

ANNUAL REPORT

PRESIDENT

OF THE

BOROUGH OF THE BRONX

1913

ANNUAL REPORT

OF THE

PRESIDENT OF THE BOROUGH
OF THE BRONX

FOR THE YEAR 1913

THE O'CONNELL PRESS
176 Park Row
New York



March 4th, 1915.

Hon. John Purroy Mitchel,
Mayor, City of New York.

Sir:—

Pursuant to Section 1544 of the Greater New York Charter, I hereby transmit to you the Annual Report of the operations of the Office of the President of the Borough of The Bronx, for the year ending December 31, 1913.

Very truly yours,

(Signed) DOUGLAS MATHEWSON,
President of the Borough of The Bronx.

December 31, 1913.

Hon. Cyrus C. Miller,
President, Borough of The Bronx.

Dear Sir:

I beg to submit herewith a report of the work of the Office of the Consulting Engineer during the year 1913.

As the efforts of this office are directed largely to the examination and study of such matters affecting the Borough of The Bronx and the city at large as the Borough President refers to it for consideration and advice, this report is a condensed statement of the activities of the Borough President in these matters.

Office Records.

In order to facilitate reference, and to eliminate duplication and introduce uniformity in the routine of recording each step in the proceedings for public improvements, from the initiation of proceedings to the completion of the improvements, the forms of record cards originally devised for the use of this office alone have been modified, and have now replaced those used in the Chief Engineer's office and in the Bureau of Information. The titles, index numbers and several other items are filled out in triplicate by the same clerk, and when completely filled out, the card gives a condensed history of the improvement.

To facilitate the decision of questions which frequently arise about the maintenance and reconstruction of existing highway and railroad bridges, a record of all the bridges in the borough has been compiled. It contains a history and a description of each bridge, the laws under which it was erected and who is to maintain it. Since the bridges in this borough, of which there are about 150, were put up at various times, and under various legislative and other acts and agreements, the value of such a record is obvious, and its utility has already been demonstrated on several occasions.

The frequent applications of gas, electric and subway companies for permits to open streets, and several complaints from residents that the companies refused to extend their mains or make house connections, have led to a thorough investigation of the whole franchise history of these companies. The data so collected regarding each company have been compiled, and the records filed. Besides enabling the Borough President to act properly on the applications and complaints, and, as a member of the Board of Estimate and Apportionment, in compelling these companies to pay their just franchise taxes, these records will form a valuable adjunct to the compilation of the records in the Bureau of Sub-surface Structures.

Library.

In the Library and Bureau of Information, shelves have been erected along the walls, and a number of bookcases have been located in other parts of the room. The collection, which now contains about 1,700 bound volumes and 200 pamphlets, besides current numbers and bound volumes of technical periodicals, is intended for reference mainly. Books that are constantly needed by particular bureau are left in those bureaus, but a record is kept in the library so that they may be easily found when wanted by others.

The library has demonstrated its value in the studies and investigations of technical, local and general municipal questions arising in the Borough Presi-

dent's Office. It is only through the medium of a complete, orderly and easily accessible library that the great amount of valuable information contained in the departmental and other reports can really become available for use. A card catalogue is now in process of preparation.

Borough Affairs.

The removal of the posts that support the New York, Westchester and Boston Railway Viaduct over Boston Road, and which form a dangerous obstruction to travel, has been the subject of controversy since 1910. While the present structure has been approved by the city authorities, it is not strong enough to carry the much heavier traffic for which the other bridges on this Road have been designed since it came under the control of the New Haven Railroad Company. After many suggestions from engineers connected with this and with other boroughs and with the Public Service Commission, a type of viaduct for this difficult crossing was evolved in this office, in which a small number of posts are so located as to be out of the way of the currents of traffic from any one of the seven converging streets; it is estimated to cost 25 per cent. less than the unsightly two-span skew truss overhead railroad bridge, of which the Railroad Company was willing to pay half the cost; and it will do away with the necessity for the large central pier in the way of all traffic which the truss bridge required. No agreement has been reached because the Corporation Counsel holds that the Railway Company should pay for the rebuilding of the entire structure. The Borough President, with the authority of the Board of Estimate and Apportionment, attempted to remove the offending posts, but was enjoined from doing so by the Railway Company.

