a condition dangerous to human life and safety. The failure to remove such a violation after notice subjects the violator to the penalties set forth in the [*sic*] Administrative Code §26-248(d)(3), including a civil penalty of $150 per day from the date that such removal has been substantially completed.

§32-03 Periodic Inspection of Exterior Walls and Appurtenances of Buildings.

(a) *Definitions*.
Critical examination. Critical examination means an examination conducted to review the exterior of a building and all parts thereof to determine whether the exterior walls and the appurtenances thereto are safe, unsafe, or safe with a repair and maintenance program and whether, in the judgment of a Registered Architect or Professional Engineer, they require remedial work.
Unsafe condition. Unsafe condition means a condition of a building wall, any appurtenances thereto or part thereof that is dangerous to persons or property and requires prompt remedial action. In addition, any condition which was reported as safe with a repair and maintenance program in an earlier report and which is not corrected at the time of the current inspection shall be reported as an unsafe condition.
Safe. Safe means a condition of a building wall, any appurtenances thereto or any part thereof not requiring repair or maintenance

to sustain the structural integrity of the exterior of the building and that will not become unsafe during the next five years.

Safe with a repair and maintenance program. Safe with a repair and maintenance program means a condition of a building wall, any appurtenances thereto or any part thereof that is safe at the time of inspection, but requires repairs or maintenance during the next five years in order to prevent its deterioration during that five year period into an unsafe condition.

Standard reporting period. The standard reporting period is the time interval established by the Commissioner of Buildings for the filing of each successive report for each successive critical examination of every building subject to the requirements of Local Law 10 for the Year 1980 as amended by Local Law 11 for the Year 1998.

(b) *Critical examinations.*

(1) *Requirements.*

(i) In order to maintain a building's exterior walls and appurtenances in a safe condition in accordance with §27-129 of the Administrative Code, a critical examination of all parts of all exterior walls and any appurtenances thereto shall be conducted at periodic intervals, which are at least once every five years, of all existing buildings or buildings hereafter erected that are greater than six stories in height, except for those parts of any exterior wall which are less than twelve inches from the exterior wall of an adjacent building.

(ii) The second critical examination shall be conducted within two years after February 21,1985 for all buildings covered by the first examination cycle. The initial critical examination for any building erected subsequent to February 21,1982 shall be conducted in the fifth year following the erection or installation of any exterior walls and/ or enclosures. Subsequent critical examinations shall be conducted within five years from the previous examination.

(iii) Regarding buildings in existence on March first, nineteen hundred ninety-eight, initial critical examinations of exterior walls or parts thereof and any appurtenances thereto which were not subject to such examinations under the provisions of paragraph (i) of subdivision (1) of section (b) of these rules in effect prior to March first, nineteen hundred ninety-eight, and which did not have a critical examination for which a report was filed prior to February twenty-first, nineteen hundred ninety-seven, shall be conducted prior to March first, two thousand.

(2) *Inspection procedures.*

(i)Before any exterior wall for any building is critically examined, the Registered Architect or Licensed Professional Engineer (hereinafter referred to as "professional") employed by the owner of the building shall carefully review the most recent report and any previous available reports. The Buildings Department will maintain a file of such reports submitted in conformance with §27-129, and furnish copies upon payment of fees set forth in §26-214.

(ii) Such examination shall be conducted and witnessed by or under the supervision of a professional retained by or on behalf of the owner of the building. It shall be done to the best of his/her knowledge and belief.

(iii) The professional shall determine methods employed in the examination, but he/she need not be physically present at the location where the examination is made. Under the professional's supervision, technicians, tradesmen, contractors, and engineers-in-training may be delegated selected inspection tasks. These individuals need not be in his/her employ.

(iv) The methods used to examine the building shall permit a complete inspection of same. Except as herein required, the use of a scaffold or other observation platform is preferred, but the professional may use other methods of inspection as he/she deems appropriate. A physical examination from a scaffold or other observation platform is required for a representative sample of the exterior wall. The professional shall determine what constitutes a representative sample. The representative sample must include at least one physical examination along a path from grade to top of an exterior wall on a street front using at least one scaffold drop or other observation platform configuration.

(v) The known history of the building, the nature of the materials used and the conditions observed will dictate the extent of the critical examination.

The Registered Architect or Licensed Professional Engineer [sic] shall utilize a professional standard of care to detect splitting or fracturing of terra cotta on buildings, cracking of masonry and brick work in brick faced buildings, loosening of metal anchors and supports, water entry, movement of lintel angles, etc., and shall ascertain the cause of these and such other conditions detected. The professional shall order any special inspections and/or tests that may be required. The removal of portions of the façade in order to facilitate the performance of tests may require a permit from the Landmarks Preservation Commission.

(vi) During the course of the critical examination, photographs shall be taken and/or sketches made to properly document the location of all conditions observed that are either unsafe or safe with a repair and maintenance program.

(vii) Upon discovery of any unsafe condition, the professional shall immediately notify the Borough Commissioner and the owner of the building by letter or fax.

(3) *Report requirements.*

(i) The professional shall submit to the Commissioner and to the Owner of the building a written report as to the result of such examination, clearly documenting all conditions not classified as safe and stating that the inspection was performed and completed in accordance with the New York City Administrative Code.

(ii) The report shall include:

(A) The address, any a.k.a. addresses, the location from the nearest cross street, and Block and Lot numbers;

(B) The landmark status of the building;

(C) The name, mailing address and telephone number of the owner of the building, his agent or the person in charge, possession or control of the building;

(D) (a) The description of the building including number of stories, height, plan dimensions, Certificate of Occupancy number, if available, usage, and age and type of exterior wall construction;

(b) Brief history of any settlements, repairs, revisions to exterior enclosures, if available;

(E) A detailed description of the procedures used in making the critical examination;

(F) A detailed description of the extent and location of all physical examinations performed;

(G) A report of all conditions including significant deterioration and movement observed as well as a statement concerning the apparent water-tightness of the exterior surfaces, and the deleterious effect of exterior appurtenances, including exterior

fixtures, flagpoles, signs, parapets, copings, guard rails, window frames (including hardware and lights), window guards, window air conditioners, flower boxes, etc. The report shall classify each such condition as safe, unsafe or safe with a repair and maintenance program;
(H) The causes of the reported conditions;
(I) The status of the exterior maintenance;
(J) Comparison of observed conditions with conditions observed during previous examinations, including status of the repairs or maintenance performed with respect to the prior conditions;
(K) Recommendations for repairs or maintenance, if appropriate, including the recommended time frame for same to be performed;
(L) Date of start and completion of the critical examination;
(M) The seal and signature of the professional under whose supervision the critical examination was performed shall be on the written report;
(N) If there are no unsafe conditions and no conditions that are safe with a repair and maintenance program, then the building shall be classified as safe;
(O) If there is at least one unsafe condition, then the building shall be classified as unsafe;
(P) If there is (are) a(ny) condition(s) that is (are) safe with a repair and maintenance program and there are no unsafe conditions, then the building shall be classified as safe with a repair and maintenance program;
(Q) The professional shall not file a report of the same condition that is safe with a repair and maintenance program for the same building for two consecutive filing periods. Unless the professional certifies to the correction of all conditions identified in the earlier report as requiring repair the building shall be classified as unsafe;
(R) Photographs and/or sketches documenting the location of any conditions that are either unsafe or safe with a repair and maintenance program;
(S) A statement by the professional indicating which repairs and/or maintenance require the obtaining of work permits prior to their commencement.
(4) *Report filing requirements.*

(i) Any building existing as of the date of the passage of Local Law 10 of 1980 shall file a report of the second examination of the building's exterior walls and appurtenances thereto no sooner than February 21, 1985 and no later than February 21, 1987, and thereafter no sooner or no later than February 21 of each fifth subsequent year.

(ii) Any building of which the erection or installation of any exterior wall or enclosures reached a height greater than six stories or for which a Temporary Certificate of Occupancy or Certificate of Occupancy was received prior to January 1, 1983 shall be required to file a report no later than February 21, 1987, and thereafter no later than February 21 of each fifth subsequent year.

(iii) Any other building of which the erection or installation of any exterior wall or enclosures reaches a height greater than six stories shall be required to file an initial report five years from the date when such height is obtained, and thereafter a report each subsequent fifth year; however, such initial report shall be filed no later than five years from the date a Temporary Certificate of Occupancy, or Certificate of Occupancy, whichever is sooner, is received.
However, if the date reached five years from such issuance falls between the standard reporting periods, the filing shall be made during the first standard reporting period following the five-year date.

(iv) Persons or entities wishing to perform the critical examinations of and the report filing for the exterior walls referenced in Section (b) (1) (iii) of these rules in conjunction with the critical examinations of, and the report filing for the exterior walls otherwise scheduled for critical examinations and report filing from February twenty-first, two thousand until February twenty-first, two thousand two may perform such combined critical examinations and file such combined reports no earlier than February twenty-first, nineteen hundred ninety-nine and no later than March first, two thousand.

(v) Each written report shall be accompanied by a signed statement by the owner of the building acknowledging receipt of a copy of it and acknowledging awareness of the required repairs and/or maintenance, if any, and the time frame for same.

(vi) Each written report shall be submitted in original and in microfilm form to the appropriate Borough Office of the Department of Buildings. It shall be accompanied by an Exterior Periodic Inspection Report Form in triplicate, one copy of which may be retained by the applicant.
(5) *Unsafe conditions.*

(i) Upon the filing of the professional's report of an unsafe condition with the Department, the Owner of the building, his or her agent, or the person in charge of the building shall immediately commence such repairs or reinforcements and any other appropriate measures such as sidewalk sheds, fences, and/or safety netting as may be required to secure the safety of the public and to make the building's walls and/or appurtenances thereto conform to the provisions of the Building Code.

(ii) All unsafe conditions shall be corrected within 30 days from the filing of the critical examination report.

(iii) The professional shall inspect the premises and file a detailed amended report stating the condition of the building with the Borough office within two weeks after repairs to correct the unsafe condition have been completed.