A plan was also evolved in this office for relocating some of the elevated railroad posts at Boston Road and Tremont Avenue. This will permit Tremont Avenue cars to run straight across Boston Road, while the Interborough surface cars from Boston Road can then run on the present Union Railway tracks to Devoe Avenue. The congestion caused by the existing crossing at this point will be greatly relieved. The improvement is estimated to cost \$7,500.

After negotiations lasting over two years, a form of agreement about the viaduct carrying 241st Street across the railroad tracks and the Bronx River, to Wakefield Avenue, Yonkers, was drawn up, which was satisfactory to the City of Yonkers, to the New York Central Railroad Company and to the New Haven Railroad Company. Criticisms by the Corporation Counsel have led to a revision of the plans by which the grades were somewhat reduced, the structure was widened from 50 feet to 80 feet, and several other improvements were made. The matter is now in the hands of the Corporation Counsel and of the Comptroller to make a report to the Board of Estimate and Apportionment.

The attitude of the New York Central Railroad Company in insisting that the City pay a substantial sum for the easement over the New York and Harlem Railroad tracks at Fordham Road has led the City to ask the Public Service Commission to determine whether the General Railroad Law for opening new streets across the railroad could not be applied to this case. The Commission decided that the General Railroad Law did not apply because this crossing was specifically provided for by Chapter 731, Laws of 1905, and by Chapter 736, Laws of 1907. Meanwhile proceedings for condemning the overhead rights of the Railroad Company have been instituted; and the maps have been approved and are now in the hands of the Corporation Counsel.

The proposed improvements on Gun Hill Road between White Plains Avenue and Webster Avenue comprise the widening of the bridge over the tracks of the same railroad. Although the extension of the Third Avenue Elevated

Railroad demands the early reconstruction of this bridge, it has been deemed advisable to wait until it is determined whether the Railroad Law can be invoked in this case to make the railroad share the expense of the structure.

With regard to the reconstruction and the maintenance of old bridges, and the construction of new ones, it is very desirable to settle upon some policy which shall be uniform, at least in the case of each individual railroad, and not to permit each improvement to be made the subject of controversy and haggling. Only in that way is it possible to get rid of the delays to necessary public improvements, which have been so annoying.

In the plans for new bridges and for the reconstruction of old ones, it has become the policy in this office to insist that all pipes, ducts and other sub-surface structures be put below the floor; and that, wherever possible, none of the structural features are to appear above the surface, on the idea that the bridge is a continuation of the highway, rather than a mere crossing, and is to be just as free from surface obstructions.

Since the New York Central Railroad agreed to give up the strip of land which permits the widening of 161st Street along the Mott Haven Yard, a new map for the improvement of the whole street from Macomb's Dam Bridge to Morris Avenue has been approved by the Board of Estimate and has been filed. The City has acquired title to all the land needed to carry out the improvement, with the exception of a strip about 35 feet wide on the south side of 161st Street from the Concourse to Sheridan Avenue, and a triangular piece on the southeast corner of 161st Street and Sheridan Avenue. Since signatures to a petition for widening could not be obtained, the Board of Estimate has initiated proceedings for acquiring title.

General.

As a member of two Commissions, and at the regular conferences among the Consulting Engineers of the several boroughs, your Engineer has had under consideration several important questions affecting the City at large.

After the Commissioner of Water Supply, Gas and Electricity had received bids for the construction of a filtration plant in the east basin of the Jerome Park Reservoir, the Board of Estimate appointed, on February 13th, an Advisory Board of Consulting Engineers, to investigate the necessity for filtering the Croton water, and the adequacy of the plans which had been prepared by the Department on the advice of eminent consulting engineers. This Commission consisted of Messrs. Nicholas S. Hill and John H. Gregory, Consulting Engineers in private practice, the Consulting Engineers of Manhattan and The Bronx, and John H. Frazee of the Finance Department. After a thorough study of the whole question, the majority of the Board reported that filtration, while not urgent, was necessary as a safeguard; and that the method of filtration, the structures and the location shown on the plans of the Department, were best suited to the conditions. The Board of Estimate, however, rescinded the appropriation of \$8,690,000 which it had previously made for the purpose, and appropriated \$50,000 for further study by the Department.

The studies of the Metropolitan Sewerage Commission relative to the pollution of the Harbor waters are coming to a close, and the Commission has promised to submit early in 1914 its final report, and to surrender the data accumulated by it, as the law creating the commission requires.

The Greater New York Charter directs that each Borough President shall have cognizance and control of all subjects relating to the public sewers and drainage of his borough; shall initiate the making of all plans, and shall have charge of the construction of all sewers in his borough. The Board of Estimate, by a resolution adopted June 26th, 1913, created the New York Sewer Plan

Commission, to be made up of the Chief Engineer of the Board of Estimate and of the Consulting Engineers of the several boroughs. This commission is to take over the studies and other data of the Metropolitan Sewerage Commission, to continue the experiments and studies in sewage disposal which have been carried on during the last few years in some of the boroughs, and to act on a uniform policy in passing upon questions affecting the future construction of sewers and sewage disposal plants. A number of conferences have been held, and a study has been made in this office of a very promising method of solving the Harbor pollution problem.

An examination of the tentative specifications for many of the materials used by the several boroughs and by some of the city departments, which the Bureau of Standardization of Supplies had submitted in eleven reports to the Board of Estimate for approval, has revealed many serious defects in them. The Board has, therefore, instructed the head of the Bureau of Standardization to confer with the Consulting Engineers regarding the specifications, and these conferences have resulted in substantial changes in the substance and in the form of the specifications.

The above is only one phase of the very important work which the Consulting Engineers of the several boroughs are doing in the way of introducing uniformity in the plans and details of structures, and in methods of procedure. In this way the freedom of action given by the Charter to each borough is accompanied by the greatest economy and by harmony in the settlement of the questions which affect more than one borough. The several officials in each borough who are occupied with the details of their work have not the time to come together to compare views. On the other hand, a separate body created for the purpose of standardization cannot be sufficiently familiar with local details to render much advice on the many questions that are constantly coming up. The Consulting Engineers who possess this familiarity with local affairs have demonstrated the value of the exchange of views at their numerous conferences and this exchange of views should be encouraged among all city employees doing similar work.

American Road Builders' Convention.

As the representative of this Borough, your Consulting Engineer attended the Eleventh Annual Convention of the American Road Builders' Association held in Philadelphia between the 9th and the 12th of December. The convention was attended by about 3,200 members and delegates from different parts of this country and Canada.

Various phases of road building in practice throughout the country were discussed by the delegates. The methods of construction and maintenance vary to some extent in different parts of the country, depending largely on the kinds of materials available, but the fundamental principles followed in the practice of road building are becoming more and more uniform. The practice is now general throughout the country to treat roads with different kinds of oil in some form or other, either by mixing the oil with the aggregate in the construction of the road, or else by applying it to the roadway after it is built.

The greatest benefit from this and similar conventions is derived not from the reading and discussion of the papers, because these consist very largely of repetitions, in various forms, of ideas and methods which are familiar to most road engineers; but in the intercourse and informal discussions and exchange of views among the delegates outside of the convention hall.

One feature of the convention which is new was the presentation of a paper by a prominent contractor, discussing the relation of the engineer, the inspector and the contractor. This relation was discussed by contractors and engineers

from their individual points of view. Such discussions help to remove the differences which exist between contractors and engineers regarding the preparation of specifications and the carrying out of the work. For some years past there has been a tendency among engineers and contractors to come to a better understanding on these matters.

The exhibit of road building machinery was very complete and instructive. It consisted of all kinds of appliances that are or can be used in the construction of highways.

That men who are in direct charge of highway maintenance are taking an active interest in modern methods of road building was manifested by the fact that a number of them attended this convention. It is the opinion of your Engineer that attendance at conventions of this character should be encouraged, if it does not involve too great an expenditure of time and money.

Yours truly,

AMOS L. SCHAEFFER,
Consulting Engineer.

February 9, 1914.

Hon. Douglas Mathewson,

President, Borough of The Bronx.

Dear Sir:

I transmit herewith report of the transactions of the Local Boards in the Borough of The Bronx, for the year 1913.

Yours truly,

RICHARD W. HILL,

Secretary.

LOCAL BOARDS—BOROUGH OF THE BRONX. REPORT FOR THE YEAR 1913.