(iv) The Commissioner may grant an extension of time of up to 90 days to complete the repairs required to remove an unsafe condition upon receipt and review of an initial extension application submitted by the professional, together with:
(A) Copy of original report with attachments;
(B) Notice that the premises have been made safe by means of a shed, fence or other appropriate measures;
(C) Copy of contract indicating scope of work to remedy unsafe conditions;
(D) Professional's estimate of length of time required for repairs;
(E) Notarized affidavit by owner of the building that work will be completed within stated time of professional's estimate.

(v) A further extension will be considered only upon receipt and review of a further extension application, together with notice of:
(A) Substantial completion of work but subject to an unforeseen delay (e.g., weather, labor strike), or
(B) Unforeseen circumstances (e.g., fire, building collapse), or
(C) Nature of hazard requires more than 90 days to remove (e.g., new wall to be built).

(6) *Conditions that are Safe with a Repair and Maintenance Program.*

(i) The owner of the building is responsible for ensuring that the conditions described in the critical examination report as safe with a repair and maintenance program are repaired, and all actions recommended by the professional are completed within the required time frame, and are not left to deteriorate into unsafe conditions before the next critical examination.

(ii) The professional shall not file a report of the same condition that is safe with a repair and maintenance program for the same building for two consecutive filing periods.

(iii) A certification must be made by the professional attesting to the correction of all conditions identified in the earlier report as requiring repair.

(iv) The professional shall report conditions that were previously reported as safe with a repair and maintenance program as unsafe if not corrected at the time of the current inspection.

§32-04 Masonry Parapet Walls.

(a) *Definition.* **Parapet.** The term "parapet" shall mean the continuation of an exterior wall, fire wall, or party wall above the roof line. §27-232 Administrative Code.

(b) *Basic requirements.* Parapet walls of masonry constructed hereafter shall comply with the following requirements:

(1) They shall meet the requirements of Reference Standard §[*sic*]10-1, §10.4c of the Administrative Code.

(2) Structural members supporting parapet walls shall be designed to resist torsional stresses in addition to stresses due to bending, where loads are placed eccentrically.

(c) *Existing and new parapet walls.* Owners of those buildings which are provided with masonry parapet walls, except where such walls are located on buildings used exclusively for J-3 occupancy, shall have the parapet walls inspected annually by a competent person, such as a bricklayer, building superintendent, builder, architect, or engineer. Any wall found to be in an unsafe condition shall be removed promptly. Any parapet wall found to be out of plumb by a horizontal distance exceeding one-eighth of its height, shall be removed.

(d) *Replacement.* Parapet walls that are removed shall be replaced when the parapet wall is required by the provisions of §27-333 of the Administrative Code

CHAPTER 33 EXEMPTIONS FROM CIVIL PENALTIES

§33-01 Exemption from Civil Penalties Imposed Pursuant to Administrative Code §26-212.1 (Work Performed Without a Permit).

(a) *Acceptance of waiver request.*

(1) If a violation is issued for work in progress after January 1,1989, no claim of exemption from a civil penalty imposed pursuant to Administrative Code §26-212.1 will be considered.

(2) If a building owner claims exemption from such penalty on the grounds [*sic*] that all work was completed prior to January 1,1989, such claim must be substantiated by an affidavit and supporting data.

(3) Partial exemption from such penalty may be claimed on the grounds [*sic*] that a building owner applies for a permit subsequent to the commencement of work for which such permit is required but prior to the completion of such work. Such owner may claim exemption from such penalty for that part of such work which is completed after such permit is issued. Such claim shall be filed at the time of application for such permit and shall be substantiated by an affidavit and supporting data.

(b) *Burden of proof.*

(1) The burden of proof is on the owner claiming such exemption.

(2) Supporting data shall consist of one or more of the following:

(i) dated receipt or cancelled check showing payment for work completed or materials delivered;

(ii) signed contract specifying dates by which work is to be completed;

(iii) affidavits from contractors or building supply warehouses concerning the subject illegal work;

(iv) written estimates proposed by contractors prior to commencement of the subject illegal work;

(v) dated photographs of the subject property;

(vi) proof of compliance with Workers' Compensation Law insurance requirements;

(vii) a survey of the subject property made prior to January 1, 1989; [*sic*]

(viii) any other documents deemed acceptable by the Commissioner.

(3) While no one of the above-listed documents will be deemed dispositive, appropriate weight will be accorded to the application in its entirety, taking into account the particular facts and circumstances on a case-by-case basis.

(c) *Where to file.*

All claims for exemptions pursuant to these regulations must be submitted in writing to the Borough Superintendent of the appropriate borough office. The Borough Superintendent will review the claim and supporting documents and will advise the claimant of the decisions of the Department.

CHAPTER 34 ELECTRICAL CODE RULES

Subchapter A Phase-in of Electrical Code Technical Standards

§34-01 Phase-in of new standards for electrical work. In accordance with subdivision a of section 27-3024 of the administrative code, the commissioner hereby extends the date of application of the electrical code technical standards as hereinafter provided. During the period from January 1, 2003 through June 30, 2003 (the phase-in period) electrical work, including low voltage electrical work, may be performed either in accordance with the electrical code technical standards adopted pursuant to section 27-3024 of the administrative code or in accordance with the standards set forth in subchapter 2 of chapter 3 of title 27 of the administrative code as in effect prior to January 1, 2003, and the Bulletins, Code Committee Interpretations and rules issued pursuant to such subchapter (the old electrical code) at the option of the licensed master or special electrician or other authorized person performing the work. On and after July 1, 2003 all electrical work shall be performed in accordance with the electrical code technical standards.

§34-02 Review of applications for electrical permits and certificates of electrical inspection during the phase-in period. An application for an electrical permit or certificate of electrical inspection, including an application for the legalization of unfiled work, filed during the phase-in period shall indicate whether the application is to be reviewed in accordance with the electrical code technical standards or the old electrical code. On and after July 1, 2003 all applications, including applications for the legalization of unfiled work shall be reviewed in accordance with the electrical code technical standards.

§34-03 Temporary certification to perform low voltage electrical work. During the phase-in period business entities engaged in the business of installing, maintaining or repairing communication, signaling, alarm or data transmission systems may continue to perform low voltage electrical work in accordance with paragraph two of subdivision a of section 27-3017 of the administrative code pending the adoption of rules

setting forth the requirements and procedure for the certification of low voltage installers.

§34-04 Definitions. For the purposes of this chapter, the following terms shall have the following meanings:

Electrical Code: The term "Electrical Code" means Chapter 3 of Title 27 of the Administrative Code of the City of New York. Such term shall include the Electrical Code Technical Standards.

Electrical Code Technical Standards: The term "Electrical Code Technical Standards" means the edition of the National Fire Protection Association NFPA 70 National Electrical Code ("NEC") currently adopted by New York City with such amendments as may be enacted by local law.

§34-05 Electrical advisory board. a. In accordance with section 27-3005(a)(7) of the Administrative Code, the Commissioner shall appoint a special board, to be known as the "electrical advisory board." The electrical advisory board shall provide advice regarding (i) the approval of the use of electrical appliances, devices, and materials not otherwise approved for use by the Electrical Code, (ii) the granting of approval to use wiring or appliances not otherwise allowed by the Electrical Code Technical Standards and (iii) the granting of approval for specified types of electrical installations. The members of the board shall be appointed annually and shall serve at the pleasure of the Commissioner. The number of members and their organizational affiliations shall be at the discretion of the Commissioner. The board shall have a Chair and Vice-Chair appointed annually by the Commissioner.

b. Electrical advisory board review shall be required in the following circumstances:

(1) Electrical Installations:

(a) Electrical advisory board review shall be required where service equipment totals 1000 Kilo-Volt Amperes ("KVA") or greater, or where any new alteration or addition to an electric service installation causes the altered installation to total 1000 KVA or greater, as further detailed below:

(A) A new installation of equipment totaling 1000 KVA or higher;

(B) Any change in an installation with a rating of 1000 KVA or higher, up to and including the second level overcurrent protection, unless it was fully described and approved as "future" on the original approved plan.

(C) Any addition to an existing installation which would bring the total to 1000 KVA or higher.

(D) A new installation or revised installation above 600 volts, irrespective of KVA rating.

(E) The addition of any equipment in a room, which would affect clearances around the equipment of a 1000 KVA installation.

(b) Electrical advisory board review shall be required where proposed electrical installations involve appliances and materials not covered by the Electrical Code Technical Standards.

(2) Electrical Equipment or Materials. Electrical advisory board review shall be required for manufactured wiring systems, low voltage lighting systems, painting equipment /spray booths, and electrical equipment not specifically addressed in the Electrical Code Technical Standards and any other electrical equipment not bearing the label of approval of an electrical testing laboratory acceptable to the Commissioner.

c. Filing Requirements for Electrical Advisory Board Review.

(1) Filing requirements for Electrical Installations 1000 KVA or Greater, or New or Revised Installations above 600 Volts

(a) A cover letter, payment as specified in (d) below, and 2 sets of complete drawings shall be filed at:

DEPARTMENT OF BUILDINGS
Bureau of Electrical Control
(address provided in the City's website, http://www.nyc.gov)

(b) Submission shall be made by a New York City Licensed Master or Special Electrician, a New York State Licensed Professional Engineer, or an individual with comparable qualifications from an outside jurisdiction.

(c) A filing fee of $650.00 shall be paid for each submission, no part of which shall be refundable.

(d) Payment shall be made by a money order or corporate/business check, a bank check or a certified check, and shall be made payable to "Department of Buildings."

(e) Requirements for Plans and Drawings. All submissions for electrical advisory board review for service equipment totaling 1000 KVA or more or above 600 Volts shall include the following plans/drawings:

- One line diagram
- Plan view / service equipment room layout
- Physical details of switchboard & distribution panel equipment as per the following requirements:

(A) All drawings shall be clear, legible, and use standard notations. All drawings shall be folded to 8 1/2" x 11," except for equivalent electronic versions authorized by the Department.

(B) Installations that are not all new shall clearly mark what is new and what is existing. In addition, all new work shall be encircled by a 'bubble' or 'cloud' on the drawings.

(C) For residential installations, the calculations justifying a de-rating of the neutral shall be submitted.

(D) The plan view shall be drawn to scale, showing the point of service entrance into the building. If the building sets back from the property line, the underground service feeder shall be shown, including wire and raceway sizes.

(E) The arrangement of service equipment and its proximity to the point of service entrance shall be shown, complete with details of the equipment, and the manner in which service will be extended to the service equipment. If the switchboard is free standing, the clearance around the switchboard shall be shown.

(F) The location of the main switchboard and/or distribution panels in relation to the service equipment and how they are interconnected shall be shown.

(G) The location of the electric service room with respect to the surrounding areas shall be shown.

(H) The means of egress from the switchboard room and where it leads to shall be shown. The legal exit(s) to which egress door(s) lead shall also be shown.

(I) When there is more than one service location within a building, drawings shall contain a notation indicating that signs are posted at the entrance door of each switchboard room showing the location of all the other switchboard rooms. The location and wording of the signs shall be specified.

(J) If the existing service equipment and/or point of service entrance is to be discontinued, the drawings shall so state.

(K) If existing service equipment is to remain in conjunction with new service equipment and is to be supplied by the same service entrance, the drawing shall indicate the make and size of the existing service

equipment, the size and location of the ground strap, and the type and size of the fuses in the existing equipment.
(L) The drawing shall show grouping of service equipment at the point of service entrance.
(M) The drawing shall show ventilation of the room when the service equipment totals 2000 KVA or larger (this may be in the form of a note on the drawing).
(N) The drawing shall show the available short circuit current at the point of service entrance and at the point of change in the interrupting rating of the overcurrent protection. Where used, series ratings shall be indicated.
(O) A statement confirming that all fuses and/or circuit breakers have been coordinated for selective short circuit overcurrent protection shall be on the drawing.
(P) A one line diagram shall be submitted indicating the service equipment and the distribution equipment up to the 2nd level overcurrent protection, showing all overcurrent devices with their ampere rating, make and type, interrupting current ratings and bus and wire sizes. Frame and trip sizes for circuit breakers shall be indicated.
(Q) Drawings shall indicate that transformers are properly grounded. Service and distribution equipment proposed for future installation shall be marked on the drawings as "future."
(R) All voltages shall be clearly shown on the drawings, which shall include voltages pertaining to all of the equipment overcurrent protection up to and including the second level protection.
(S) Drawings shall note that cables used in a trough shall be grouped A, B, C, & N respectively. Where troughs are used for taps, the copper detail or a description of the tap shall be noted, confirming that multiset conductors are tapped correctly.
(T) The physical size of the vertical bus in the distribution panels (second level equipment) shall be shown. The overcurrent devices, bus, barriers, and gutter space layout shall be shown. Layouts of previously approved panels (to be so noted on plans) need not be submitted.
(U) When a generator (or other non-utility source) is part of a 1000 KVA submission and the generator itself is rated below 1000 KVA, a one line diagram shall be submitted showing how the generator is connected to the normal service. The drawings shall include the grounding of the generator frame and neutral bonding if needed (four pole transfer device). If the generator is rated 1000 KVA or larger, a room layout shall be submitted along with a one line diagram, and physical drawings shall show a section view of the emergency switchboard. Also, the Advisory Board calendar number for the normal service shall be specified.
(V) Physical detail drawings for switchboard equipment shall show front and section views and shall be drawn by the switchboard manufacturer. Elevation detail shall show access to the bus connections, the size and location of the main bonding jumper (ground strap), the disconnect link in the neutral, all the barriers and how load cables leave the cabinet. Side section views shall clarify bus details.
(W) Details of gutter space, lug covers and dimensions of lugs and enclosures up to the 2nd level distribution equipment shall be shown.
(2) Filing requirements for electrical advisory board review of Appliances, Devices, and Materials Not Covered by the Electrical Code Technical Standards.
(a) A cover letter together with appropriate drawings, sketches, charts, and/or cut sheets shall be filed at:

DEPARTMENT OF BUILDINGS
Bureau of Electrical Control

(address provided in the City's website, http://www.nyc.gov)
(b) A filing fee of $350.00 shall be paid for each submission made where an electrical violation was issued due to failure to obtain prior Electrical Advisory Board review and approval, no part of which shall be refundable.
(c) Payment shall be made by a money order or a corporate/business check, a bank check or a certified check, and shall be made payable to "Department of Buildings."
(3) Filing requirements for electrical advisory board review of Electrical Equipment and Materials.
(a) The submission, including a cover letter and check, shall be filed at the following location only:

DEPARTMENT OF BUILDINGS
Bureau of Electrical Control Advisory Board

(address provided in the City's website, http://www.nyc.gov)
(b) A filing fee of $200.00 shall be paid for each submission, no part of which shall be returned.
(c) Payment shall be made by either money order, bank check, certified check or corporate/business check. The payment instrument shall be made payable to "Department of Buildings."
(d) The submission shall contain the following:
(A) A cover letter indicating the following:
(i) Type/model numbers of material/equipment being submitted for approval.
(ii) Items included in support of the submittal.
(iii) Explanatory information/comments, if applicable.
(B) A completed & notarized application for review.
(C) Two (2) brochures, or catalog data sheets, and a set of unmounted photographs or photographs transmitted electronically as authorized by the Department.
(D) A complete test report that includes a conclusion sheet from a laboratory acceptable to the Commissioner.
(E) Equipment samples only when requested by the Electrical Advisory Board.
d. Compliance with the Energy Conservation Construction Code of New York State ("Energy Code"). All submissions made to the Electrical Advisory Board shall comply with the requirements of the Energy Code where applicable.

§34-06 Electrical Code Revision and Interpretation Committee. In accordance with section 27-3005(a)(7) of the Administrative Code, the Commissioner shall appoint a special committee to be known as the "electrical code revision and interpretation committee". The committee may propose to the commissioner local amendments to the NEC and shall, upon request, provide interpretations and clarifications of the Electrical Code Technical Standards. The number of members and their organizational affiliations shall be at the discretion of the Commissioner. The members of the committee shall be appointed annually and shall serve at the pleasure of the Commissioner. The Committee shall have a Chair, Vice-Chair and Secretary appointed annually by the Commissioner. All proposed local amendments to the NEC adopted or considered for adoption by the city shall be submitted to the committee for review.

§34-07 Electrical Code Advisory Committee. In accordance with section 27-3005(a)(7) of the Administrative Code the Commissioner shall appoint a special committee to be known as the "electrical code advisory committee". The committee shall advise the Commissioner regarding

the approval of local amendments to the NEC proposed by the Electrical Code Revision and Interpretation Committee and the implementation of such amendments, and shall act as a conduit between the Department and the electrical industry regarding such proposed amendments and their implementation. The members of the committee shall be appointed annually and shall serve at the pleasure of the Commissioner. The number of members and their organizational affiliations shall be at the discretion of the Commissioner. The Committee shall have a Chair, Vice-Chair and Secretary appointed annually by the Commissioner. The Commissioner shall submit all local amendments to the edition of the National Fire Protection Association NFPA 70 NEC currently adopted or being considered for adoption by the city to the committee for review.

CHAPTER 35 ELECTRICAL INSPECTION

§35-01 Designation of Private Agencies to Perform Electrical Inspections in the City of New York.

(a) *Grounds for certification and renewal of certification.* The commissioner may grant and each January thereafter renew certification of private electrical inspection agencies, provided:

(1) the agency applying for certification certifies in writing that each of the inspectors it shall employ to conduct the inspections permitted by §27-3005(2)(b) of the Administrative Code shall possess five years experience as an electrician or inspector of electrical installation; or three years of experience as an electrician or inspector of electrical installation plus two years of education at an accredited college technical school in a program emphasizing courses in electrical installations or education toward a baccalaureate degree in Electrical Engineering or Engineering Technology with an emphasis on electrical installation or repair. Two of the requisite years of working experience as an electrician or inspector of electrical installation shall be experience in the installation of lighting, heating and power. Experience and education must be acceptable to the Department of Buildings and is subject to the Commissioner's Review and approval; and

(2) the agency possesses

(i)a general liability insurance policy in excess of $5 million, and

(ii) worker's compensation insurance for its employees and submits copies of the Insurance Certificates to the Commissioner; and

(3) the agency furnishes the names of its inspectors and documentation supporting the experience required by §35-01(a)(1) hereof, and thereafter promptly advises the commissioner of any changes in personnel affecting the inspection permitted; and

(4) the agency prohibits its inspectors and other employees from accepting any gratuities or other benefit for work performed pursuant to these regulations and §27-3005(2)(b) of the Administrative Code; and

(5) the agency does not conduct an inspection pursuant to §27-3005(2)(b) of the Administrative Code of any work performed by any of its own officers, employees, or any other persons associated with the agency; and

(6) the agency has a legal place of business within the City of New York (P.O. Box not acceptable).

(b) *Right to deny or revoke certification.*

(1) The commissioner or his designee may deny or revoke certification where investigation reveals any of the following:

(i) the agency has failed to comply with any of the provisions enumerated in §35-01(a) of these rules and regulations;

(ii) the agency has knowingly made false or misleading statements, or knowingly falsified or allowed to be falsified any certificate, form, signed statement, application, or report filed with the department, or failed to file a report required by law or the department or willfully impeded or obstructed such filing, or induced another person to do so;

(iii)the agency engages in any other conduct evidencing a willful or grossly negligent failure to comply with provisions of state or local law, or rules or regulations promulgated pursuant to statutory authority; or

(iv)the agency engages in any other conduct evidencing a departure from the standard or good character applicable to the trade of licensed electrician.

(2) Where the commissioner or his designee, in his or her discretion, deems the certification of the agency shall be revoked, the agency shall be entitled to a hearing before the Office of Administrative Trials and Hearings as provided by rules promulgated by the department.

(3) Where the commissioner or his designee, in his or her discretion, deems that continued certification of the agency would be likely to create a condition of imminent peril to public safety, the revocation determination shall be effective immediately. In such an instance, the agency shall be entitled to a hearing pursuant to §35-01(b)(2) of the rules at the next available scheduled hearing session before the Office of Administrative Trials and Hearings.

(c) *Contractual obligation.*

(1) A contractual agreement between the agency and the City of New York is required in order for the agency to perform electrical inspections for the City of New York.

(2) Certification by the Commissioner is a prerequisite for participation in the contracting process.