No. of Petitions Considered—				No. of Improvements Initiated—				Kind.
1st Quarter.	2nd Quarter.	3rd Quarter.	4th Quarter.	1st Quarter.	2nd Quarter.	3rd Quarter.	4th Quarter.	
15	23	17	21	12	17	6	14	For sewer construction.
1	4	7	9	1	4	3	9	For receiving basins.
7	12	1	1	5	9	..	1	For bituminous pavement.
..	4	..	..	..	3	..	..	For asphalt block paving.
11	35	15	18	6	23	8	14	For regulating and grading.
3	3	3	5	2	3	2	4	For sheet asphalt paving.
19	12	1	5	6	6	1	1	For map changes.
1	1	2	1	..	5	2	1	For erecting guard rail and repairing sidewalks.
12	12	10	13	5	3	5	6	For acquiring title.
4	4	1	3	1	..	2	1	For granite block paving.
1	3	2	1	..	3	2	1	For flagging.
1	1	..	..	..	..	..	..	For viaduct.
..	4	1	1	..	3	..	1	For redressed granite block paving.
..	..	1	..	1	..	..	..	For filling in sidewalk.
..	..	1	..	..	..	1	..	For filling in sunken lots.
..	..	..	3	..	..	..	..	For vesting title.
..	..	..	1	..	..	..	..	For constructing drain.
75	118	62	82	39	79	32	53	

Total number of petitions presented during the year—337.

Respectfully submitted,

RICHARD W. HILL,
Secretary.

July 10, 1914.

Hon. Douglas Mathewson,

President of the Borough of The Bronx.

Sir:

I have the honor to submit the following report of the transactions of the Department of Public Works for the year ended December 31, 1913.

Respectfully,

JOHN G. BORGSTEDE,

Commissioner of Public Works.

Mr. Thomas W. Whittle,
Commissioner of Public Works,
Borough of The Bronx.

Dear Sir:

I transmit herewith summary of the work performed during the year 1913,
by the Bureau of Highways-Maintenance.

Respectfully,

J. STEWART WILSON,
Superintendent of Highways.
January 29th, 1914.

Summary of work performed and materials consumed in connection there-
with during the year 1913:

Macadam Pavement.

Macadam surfaced with screenings	Sq. yds.	28,977
Macadam repaired	Sq. yds.	108,756
Macadam resurfaced with stone and screenings	Sq. yds.	158,709
Macadam laid (new)	Sq. yds.	2,400
Bituminous macadam repaired	Sq. yds.	6,862
Experimental pavement on White Plains Avenue repaired ...	Sq. yds.	305

Aside from repair work macadamized streets were cleaned as often as re-
quired to keep them in sanitary order. Some of these streets which are built
up had to be cleaned twice a week and sometimes more often. At the end of
the year there were 126 miles of macadam roadway.

Oil Applications.

The surface of macadamized streets and other main earth thoroughfares
treated during the year is as follows:

Earth roads treated with asphalt oil	Sq. yds.	1,029,374
Macadam streets treated with tar oil	Sq. yds.	958,773
Macadam streets treated with asphalt oil	Sq. yds.	38,057
Bituminous treatment on the Concourse	Sq. yds.	14,259
Earth roads treated with Glutrin	Sq. yds.	9,911

Road oils have been used quite extensively during the past four years and
each applications seems to have added resistance and durability to the macadam
pavements. Road beds of this kind which have been treated with oil do not
unravel so readily as was the case when water was used as a dust layer; this
change has resulted in decreasing the cost of maintenance.

Pavement.

Granite, tar and gravel joints, repaired	Sq. yds.	2,734
Granite, tar and gravel joints and base repaired	Sq. yds.	188
Granite on concrete and grout joints, repaired	Sq. yds.	55
Granite on sand repaired	Sq. yds.	40,638
Wood block repaired	Sq. yds.	730
Asphalt block including base laid	Sq. yds.	50
Asphalt block surface, repaired	Sq. yds.	4,241
Concrete pavement surface, repaired	Sq. yds.	5

Materials.

Materials used in conjunction with the foregoing described work are as follows:

Trap rock, 16,972 cubic yards; Screenings, 10,508 cubic yards; Ashes, 2,480 cubic yards. Grits, 6,440 cubic yards; Sand, 390 cubic yards; Asphalt Road Oil, 362,608 gallons; Tar Road Oil, 344,765 gallons; Tarvia A, 12,971 gallons; Glutrin, 6,011 gallons.

Earth Roads.

Earth roads covering a distance of 150 miles, an average of 30 feet in width, also including crossings and sidewalks were cleaned, shaped up, freed of obstructions and kept in sanitary condition. Ashes were also spread over a piece of roadway covering an area of 3,667 square yards.

Materials Hauled, Used and Disposed of.