§35-02 Payment of Fees for Certificates of Electrical Inspection.

(a) All applications for a certificate of electrical inspection for electrical work filed with the Department of Buildings shall specify a completion date for such work. No certificates of electrical inspection, other than temporary certificates for electrical service, shall be issued, unless and until the required total application fee or fees therefore [*sic*] shall have been paid to the commissioner.

(b) The fees required to be paid pursuant to § [*sic*] 27-3018(b) of the Administrative Code shall be paid as follows:

(1) The filing fee set forth in § [*sic*] 27-3018 subdivision (b) of the Administrative Code shall be paid upon the filing of the application for a certificate of electrical inspection.

(2) (i) The licensee shall schedule an inspection within thirty (30) days after the completion date specified on the application in accordance with procedures established by the Department. The remainder of the total fee, based upon the work listed on the application, shall be due and payable upon completion of the scheduled inspection by the Department. Upon completion of the inspection and the Department's determination that the work performed is complete and in compliance with the applicable provisions of the Electrical Code and upon the Department's having received full payment of applicable fees including any additional fee payable under paragraph (4) of this subdivision, a certificate of electrical inspection shall be issued to the licensee.

(ii) If the licensee fails to schedule an inspection in accordance

with Department's procedures within thirty days after the completion date specified on the application for a certificate of electrical inspection or such date as extended by the Department, or cancels a scheduled inspection appointment with less than forty-eight (48) hours notice or cancels a scheduled inspection more than forty-eight (48) hours prior to the inspection without scheduling an alternative date in accordance with Department procedures, or fails to provide access for the scheduled inspection, or if upon inspection it is determined by the Department that the work is not complete, or the scope of the work exceeds the scope of work indicated on the application, or the work is not in compliance with the Electrical Code, the remainder of the total fee shall be due and payable immediately.

(3) Where the remainder of the total fee is due and payable immediately as provided in paragraph (2)(ii) above, the licensee shall continue to be required to schedule an inspection(s) in the same manner as the initial inspection until the Department determines that the work performed conforms with the scope of the work indicated on the application and is in compliance with the applicable provisions of the Electrical Code. Upon such a determination and upon the Department's having received full payment of applicable fees including any additional fee payable under paragraph (4) of this subdivision, a certificate of electrical inspection shall be issued to the licensee.

(4) Any additional fee, based on amendments to the original application that include additional work, must be paid prior to the issuance of a certificate of electrical inspection.

CHAPTER 36 ELECTRICAL CONTRACTORS

§ 36-01 Evaluation of Educational Experience of Applicants for Electrical Contractor Licenses.

(a) *Experience*. Any applicant for an electrical contractor's license must have experience in the installation, alteration and repair of wiring and appliances for electrical, [*sic*] light, heat and power in or on buildings as set forth in New York City Administrative Code §27-3010. In evaluating this experience, credit may be given for the educational experience of applicants who have attended courses in a recognized vocational, industrial or trade school in electrical wiring, installation and design, or applied electricity.

(b) Description of course credit in recognized vocational, industrial or trade schools in electrical wiring, installation and design, or applied electricity.

(1) A recognized vocational, industrial or trade school in electrical wiring, installation and design, or applied electricity, is one offering a comprehensive curriculum of classes and practical laboratories taught in a logical progression to complete a specific course of study in electricity, as set forth in the description of the instructional program in residential, industrial and commercial electricity contained in the New York State Education Department guidelines for trade and industrial education, or the equivalent as determined by the Commissioner of Buildings upon the recommendation of the New York City Electrical License Board.

(2) A curriculum year of credit shall be no less than 200 classroom hours comprised of 20 percent lecture hours and 80 percent practical laboratory hours, or the equivalent as determined by the Commissioner of Buildings upon the recommendation of the New York City Electrical License Board.

§ 36-02 Impact of Periods of Unemployment upon Applications for Electrician's Licenses.

(a) *Applicability*. Pursuant to New York City Administrative Code §27-3010, any applicant for a master or special electrician's license shall have had, immediately preceding his or her application, at least seven and one-half (7½) years of experience in the installation, alteration and repair of wiring and appliances for electric light, heat and power in or on buildings. In evaluating this experience, the Department recognizes that periods of unemployment may make continuous employment for the seven and one-half (7½) years preceding his or her application impossible. Thus, in evaluating whether a master or special electrician's license applicant has sufficient work experience, the Department may exclude periods of unemployment when considering whether work experience immediately preceded the application date, as set forth in this rule.

(b) In accordance with the above, the Commissioner may grant a master or special electrician's license application where the applicant's work experience has occurred within the ten years immediately preceding the application date, if: (i) the applicant has had at least seven and one-half years of such experience, and during such time, a minimum of seventy-five hundred (7500) hours or the equivalent experience in the legal installation, alteration and repair of wiring and appliances for electric light, heat and power in or on buildings in such ten years immediately preceding the application date; and (ii) during the two calendar years immediately preceding the application date, the applicant has been employed in the legal installation, alteration and repair of wiring and appliances for electric light, heat and power in or on buildings for at least a total of twelve months.

(c) Subdivision (b) shall not apply to electrician's license applicants whose work experience includes electrical work that was not supervised by a licensed electrician, or that was otherwise illegal.

Nothing in this rule shall affect how credit for the seven and one-half (7½) years of work experience is computed pursuant to New York City Administrative Code §27-3010 (a)-(e).

CHAPTER 37 REFERENCE STANDARDS

§37-01 Rules of Procedure for Amending, Revising or Promulgating Reference Standards.

(a) General. Pursuant to Administrative Code §27-131.1, the Commissioner is empowered to issue or amend the building code reference standards, acting in consultation with the fire commissioner on all issues relating to fire safety. This rule establishes the procedure to be followed.

(b) Definitions.

(1) "Advisory Committee" shall mean the committee appointed by the Commissioner, consisting of members of the Department, the fire department, a registered architect, a professional engineer and representatives of the building and construction industry. The advisory committee shall be chaired by the Deputy Commissioner for Technical Affairs.

(2) "Task Force" shall mean a committee appointed by the mayor or the Commissioner to investigate a particular matter. Such committee shall include members of the public. The fire department shall be a member of any task force charged with investigating matters involving fire safety.

(c) Initial Consultation with the fire department. Where it is proposed to revise or amend reference standards 3-1, 3-2, 4-6, 5, 7-3, 8-1, 10-8, 10-9, 13-1, 13-2, 13-3, 13-6, 13-16,

14-11, 14-12, 14-13, 17, 18-1 and 19-1 and any other reference standard pertinent to fire safety, the fire department shall participate in preliminary meetings on proposed changes to these reference standards.

(d) Review by advisory committee. (1) Prior to publishing a proposed reference standard or amendment thereto, said proposal shall be distributed to the advisory committee for review and comment. In lieu of a review by the advisory committee, the Commissioner may direct a task force to review and comment on a proposed reference standard when said reference standard relates to the concerns of the task force.

(2) The advisory committee or task force shall review all proposed reference standards and shall timely comment on each draft submitted. The Department shall forward the advisory committee or task force a [*sic*] final draft of the reference standards relevant to fire safety to the fire department for review and comment.

(e) Public notice and hearing. (1) Upon receiving the comments of the advisory committee or task force, the full text of the proposed reference standard shall be published in the City Record at least twenty (20) days prior to the date set for a public hearing.

(2) Such published notice shall include a draft statement of the basis and purpose of the proposed reference standard, the time and place of public hearing and the final date for receipt of written comments.

(3) No proposed reference standard is to be published in the City Record unless comments required pursuant to §37-01(d)(2) have been received from the fire department or at least thirty (30) calendar days have elapsed from the submission of the final draft to the fire department, whichever is sooner.

(4) The final date for receipt of written comments regarding the proposed reference standard shall be five (5) calendar days after the public hearing.

(5) In the event substantive changes which may affect fire safety are made to the reference standard after the public hearing, the fire department shall review such draft and have ten (10) calendar days to comment.

(f) Final publication. (1) A reference standard shall become effective upon publication in the City Record after the close of the applicable comment period set forth in §37-01(e)(4) or (5), whichever is later.

(2) The reference standard as adopted shall be published in the next supplement to the compilation of "Building Code Reference Standards" and included as part of the Administrative Code.

CHAPTER 38 VENTILATION

§38-01 Ventilation of Garage Spaces Below Grade.

(a) Wherever the floor of a garage designed for the live storage of five (5) or more motor vehicles is more than two (2) feet below curb, ventilation shall be provided as required by the provisions of subdivision a of §C26-267.0 of the Administrative Code.[*sic*]

(b) Air exhaust ducts shall terminate above the roof of the garage or the roof of the building or shall terminate at least ten (10) feet above the curb in an exterior wall adjoining a legal street, yard or court. No air exhaust duct shall terminate within fifteen (15) feet of a window in another building, nor within fifteen (15) feet of a window in the residence portion of the same building.

(c) The ventilating system shall comply with Reference Standard 13.

CHAPTER 39 COOLING TOWERS AND EVAPORATIVE CONDENSERS

§39-01 Cooling Towers and Evaporative Condensers.

(a) Before any cooling tower or evaporative condenser is erected, a permit shall be obtained.

(b) Plans of the cooling tower or evaporative condenser shall be filed with the application for a permit, showing details of construction, such as materials, dimensions, thickness of metal, weight of tower or condenser and details of all structural members and supports, including details of the method of support on the structure below and within such structure and any required anchorage.

(c) Stresses permitted in structural members and connections shall not exceed the limitations of the Administrative Code.

(d) The minimum thickness of any structural steel members shall be one-quarter inch, including all bracing and secondary members.

(e) The location of the cooling towers and evaporative condensers shall comply with the pertinent provisions of the Zoning Resolution.

(f) All materials used in cooling towers, except the drip bars, shall be constructed of incombustible material. The supports of drip bars are required to be of incombustible material.

CHAPTER 40 INSTALLATION AND MAINTENANCE OF GAS-FUELED WATER AND SPACE HEATERS IN ALL PORTIONS OF DWELLINGS USED OR OCCUPIED FOR LIVING PURPOSES

Subchapter

- **A** *Scope*
- **B** *Departmental Procedure*
- **C** *Where Heaters May be Used*
- **D** *Installation of Gas-Fueled Heaters*

Subchapter A *Scope*

§40-01 Installation and Maintenance of Gas-Fueled Water and Space Heaters in all Portions of Dwellings Used or Occupied for Living Purposes.

These rules shall govern the installation and maintenance of gas-fueled space and water heaters in the residence portions of multiple dwellings in the City of New York, including but not limited to the installation of such devices in multiple dwellings which are installed in lieu of centrally supplied heat and hot water under the provisions of §27-2028 and §27-2032 of the Administrative Code and in one and two family residences not heated by a central heating system.

Subchapter B *Departmental Procedure*

§40-11 Applications and Plans.

(a) Before commencing the installation of a gas-fueled space or water heater in a dwelling an application, as specified below must be filed in the borough office of the Department of Buildings where the installation is to be made, giving the

address of the dwelling and all pertinent information required on the forms.

(b) Applications shall be accepted only where gas appliances will be connected to flues in existing brick chimneys, and where no other venting or other work is required to be done. They shall not be accepted for installation of gas-fueled heaters in sleeping rooms. Applications shall clearly state the type of appliance to be installed, the floors, apartments and rooms in which they are to be placed, including the number of rooms in the apartment and the occupancy of each room, whether sleeping room or otherwise. They shall describe the condition of the chimney flue to be used and state whether the draft is satisfactory. If a gas meter is to be installed its location shall be given.

(c) Where vent pipes are to be installed, or other work done in connection with the installation of gas-fueled heaters, an application shall be filed. It shall indicate the type of each such device, the floor on which, and the apartment and the occupancy of the room in which such appliance is to be installed, the material and dimensions of the vent pipe or flue, and the dimensions of the court or yard to which the exhaust vent will be carried. If a gas meter is to be installed, its location shall be shown. No plumbing specification sheet need be filed with such application.

(d) Application for permits to install gas-fueled space and water heaters may be made separately or together on one application but each such application shall indicate that all apartments in the building will be provided with gas-fueled space and/or water heaters as the case may be. The location, type, make, and capacity of all such appliances previously installed or to be installed in a building shall be specified. If any of the appliances have been installed in multiple dwellings prior to December 9, 1955, which the owner desires to maintain, the necessary work to make them comply with these rules should be indicated.

(e) An application may be filed by the owner of the premises, or his architect, engineer, contractor, plumber or other agent. If the application is not filed by the owner, an [*sic*] owner's authorization form also shall be filed.

§40-12 Examination and Approval of Applications.

(a) Applications, when filed, shall be processed in the usual manner and forwarded to the inspectors of plumbing.

(b) Applications calling for the installation of gas fueled space and water heaters shall be expedited and may be taken out of turn, except that they shall be processed in the order in which they were received. They shall be examined for compliance with these rules and all other laws and regulations applicable to such installations. If any chimney or metal stack is to be installed, examiners shall check such construction for compliance with subchapter 15 of Chapter 1 of Title 27 of the Administrative Code (Building Code). They shall require that the foundation shall be carried not less than four feet below the surface of the ground, and that the soil on which it is built to be not overloaded. They shall require that new chimneys be strapped to the existing walls.

(c) Only applications calling for the installation of gas-fueled space or water heaters, approved by the Department of Buildings, specifying the make and model shall be approved. All such gas appliances shall be of types approved also by the American Gas Association. However, where an owner desires to continue to use any gas appliance installed in a multiple dwelling prior to December 9, 1955, clearly shows on the plan the data required by §40-11(f) and prominently marks the appliances that have not been approved by the Department of Health, the application may be conditionally approved pending the approval of the appliances by the Department of Health.

§40-13 Commencement of Work.

(a) It shall be unlawful to commence any construction for which an application has been filed until a permit for the proposed work has been issued by the borough superintendent, and it shall be unlawful to commence the installation of piping of any gas appliance until a registered plumber has filed a signed statement with the borough superintendent containing the address of said plumber and stating that he is duly authorized to proceed with the work.

(b) The plumber shall notify in writing the borough superintendent of the Department of Buildings of the borough in which any gas-fueled space or water heater is to be installed, [*sic*] when such work is to begin and when it will be ready for operation and inspection.

§40-14 Inspection of Gas-Fueled Space and Water Heaters.

(a) Where an application has been filed it shall be the responsibility of the inspectors of plumbing to see that gas-fueled space and water heaters are installed in dwellings, apartments and rooms where such heaters are permitted to be installed in lieu of central heat or supply of hot water. They shall see to it that the appliances are of types approved by the Department of Buildings and the American Gas Association, and are installed in compliance with these rules.

(b) An application covering the installation of these appliances in dwellings shall be forwarded directly to the plumbing inspectors when approved as a permit. The installation of such appliances including Type B and other gas vents, but not chimneys, shall be inspected by inspectors of plumbing. If an application does not call for construction of a masonry or metal chimney, it shall be reported as completed, by the plumbing inspector, provided the work was satisfactory with a note on his report "no structural work."

(c) If the application calls for the erection of a masonry or metal chimney, it shall be forwarded by the plumbing inspector to the construction inspector as soon as the plumbing inspector has found the installation of these gas appliances and vent connections satisfactory. The construction inspector shall report such an application completed if the construction of the chimney has been satisfactorily performed.

§40-15 Issuing Approvals.

(a) A gas-fueled space or water heater installed after December 18, 1957, and a gas-fueled space heater installed prior to that date, in the residence portion of a multiple dwelling and installed after October 1, 1964, in one and two family dwellings, shall be approved by the Department of Buildings only if it is of a type approved by the Department of Buildings and the American Gas Association, and if it has been installed in compliance with these rules. A gas-fueled water heater installed in a multiple dwelling prior to December 18, 1957, and in a one or two family dwelling prior to October 1, 1964 shall be approved by this department only after it has been made to comply with all the requirements of these rules. The certification of approval of type of appliance by the Department of Buildings of such water heaters shall be

attached to the application.

(b) An application which has been filed to cover the installation of only gas-fueled space heaters or only gas-fueled water heaters shall be reported as being satisfactory completed only if all apartments in the building have been provided with either space or water heaters as the particular application specified. If an application calls for the installation of both space heaters and water heaters it shall be reported as being satisfactorily completed only if all apartments in the building have been provided with both space heaters and water heaters. Nor shall any application be reported as being satisfactorily completed unless all new appliances have been installed in compliance with these rules and all existing appliances have been made to conform with them.

(c) When the plumbing section signs off, as satisfactorily completed, an application which provides for the installation of gas-fueled space heaters in all apartments of a multiple dwelling, including the apartments where gas-fueled space heaters may have been installed prior to December 18, 1957, they shall make a list of such premises and send a copy of the list to the Department of Housing Preservation and Development. Where water heaters also have been satisfactorily installed, that fact shall be noted on the list. The list shall contain the premises and the application number under which the appliances have been installed, and shall be forwarded weekly.

Subchapter C *Where Heaters May be Used*

§40-21 Substitution for Central Heating or Hot Water Supply. Gas-fueled space or water heaters may be used in lieu of centrally supplied heat or hot water only in an apartment in a dwelling which complies with all the following requirements:

(a) The apartment shall consist of two or more living rooms.

(b) The apartment shall consist entirely of rooms used in Class A occupancy, or in one or two family dwellings.

(c) The apartment shall not be, in whole or in part, arranged, designed or intended to be used for single room occupancy.

(d) The apartment shall not have been formed, in whole or in part, as a result of work done to increase the number of apartments of a converted dwelling or a tenement under an application or plan filed with the department on or after December 9, 1955.

(e) The apartment shall not be located in a building which has been vacant under conditions and for periods which render it subject to the provisions of §27-2089 of the Administrative Code.

(f) The apartment shall not have been converted or altered under plans filed with the department on or after December 9, 1955 so as to cause any existing or newly created portion of a Class A or Class B converted dwelling not previously constituting an apartment consisting of rooms used for Class A occupancy to become such an apartment.

(g) The apartment shall not be a part of a Class A or Class B multiple dwelling which is or was converted to such dwelling from a single family or two-family dwelling under an application or plan filed with the department on or after December 9, 1955.

(h) The apartment shall not be in a tenement which, after being used or occupied as other than a tenement, is or was reconverted to a tenement under any application or plan filed with the department on or after December 9, 1955.

(i) In accordance with Building Code Reference Standard P107.26.

Subchapter D *Installation of Gas-Fueled Heaters*

§40-31 Required Approvals of Appliances. Gas-fueled space and water heaters, installed after December 18, 1957, in apartments in multiple dwellings, in lieu of centrally supplied heat or hot water where such centrally supplied heat or hot water supply is required by the Multiple Dwelling Law,[*sic*] and in one and two family dwellings installed after October 1, 1964 shall be of types approved by the Department of Buildings and the American Gas Association.

§40-32 Prohibited Types of Water Heaters. On and after December 18, 1957, it shall be unlawful to install in any apartment in any multiple dwelling, and after October 1, 1964 in a one or two family dwelling a gas-fueled water heater, so designed and arranged that it heats water in pipe coils placed at a distance from the hot water storage tank.

§40-33 Number and Capacity of Gas-Fueled Heaters.

(a) Where gas-fueled heaters are permitted to be installed in lieu of the required centrally supplied heat, each "living room," as such term is defined in subdivision 18 of §4 of the Multiple Dwelling Law, shall be heated by a heater placed in such room or in an adjoining room which connects with it except that a room whose exterior walls are exposed only on a fully enclosed inner court may be heated by a heater located one room removed from such room. For this purpose, an inner court shall be considered fully enclosed even though some of the enclosure walls are located on an adjoining lot. The aggregate input capacity of the heater or heaters installed in any apartment shall not be less than the number of living room times ten thousand (10,000) British thermal units per hour.

(b) Notwithstanding the provisions of subdivision (a) of this section, there shall be installed and continuously maintained by the owner in each apartment gas-fueled heaters in such numbers and at such locations as shall be sufficient to heat such apartment to the minimum temperature which would be required to be maintained therein by the owner under the provisions of the Health Code of the city relating to the heating of buildings, if such owner were required to furnish centrally supplied heat in such apartment.