Earth and stone hauled to work	Loads	19,663
Refuse material carted to dump	Loads	29,472

Crosswalks.

Crosswalks repaired	Sq. feet	29,007
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Curbstone.

Blue stone curb reset	Lin. feet	3,514
Native stone curb set	Lin. feet	1,075

Sidewalks.

Sidewalk flagging repaired	Sq. yds.	2,067
Ash walks formed	Sq. yds.	45,819
Earth walks formed	Sq. yds.	4,866
Concrete walk repaired	Sq. yds.	15
Plank walks repaired	Sq. yds.	3,983

Bridges.

Bridges cleaned daily	Sq. yds.	26,254
Bridge flooring repaired	Sq. yds.	21,329

Steps.

Steps connecting public highways, cleaned daily	Sq. yds.	2,680
Steps repaired	Sq. yds.	115

Guard Rail.

Wooden rail repaired	Lin. feet	3,359
Iron rail reset	Lin. feet	13

Gutters.

Asphalt block gutters repaired	Sq. feet	12,024
Granite block gutters repaired	Sq. feet	8,520
Native stone gutters repaired	Sq. feet	11,966
Earth gutters deepened and formed	Sq. feet	1,107

Shop Work.

Work performed by mechanics employed in the repair shop, includes repairing and sharpening tools required to equip the road force; repairing, overhauling and painting sprinkling trucks, carriages, wagons, tool carts, street signs, putting in order steam rollers, automobiles, etc.

The following shows the number of permits issued, renewed and revoked during the year:

Permits issued	11,607
Permits renewed	2,885
Permits revoked	22

Revenue During 1913.

For permits issued	\$19,274.70
For taking up pavements	41,283.43
For redemption of seized incumbrances	37.70
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	\$60,595.83

J. STEWART WILSON,
Superintendent of Highways.

Hon. Thomas W. Whittle,
Commissioner of Public Works,
Borough of The Bronx.

Dear Sir:

I herewith present the following report of the transactions of the Bureau of Public Buildings and Offices, during the year 1913, which I respectfully submit for your consideration.

Yours respectfully,

ROGER W. BLIGH,
Superintendent.

The following buildings and offices in care of this bureau have been kept clean and in repair for the year ending December, 1913.

Municipal Building—Crotona Park.

1st District Municipal Court House—Main Street, Westchester.

2nd District Municipal Court House—162nd Street and Brook Avenue.

6th District City Magistrates Court—162nd Street and Brook Avenue.

8th District City Magistrates Court—This court is located at 181st Street and Boston Road, since September 28th, 1913, formerly located at Main Street, Westchester.

Branch Office, Bureau of Highways—507 Tremont Avenue.

Branch Office, Bureau of Sewers—1517 Williamsbridge Road.

Branch Office, Bureau of Sewers—1519 Williamsbridge Road.

Branch Office, Bureau of Sewers—242nd Street and Broadway.

Repair Shop and Stables, Bureau of Highways—181st Street, Webster and Park Avenues.

Repair Shop and Stables, Bureau of Sewers—181st Street and Webster Avenue.

Interior Bath—Elton Avenue and 136th Street.

Two (2) Floating Baths—131st Street and East River, from July 5th, 1913 to September 29th, 1913.

The following is the working force of this bureau for the year 1913:

Regular Employees.

1 Superintendent	2 Carpenters
1 Clerk	1 Housesmith
1 Telephone Operator	18 Laborers
1 Attendant	3 Watchmen
1 Foreman	36 Female Cleaners
1 Assistant Foreman	

Temporary Employees.

- 2 Engineers
- 3 Firemen, from October 23rd, 1913 to December 31st, 1913.
- 4 Firemen, from January 1st, 1913 to May 3rd, 1913.

The following is the working force at the Interior Bath, for the year 1913:

- 2 Engineers
- 3 Firemen
- 3 Laborers
- 2 Male Attendants
- 2 Female Attendants
- 2 Female Cleaners

The following working force was employed temporarily on the Floating Baths, at 131st Street and East River.