(c) The requirements of subdivision (a) and (b) of this section are not applicable when an apartment in a multiple dwelling is heated by gas-fueled space heater or heaters which were installed by a tenant prior to December 18, 1957, and in a one or two family dwelling prior to October 1, 1964 and owned by such tenant or successor tenant.

§40-34 Capacity of Water Heaters. Gas-fueled water heaters shall be automatic storage types having a capacity of not less than twenty gallons and shall, in any event, be adequate to provide a supply of hot water as defined in §27-2031 and §27-2034 of the Housing Maintenance Code, and §131.042 of the Health Code.

§40-35 Shut-Off Devices. Each gas-fueled space or water heater installed in an apartment in a dwelling shall be equipped with an effective device which will automatically shut off the gas supply to such heater in the event that its pilot light or other constantly burning flame is extinguished, or in the event of an interruption of the gas supply to such heater. Such

automatic gas shut-off device shall be of type which, after it has shut off the supply of gas to a heater, will not permit such heater to be relighted unless such shut off device is first reset manually.

§40-36 Gas Piping.

(a) The sizes of gas piping shall be such as to give an adequate volumetric flow of gas to all appliances. The minimum diameter of gas piping shall be three-quarters of an inch (3/4") except that a branch supplying only one appliance may be one-half inch (1/2") diameter.

(b) Each gas-fueled space and water heater shall be rigidly connected to the gas piping supplying gas to the apartment.

§40-37 Appliances in Sleeping Rooms.

(a) Gas-fueled water heaters shall not be installed in a room occupied for sleeping purposes, in bathrooms, or in any occupied room normally kept closed.

(b) It shall be unlawful to install a gas-fueled space heater in a room occupied for sleeping purposes except when the space heater is so designed, installed and operated for it:

(1) Obtains combustion air directly from the outside of the building or through a duct leading to the outside.

(2) It vents directly to space outside of the building other than an inner court, or is connected through a flue or outlet pipe with an outside chimney which conforms with the requirements of Subchapter 15 of Chapter 1 of Title 27 of the Administrative Code (Building Code).

A flue in an existing brick chimney may be used if it is in good condition and tests show that it will provide adequate draft.

§40-38 Clearances from Combustible Materials.

(a) Space heaters and water heaters approved by the American Gas Association Laboratories, shall have clearance from combustible materials in accordance with the terms of their approval.

(b) Gas-fueled space and water heaters shall be installed also in conformity with any applicable requirements of specification Z21-30 of 1954 of the American Standards Association, except where these rules otherwise provide.

(c) Vent connectors and vent and outlet pipes shall be installed so as to provide a minimum clearance of three inches on all sides from combustible material. Vent and outlet pipes shall not pass through a floor. Where a vent or outlet pipe passes through a partition or roof constructed wholly or in part of combustible material, a ventilated metal thimble not less than six inches larger in diameter than the pipe shall be provided. Any material used to fill the space between the vent pipe and the thimble shall be incombustible**.**

§40-39 Venting of Gas Appliances. (a) *Definitions.*

Flue, vent or outlet pipe. A "flue, vent or outlet pipe" is a conduit or passageway, vertical or nearly so, for conveying flue gases to the outer air.

Vent connector. A "vent connector" is a pipe connecting an appliance with the flue, vent, outlet pipe or chimney.

(b) Every vent or outlet pipe serving a gas space or water heater shall be provided with a draft hood of a type approved by the American Gas Association, Inc., laboratories of the Underwriters' Laboratories, Inc., as conforming to accepted standards, unless the heater has an approved built-in draft hood, or has been approved by the American Gas Association without a draft hood. The draft hood shall be installed at the flue collar or as near to the appliance as possible and in the position for which it was designed, with reference to horizontal and vertical planes. The relief opening of the draft hood shall not be obstructed. A suitable cap shall be provided at top of vent pipes.

(c) Each gas-fueled space or water heater installed in an apartment in lieu of the required centrally supplied heat and hot water supply, respectively, shall be connected to a chimney flue, outlet pipe, or type B vent, complying with the requirements of subdivision (h) of this section, which shall be carried four feet above a flat roof and two feet above the highest part of a peaked roof, except that type B vents need not comply with this provision when equipped with a vent cap approved by the Department of Buildings or previously approved by the Board of Standards and Appeals for the prevention of downdraft. A flue in an existing chimney may be used if a licensed plumber certifies that he has made a smoke test of the flue and found no gas escaping through its walls, and made a test of the draft and found it adequate. However, window or wall type heaters of the sealed combustion chamber type which have been approved by the Department of Buildings or previously approved by the Board of Standards and Appeals may be vented in accordance with the approval of the Board, except as provided in subdivision (d) of this section.

(d) No gas-fueled space heater, including a window or wall type recessed heater and no gas-fueled water heater, installed in a dwelling, shall be vented to an inner court unless it is connected to a chimney complying with the requirements of subchapter 15 of Chapter 1 of Title 27 of the Administrative Code (Building Code). Standard steel steam or water pipes are acceptable in such locations.

(e) Gas-fueled water heaters shall be located as close as practicable to a vent or flue. They should be so located as to provide short runs of piping to fixtures.

(f) Vent connectors shall consist of galvanized iron of not less than No. 26 U.S. gage [*sic*] in thickness, cement-asbestos pipe, approved type B vents, enameled steel pipe of a quality acceptable to the superintendent as heat and corrosion resistant, or other materials satisfactory to the superintendent.

(g) Vent connectors shall have a cross-sectional area at least equal to the area of the vent outlets of the appliance and shall have a minimum diameter or dimension of three inches.

(h) Outlet pipes and vents, on the exterior of a building, shall consist of standard water, steam or soil pipes, type B vents approved by the Department of Buildings or previously approved by the Board of Standards and Appeals, or other corrosion resistant materials satisfactory to the superintendent, all so connected as to prevent leakage at joints. Outlet pipes and vents on the exterior of a building shall be adequately supported and braced. Flues inside of buildings shall be constructed as low temperature chimneys. Type B vents may be used inside buildings when installed in accordance with the requirements of §27-887(d) of the Administrative Code (Building Code) and with the conditions of their approval.

(i)Only vent connections serving appliances located in one story of a building may be made to any flue. The cross-sectional area of any flue shall be equal to or greater than the total cross-sectional area of all vents connected to it, but in any case the least internal dimension shall be three inches.

(j) Vent connections may be made to a flue serving other heat producing appliances, above the connection of the other

heat producing appliances, or the smoke pipe or vent connection from the gas appliance and the other heat producing device may enter the flue through a single opening if joined together by a Y fitting located as close as practical to the flue. The angle of intersection between the branch and the stem of the Y shall not exceed forty-five degrees. The area of the common outlet pipe shall not be less than the combined areas of the outlet pipes joined by the Y fitting.

(k) The horizontal run of vent pipe connectors shall not exceed three-fourths of the vertical rise of the flue to which the vent is attached, measured from the connection of the appliance to the top of the flue. A vent connector shall be pitched upward from the gas appliance with a slope of not less than one-fourth inch vertically for each foot of horizontal run.

(l) No dampers, steel wool or other obstructions shall be placed in any vent pipe or flue.

§40-40 Gas-Fueled Space Heaters Installed Prior to December 18, 1957.

(a) Gas-fueled space heaters installed prior to December 18, 1957, if of a type not approved by the Department of Health and the American Gas Association, shall be replaced by centrally supplied heat or by gas heaters approved by the said authorities on or before November 1, 1958, in any tenement and converted dwelling which contains ten or more apartments, and on or before November 1, 1959, in other tenements and converted dwellings.

(b) On or before the applicable dates given in subdivision (a) of this section, gas-fueled space heaters installed prior to December 18, 1957, in tenements and converted dwellings prescribed in said paragraph shall be made to comply with all the requirements of §§40-33 through 40-39.

§40-41 Gas-Fueled Water Heaters Installed Prior to December 18, 1957.

(a) On or before November 1, 1958, in any tenement and converted dwelling which contains ten or more apartments, and on or before November 1, 1959, in other tenements and converted dwellings, any gas-fueled water heater installed prior to December 18, 1957, if of a type not approved by the Department of Health, shall be replaced by a supply of hot water or by a water heater approved by said department.

(b) On or before the applicable dates given in §40-40(a), gas-fueled dwellings described in said paragraph shall be made to comply with all the applicable requirements of §§40-33 through 40-39, and all gas-fueled water heaters that have water heaters installed prior to December 18, 1957, in tenements and converted dwellings' sleeping rooms shall be removed.

(c) Any gas-fueled water heater so designed and arranged that it heats water in pipe coils placed at a distance from the hot water storage tank, installed prior to December 18, 1957, may be maintained in tenements and converted dwellings described in subdivision (a) of this section on and after the applicable dates given in said rule only if it is of a type approved by the Department of Health. However, no gas-fueled water heater shall be maintained in a sleeping room or bathroom.

§40-42 Maintenance of Space and Water Heaters.

(a) The owner of the tenement or converted dwelling and of the one and two family dwelling in which gas-fueled space and water heaters have been installed by him shall maintain each such appliance in a condition of good repair and in good operating condition.

(b) On and after November 1, 1958, in any tenement and converted dwelling which contains ten or more apartments, and on and after November 1, 1959, in any other tenement and converted dwelling, where a tenant provided a space or water heater on October 1, 1957, each such appliance shall be made to comply with all the applicable requirements of these rules and shall be maintained in a condition of good repair and in good operating condition by the tenant.

(c) Should a tenant fail to comply with the requirements of subdivision (b) of this section, it shall be the duty of the owner of the tenement or converted dwelling to provide centrally supplied heat and a supply of hot water, or if such apartment is eligible therefore [*sic*] and he so elects, to install and continuously maintain space and water heaters therein which shall comply with the requirements of these rules.

(d) On and after November 1, 1958, in any tenement and converted dwelling which contains ten or more apartments, and on and after November 1, 1959, in any other tenement and converted dwelling, where gas-fueled space or water heaters were provided by the tenant, and the ownership of such appliances passes from the tenant or successor tenant, or if any such space or water heaters are removed from gas-fueled space or water heater, or temporarily for the purpose of repairs, then such an apartment, except for the purpose of immediate replacement by another owner will be subject to the duties imposed on an owner by subdivision (c) of this section.

§40-43 Existing Appliances in Ineligible Locations. Where a gas-fueled space heater or water heater has heretofore been installed in a dwelling not complying with all the requirements of §40-21, nothing in these rules shall be construed to relieve the owner of his responsibility to provide for such dwelling centrally supplied heat and supply of hot water.

§40-44 [Reserved]

§40-45 Variations. Where there is a practical difficulty in carrying out the strict letter of the provisions of these rules, the Borough Superintendent may vary such provisions for a specific installation, provided the necessary safety is secured and the variance is not in conflict with Administrative Code.

CHAPTER 41 VENTING OF GAS WATER HEATERS AND OTHER GAS APPLIANCES IN MULTIPLE DWELLINGS

§41-01 Venting of Gas [*sic*] **Water Heaters and Other Gas Appliances in Multiple Dwellings.**

(a) This section shall apply to vents for gas burning water heaters within apartments of multiple dwellings as required by §27-887(d) of the Administrative Code (Building Code) and to gas appliances in rooms or spaces without a window opening to the outer air, used for living or sleeping within a multiple dwelling, where required by the provisions of §64 of the Multiple Dwelling Law.

(b) Vents shall consist of galvanized iron of not less than No. 26 U.S. gage [*sic*] in thickness, cement-asbestos pipe, metal asbestos pipe, enameled steel pipe of a quality acceptable to the Department as heat and corrosion resistant, or other materials satisfactory to the superintendent.

(c) Vents shall have a cross-sectional area at least equal to the area of the vent outlet of the appliance and shall have a

minimum diameter or dimension of three (3) inches.

(d) Vents shall lead to a flue or to the outer air as follows:
(1) Several vents may be connected to a flue if the cross-sectional area of the flue is equal to or greater than the total cross-sectional area of all vents so connected. No vent from a water heater or other gas appliance within an apartment may be connected to a flue serving a central heating plant.
(2) Vents may be connected to [*sic*] flue serving appliances burning other than gas fuel provided the connection of the gas appliance to the flue is at least nine (9) inches above the connection of the other heat producing device, or through a suitable "Y" connection in a common vent pipe of proper diameter.
(3) Every flue to which a vent from a gas water heater is attached, shall extend to a distance of not less than four (4) feet above a flat roof, or two (2) feet above a pitched roof. Such flues on the exterior of a building, and the portions of the vent pipes on the exterior of a building, shall consist of standard water, steam or soil pipe, cement asbestos pipe, metal-asbestos pipe or other corrosion resistant material satisfactory to the Department. Flues and vent pipes on the exterior of buildings shall be adequately supported and braced. Flues within buildings shall be constructed as low temperature chimneys.
(4) Vents leading to an outside flue or terminating at the exterior of the building may pass through the upper part of a window if the vent is adequately secured in place and provided the vent is so arranged as to give minimum interference with the operation of the window, provided the area of the windows in the room after alteration equals or exceeds that required by law. Vents may also pass through an exterior wall by means of a metal sleeve placed in the wall. The metal sleeve shall consist of standard water, steam, or soil pipe, cement-asbestos pipe, or other approved material. The space between the sleeve and the vent shall be filled with incombustible material.
(5) Vent pipes may be terminated at the exterior of an outside wall of a building in which case the vents shall be turned upward for not less than ten (10) inches, except that for any vent pipes installed after June 30, 1955, the vertical rise of the vent pipe shall not be less than one and one-third times the length of the horizontal run of the vent pipe. No vent pipe shall terminate below the level of the top of a window unless at least three (3) feet distant from any part of the window. Vents shall be capped with an approved tee. Vents on the exterior of a building shall comply with the provisions of paragraph (4), subdivision (d) of this section as to the material that may be used.

(e) Vent pipes shall be installed so as to provide a minimum clearance of three (3) inches on all sides from combustible material. Vent pipes shall not pass through a floor unless approved by the superintendent.

(f) Where a vent pipe passes through a partition or roof constructed wholly or in part of combustible material, a ventilated metal thimble not less than six (6) inches larger in diameter than the pipe, shall be provided. Any material used to fill the space between the vent pipe and the thimble shall be incombustible.

(g) Every vent pipe serving as a gas water heater shall be provided with a draft hood unless the water heater has an approved built-in draft hood. The draft hood shall be approved by a recognized testing laboratory as conforming to nationally accepted standards. The draft hood shall be installed at the flue collar or as near to the appliance as possible and in the position for which it was designed, with reference to horizontal and vertical planes. The relief opening of the draft hood shall not be obstructed.

(h) The horizontal run of vent pipe shall not exceed three-fourths of the vertical rise of the flue to which the vent is attached. The vent pipe shall be pitched upward from the water heater with a slope of not less than one-fourth inch vertically for each foot of horizontal run.

(i) No dampers, steel wool or other obstructions shall be placed in any vent pipe or flue.

(j) A permit shall be obtained from the Department of Buildings before any vertical flue or chimney is constructed.

CHAPTER 42 ENTRANCE DOORS, LOCKS AND INTERCOMMUNICATION SYSTEMS

§42-01 Entrance Doors, Locks and Intercommunication Systems.

(a) Bulkhead doors and scuttles shall have no key locks and shall not be locked by a key at any time. The only permissible and acceptable means of securing a bulkhead door or scuttle is by means of a movable bolt or hook on the inside.

(b) Section 15.10(n) of the current departmental rules and regulations in its last un-numbered paragraph provides as follows:
"All passageways required under these rules shall be not less than seven feet (7'0") in height and not less than three feet (3'0") in width and shall at all times be kept clear and unobstructed. Doors and gates at the end of such passageways are prohibited, except that a door or gate equipped with an approved-type knob or panic bolt which shall be readily openable from the inside will be permitted at the building line. Doors and gates provided with key locks or padlocks are prohibited."

(c) Where an entrance door leading from a vestibule to the main entrance hall or lobby is equipped with one or more automatic self-closing and self-locking doors, the entrance door from the street to the vestibule need not be equipped with automatic self-closing and self-locking doors.

(d) Every entrance from the street, court, yard or cellar to a class A multiple dwelling erected or converted after January 1, 1968 containing eight or more apartments shall be equipped with automatic self-closing and self-locking doors. Such multiple dwelling, as aforesaid, shall also be equipped with an intercommunication system to be located at the required main entrance door.

(e) On or after January 1, 1969, every entrance from the street, court, yard or cellar to a class A mltiple dwelling erected or converted prior to January 1, 1968 containing eight or more apartments, shall be equipped with automatic self-closing doors and self-locking doors and shall also be equipped with an intercommunication system.

(f) Every self-locking door required under this section shall be installed and maintained so as to be readily openable from the inside without the use of keys.

(g) The minimal devices acceptable for the inter-communication system shall be a bell or buzzer system, or a speaking and listening device to permit communication by voice between the occupant of each apartment and a person outside such required main entrance door, and a return buzzer

mechanism to release or open the lock to the aforesaid required door.

(h) The bell and intercommunication system shall be located at the required main entrance door so that a person may readily reach the door when the unlocking buzzer is activated.

(i) No push button device shall be more than six feet from the floor and the speaking and listening device shall be installed to be not less than four feet and not more than five feet from the floor.

(j) The device or devices for the the intercommunication system installed in the apartment shall be readily accessible to the occupant.

(k) The device or devices for the the intercommunication system installed hereunder shall be of a type and kind approved by the Department of Buildings or previously approved by the Board of Standards and Appeals.

(l) Devices which have been previously installed and which are in good condition and performing in an adequate manner may, in the discretion of the department, be accepted.

CHAPTER 43 INSTALLATION OF SECURITY ITEMS IN MULTIPLE DWELLINGS

§43-01 Installation of Peepholes.

(a) These new peepholes, or door interviewers, must bear a label showing the approval of the Department of Buildings or the previous approval of the Board of Standards and Appeals.

(b) The peeholes must be so located as to enable a person in such housing unit to view from the inside of the entrance door any person immediately outside.

(c) The distance above the inside finished floor to the center of the peephole shall be approximately 5 feet.

(d) The cutout shall not affect the adequacy of any stiffening member of the door.

(e) Peepholes installed prior to the enactment of the legislation will be acceptable unless the cutout for the peephole has affected the adequacy of any stiffening member of the door.

§43-02 Installation of Two 50 Watt Lights at Front Entrance Way.*

(a) All electrical work shall be done in accordance with the requirements and approval of the Department of Buildings.

(b) The installation shall be a separate circuit or connected to the house line servicing the public halls.

(c) The lights shall be encased in a metal guard or shatterproof globe.

(d) The lights of at least 50 watts of incandescent or equivalent illumination shall be placed on each side of the front entrance-way at a height of between 7 to 11 feet above floor level adjacent to such entrance-way and adequate to light same.

***As promulgated, however provisions of the New York City Housing Maintenance Code may require high wattage requirements.*

§43-03 Installation of Viewing Mirrors in Self-Service Elevators.

(a) Mirrors shall be made of polished metal.

(b) Mirrors shall be of such size and so located on the car wall opposite the car entrance so that a person entering the elevator may have a complete view of the interior of the car. It shall not be necessary to provide a view floor and ceiling.

(c) The mirror shall be so located as not to interfere with or endanger passengers in the elevator.

(d) Mirrors shall be mounted and secured so that they cannot be readily removed by the public.

43-04 Installation of Lights in Rear Yards, Side Yards, Front Yards and Courts.

(a) All electrical work shall be done in accordance with requirements and approval of the Department of Buildings.

(b) The installation shall be a separate circuit or connected to the house line servicing the public halls.

(c) The light or lights, shall be of at least 40 watts of incandescent or equivalent illumination.

(d) The lights shall be so located as to adequately light all portions of the rear yards, side yards, front yards and courts.

(e) Lights are not required in an inner court that is accessible only from the interior of the building and to which access is restricted for clean-out purposes.

CHAPTER 44 EXEMPTIONS FROM FILING REQUIREMENTS

§44-01 Minor Alterations that do not Require the Filing of Applications and Plans for Building Alteration Permits with the Department of Buildings.