- 4 Male Attendants
- 4 Female Attendants
- 2 Watchmen

The following has been the monthly attendance at the Interior Public Bath, 156th Street and Elton Avenue, for the year 1913:

	Male.	Female.		Male.	Female.
January	23,764	5,321	August	60,739	24,877
February	19,718	3,986	September ..	50,532	17,319
March	29,187	8,706	October	44,233	12,024
April	32,429	6,892	November ...	35,708	4,901
May	41,029	9,683	December ...	26,586	2,529
June	42,959	21,576			
July	55,830	24,510	Total	462,714	142,324

The attendance at the two (2) Floating Baths, during the season of 1913, has been as follows:

	Male.	Female.
July	110,902	41,400
August	62,271	22,677
September	46,610	26,826
Total	219,783	90,903

Amounts expended for Supplies, etc., during the year 1913:

Supplies.

Fuel Supplies	\$3,878.66	
Office Supplies	1,618.95	
Laundry, Cleaning and Disinfecting Supplies	116.73	
General Plant Supplies	185.30	
		<u>\$5,799.64</u>

Equipment.

Executive, Office, Baths and Comfort Stations	1,410.89
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Wearing Apparel.	
Baths and Comfort Stations	\$18.00
General Plant Equipment.	
Office Buildings	\$277.09
Baths and Comfort Stations	163.53
	<hr/> 440.62
Building Materials.	
Office Buildings	492.32
Baths and Comfort Stations	56.77
	<hr/> 549.09
General Plant Materials.	
Office Buildings	1.50
Contract or Open Order Service.	
Office Buildings	2,318.46
Baths and Comfort Stations	1,574.00
	<hr/> 3,892.46
Carfares.	
Office Buildings	74.15
Baths and Comfort Stations	30.00
	<hr/> 104.15
Communication.	
Public Buildings	1,630.30
General Plant Service.	
Office Buildings .....	.....
Baths and Comfort Stations	712.00
Contingencies.	
Public Buildings and Offices	77.61
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Total	\$14,636.26
Amounts expended for Salaries and Wages, by the Bureau of Public Buildings and Offices, during the year 1913:	

Care of Public Buildings and Offices.	
Code No. 2834 Executive, Salaries, Regular Employees	\$7,450.00
Office Buildings.	
Code No. 2841 Repairing, Salaries, Regular Employees	23,433.00
Code No. 2842 Janitorial Service, Regular Employees	15,880.76
Code No. 2850 Heat, Light and Power, Temporary Employees....	4,099.50
Baths and Comfort Stations.	
Code No. 2843 Janitorial Service, Regular Employees	7,270.00
Code No. 2844 Heat, Light and Power, Regular Employees	6,570.00
Floating Baths.	
Code No. 2849 Janitorial Service, Temporary Employees	2,311.50
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Total	\$67,014.76

April 23, 1914.

Mr. John G. Borgstede,
Commissioner of Public Works.

Dear Sir:

I transmit herewith statement for report to the Mayor, of requisitions made upon the Comptroller for the year 1913, chargeable to Budget Allowance, Revenue Bonds, Corporate Stock, Assessment and Trust Funds, subdivided as to the amounts expended on account of each bureau or division of the Office of the President of the Borough of The Bronx, for Salaries and Wages, Construction, Repairs, Supplies, Equipment, etc., together with recapitulation of said expenditures, showing grand totals of said bureaus or divisions.

Appended to said report of requisitions, is a statement of the total amount of cash received from various sources during the year ending December 31, 1913.

All of which is respectfully submitted.

JOHN OSBORN,
General Bookkeeper.

PRESIDENT, BOROUGH OF THE BRONX.

Statement of expenditures for the year 1913, which shows the amount expended by each bureau or division, the services rendered, and the class of funds charged.