(a) The following items associated with one and two family dwellings shall be considered minor alterations within the meaning of §27-124 of the Administrative Code of the City of New York and shall not require the filing of applications and plans for building alteration permits with the Department:

(1) Fences of any material, including masonry fences, up to six feet high;

(2) Boiler room enclosures;

(3) Minor interior non-structural changes not increasing room count;

(4) Outdoor in-ground pools limited to 400 square feet in area, provided that there is an existing slop sink for indirect waste; and

(5) Greenhouses and temporary portable freestanding sheds erected on the same zoning lot as the main building, provided that the following requirements are met:

(i) The shed or greenhouse shall not exceed 120 square feet in area and shall not be more than 7'6" in height;

(ii) The shed or greenhouse shall not be located nearer than 3 feet from any lot line;

(iii) The shed shall not be permanently affixed to the land;

(iv) The shed shall not be used for storage of other than normal household goods; the greenhouse shall not be used for any use other than cultivating plants and

(v) There shall not be more than one such shed or greenhouse on any zoning lot.

(b) The following item(s) associated with multiple dwellings shall be considered a minor alteration within the meaning of §27-124 of the Administrative Code of the City of New York and shall not require the filing of applications and plans for building alteration permits with the Department:

(1) Open screen balcony enclosures.

(c) This rule shall not relieve any applicant of the obligation to file at other City agencies, when appropriate, including the Landmarks Preservation Commission and the City Planning Commission.

CHAPTER 45 BUILDING PERMIT APPLICATION PROCEDURES

§45-01 Microfilming of Application Folders and Associated Documentation for Temporary and Final Certificates of Occupancy and Letters of Completion.

(a) *Purpose*. (1) To provide the procedure whereby the Department of Buildings will microfilm application folders and associated documentation for certificates of occupancy, temporary certificates of occupancy and/or letters of completion.

(b) *Procedure*.

(1) The Department requires that the contents of approved folders be microfilmed twice.

(i) Prior to permit, the contents of approved folders, including but not limited to application plans and documents, must be microfilmed by the applicant using an outside vendor.

(ii) At the time of request for the first temporary and final certificate of occupancy and/or letter of completion, a second microfilming must be performed by the Department of Buildings.

(2) The minimum fee for microfilming by the Department shall be $35.00 and shall be paid at the time the initial job application is filed. This fee covers microfilming of the application file at the time a certificate of occupancy or letter of completion is issued. In the event filming requires more than two fiche, an additional $10.00 per fiche will be charged at the time the temporary or final certificate of occupancy or letter of completion is issued. In the event the Department has microfilmed the folder and associated documentation upon issuance of a temporary certificate of occupancy, there will be no charge for the microfilming of those documents added to the folder for the final certificate of occupancy if less than twenty (20) pages. If the added documents are more than 20 pages, the excess will be charged at $10.00 per fiche.

(3) The Department will send a copy of the microfilm of the application, associated documentation and certificate of occupancy or letter of completion to the applicant after a certificate of occupancy or letter of completion is issued.

CHAPTER 46 AUTHORIZED REPRESENTATIVES

§46-01 Persons authorized to perform inspections, tests, certifications, and other functions on behalf of the Department.

(a) *Authorized representatives*. Persons authorized to perform inspections, other than officers and employees of the Department, shall include the following:

(1) Professional engineers and registered architects licensed under the New York State Education law are authorized to review plans and satisfy objections issued at plan examination and perform tests and inspections required by title 26 and 27 of the New York City Administrative Code ("the code"), in accordance with code requirements and all applicable rules and regulations of the Department;

(2) Professional engineers and registered architects licensed under the New York State Education Law and master plumbers and master fire suppression piping contractors licensed by the Department are authorized to inspect and witness tests for plumbing, standpipes, and sprinklers in accordance with the code, to the extent they are qualified by the terms of their licenses and experience;

(3) Professional engineers, registered architects, licensed master plumbers, and representatives of utility companies may also witness tests of gas piping systems in accordance with the code and applicable rules and regulations of the Department;

(4) Other persons and entities licensed by the Department under title 26 of the code are authorized to perform inspections of work performed under their licenses pursuant to the code and applicable rules and regulations of the Department;

(5) Land surveyors and landscape architects licensed under the New York State Education Law are authorized to review plans and to perform inspections of work performed under their licenses pursuant to the code and applicable rules and regulations of the Department;

(6) Qualified boiler inspectors are authorized to perform boiler inspections under section 27-793(b) of the code and rules promulgated thereunder;

(7) Private elevator inspection agencies certified under Section 11-01 of the rules of this Department are authorized to perform and witness elevator inspections and tests in accordance with code provisions; and

(8) Private electrical inspection agencies certified under section 35-01 of the rules of this Department are authorized to perform electrical inspections.

(b) The authorized representatives listed in subdivision (a) above shall identify themselves by producing copies of their applicable licenses or certifications and shall maintain liability insurance in accordance with applicable code requirements.

(c) Except as otherwise permitted in the code, the authorized representative shall personally conduct the inspections or tests.

(d) Authorized representatives may only perform such inspections and tests for which they are qualified by the terms of their licenses and their experience.

(e) Failure to comply with the applicable law and rules and regulations of the Department shall be grounds for suspension or revocation of an authorized representative's authority to conduct inspections on behalf of the Department.

CHAPTER 47 LICENSED OIL-BURNING EQUIPMENT INSTALLERS

§47-01 Requirement of a seal for use by licensed oil-burning equipment installers.

(a) At the time of issuance of a class A or class B oil-burning equipment installer license, upon payment of the required fee, the commissioner shall issue to the licensee a seal containing the full name of the license holder, the words "licensed oil-burning equipment installer-Class A" or "licensed oil-burning equipment installer-Class B", and the license number. Except as set forth in paragraph (f) below, the license holder shall not be entitled to perform work or hold himself or herself out as a licensed oil-burning equipment installer until such seal has been obtained.

(b) The fee for obtaining a seal shall be one hundred dollars. The biennial renewal fee to retain such seal shall be fifty dollars.

(c) If the seal is lost, and an affidavit is submitted by the licensee establishing such fact, a new seal shall be issued by the commissioner upon application and payment of seventy-five dollars.

(d) All documents which are required to be filed with this Department or other government agency in connection with

work by such licensee shall bear the stamp of the seal as well as the signature of such licensee.

(e) The seal shall remain the property of the City of New York. Upon revocation of an oil-burning equipment installer's license or death of the licensee or failure of a licensee to renew such license, the seal must be surrendered to the Department.

(f) Persons who hold class A or class B oil-burning equipment installer licenses on the effective date of this rule must obtain their seals within 90 days of the effective date of this rule. Prior to the expiration of this 90 day period, such licensees may perform work under their licenses and hold themselves out as licensed oil-burning equipment installers without the use of a seal.

APPENDIX A
DEPARTMENT OF BUILDINGS
Promulgation of Amendments to Regulations Relating to Public Access to Records

Pursuant to Section 1105 of the New York City Charter and by virtue of the authority vested in me as Commissioner of Buildings by Section 643 of such Charter, herewith promulgated are the following amendments to regulations of the Commissioner of Buildings relating to Regulations Relating to Public Access to Records.

REGULATIONS RELATING TO PUBLIC ACCESS TO RECORDS

RULE 1. PURPOSE- The Department of Buildings, in full accordance with the letter and spirit of the State Freedom of Information Law, effective September 1, 1974, does hereby enact regulations to permit all members of the public access to its records.

RULE 2. DEFINITIONS-(a) the term "records" shall mean all information on file which the Department of Buildings is authorized to disclose to the public pursuant to Article 6 of the Public Officers Law and Section 1113 and 1114 of the New York City Charter. Records shall be classified in two categories as follows:

(1) *Records rountinely made available for public inspection.* Such records include, but are not limited to: building applications, plans, certificates of occupancy, index cards and index printouts, violations and complaints with the complainant's name and address deleted.

(2) Records not routinely made available for public inspection.

(b) The term "offices" shall mean the offices of the Department of Buildings which are located at the addresses provided in the City's website, http://www.nyc.gov.

RULE 3. AVAILABILITY-(a) Routine records may be requested at the office where such records are maintained. Requests for said records should be made to the Records Control Officer in the respective office or his/her designee.

(b) Requests for copies or the viewing of records which are not routinely available for public inspection must be made in writing to the Records Access Officer, General Counsel's Office, Department of Buildings (address provided in the City's website, http://www.nyc.gov.

(c) Records are available for public inspection and copying on weekdays and, except holidays, during regular business hours which may vary from office to office.

RULE 4. DESIGNATION OF RECORDS CONTROL OFFICERS- The respective records control officers of the Department of Buildings for the respective offices are hereby designated as follows:

(a) Executive offices
(1) Materials and Equipment Acceptance Division- Director
(2) Division of Cranes and Derricks-Assistant Commissioner
(3) Central Billing Section- Director of Fiscal Operations
(b) Borough offices
(1) Borough of Manhattan- Borough Manager
(2) Borough of The Bronx- Borough Manager
(3) Borough of Brooklyn- Borough Manager
(4) Borough of Queens- Borough Manager
(5) Borough of Staten Island - Borough Manager
(c) Boiler Division Office- Chief, Boiler Division
(d) Elevator Division Office- Director, Elevator Division
(e) Bureau of Electrical Control- Director

Existing Rules 5,6,7 and 8, which were effective September 1, 1974, are deleted and proposed Rules 5 and 6 are added.

RULE 5. FEES- A maximum fee of twenty-five cents is to be charged for each photocopy of departmental records not in excess of nine inches by fourteen inches except for certificates of pending violations (violation searches) and photocopies of individual violations. The fee for certificates of pending violations and for photocopies of individual violations will remain as stated in Section 26-214 of the Building Code. This execption from the twenty-five cents maximum fee limit, which applies to violation searches and copies of violations, does not apply to copies of Bureau of Electrical Control notice of violations and certificates of electrical inspection. The fee charged for any photocopy of departmental records which is larger than nine inches by fourteen inches is to be the actual cost of reproduction.

RULE 6. REVIEW OF DENIAL OF ACCESS- A denial by Records Access Officer may be appealed in writing within thirty days after the receipt of the denial. Appeals should be directed to the F.O.I.L. Appeals Officer (address provided in the City's website, http://www.nyc.gov