Administration.	Salaries and Wages.	Teams and Carts.	Construction, Repairs, Supplies, Equipment, Etc.	Total.
Budget—Tax Levy, 1912.....			\$213.58	\$213.58
Budget—Tax Levy, 1913.....	\$80,947.96		1,332.57	82,280.53
Total	\$80,947.96		\$1,546.15	\$82,494.11
Highways—Maintenance.				
Budget—Tax Levy, 1911.....			\$445.73	\$445.73
Budget—Tax Levy, 1912.....	\$4,656.36	\$65.00	13,101.73	17,823.09
Budget—Tax Levy, 1913.....	370,585.53	78,431.68	163,639.90	612,657.11
Revenue Bonds—Wages, Laborers, Rock Soundings.....	290.23			290.23
Revenue Bonds—Repairs to Stone Pavements.....	41.83			41.83
Revenue Bonds—Purchase of Street Signs.....			2,472.90	2,472.90
Revenue Bonds—Repairs to Pavement, White Plains Avenue.....			27,813.93	27,813.93
Revenue Bonds—Painting Melrose Ave. Viaduct.....			4,325.00	4,325.00
Special & Trust Funds—Restoring and Repaving Street Improvement Fund—(Wages, Laborers, Assessment—Rock Soundings).....	6,237.45	1,490.02	16,340.50	24,068.06
	1,944.96			1,944.96
Total	\$383,756.36	\$79,986.70	\$228,139.78	\$691,882.84
Sewers—Maintenance.				
Budget—Tax Levy, 1912.....	\$2.50		\$1,253.36	\$1,257.86
Budget—Tax Levy, 1913.....	74,478.22	\$27,722.35	5,199.16	107,400.03
Total	\$74,480.72	\$27,722.35	\$6,452.52	\$108,655.59
Public Buildings and Offices.				
Budget—Tax Levy, 1912.....	\$70.00		\$3,197.17	\$3,267.17
Budget—Tax Levy, 1913.....	67,014.76		14,636.26	\$1,651.02
Revenue Bonds—Repairs to Elton Ave. Bath.....			4,284.12	4,284.12
Revenue Bonds—Water Pipe to Borough Hall.....			725.00	725.00
Total	\$67,084.76		\$22,842.55	\$80,927.31
Buildings.				
Budget—Tax Levy, 1912.....	\$865.51		\$271.54	\$1,137.05
Budget—Tax Levy, 1913.....	112,110.65		1,770.79	113,881.44
Revenue Bonds—In accordance with Sec. 157, Building Code.....			5,458.19	5,458.19
Special Fund—In accordance with Sec. 158, Building Code.....			270.00	270.00
Total	\$112,976.16		\$7,770.52	\$120,746.68
Engineering.				
Budget—Tax Levy, 1912.....			\$553.27	\$553.27
Budget—Tax Levy, 1913.....	\$141,032.14		6,115.97	147,148.11
Corporate Stock—Bridge, Pelham Ave.....	47.00			47.00
Corporate Stock—Bridge, Gun Hill Road.....	18.44			18.44
Corporate Stock—Bridge, Becker Ave.....	39.78			39.78
Corporate Stock—Transverse Road, 161st St.....	1,387.47			1,387.47
Corporate Stock—Transverse Road, Bedford Park Boulevard, etc.....	10,073.62		120,527.18	130,600.80
Corporate Stock—Sewerage and Drainage District Plans.....	11,871.02		506.53	12,377.56
Corporate Stock—Improving Junction 3d and Franklin Aves.....	538.05		2,733.69	3,271.74
Corporate Stock—Improving Junction 3d Ave. and Boston Road.....			233.31	233.31
Corporate Stock—Repaving Streets.....	28,008.10		464,993.92	493,002.02
Corporate Stock—Regulating E. 165th Street.....	358.42		7,242.06	7,600.48
Corporate Stock—Repaving E. 149th Street.....			678.71	678.71
Corporate Stock—Fund for Topographical Bureau Openings.....	36,874.58		2,421.25	39,295.83
Corporate Stock—Fund for Street and Park Special and Trust Funds—Street Improvement Fund.....	42,716.33			Asst. 42,716.33
	207,083.12		2,430,837.29	2,637,922.41
Total	\$480,650.08		\$3,036,843.18	\$3,516,893.26
Special Authorizations of Corporate Stock Not Under the Jurisdiction of the Engineering Division.				
Corporate Stock—Construction of Court House.....	\$1,336.50		\$250,911.00	\$252,247.50
Corporate Stock—Purchase of Poe Cottage.....			3,000.00	3,000.00
Corporate Stock—Construction of Public Comfort Station.....			250.00	250.00
Corporate Stock—Installation Lighting Equipment, Borough Hall.....			607.00	607.00
Corporate Stock—Erection of Fire Escapes.....			1,315.80	1,315.80
Total	\$1,336.50		\$252,683.80	\$254,026.30

PRESIDENT, BOROUGH OF THE BRONX.
Recapitulation of Expenditures for the Year 1913.

Bureau or Division.	Payroll Expenditures for Salaries and Wages.	Payroll Expenditures for Teams and Carts.	Contract, Open Market and Miscellan- eous Expenditures for Construction, Repairs, Supplies, Equipment, Etc.	Total.
Administration	\$80,947.96		\$1,546.15	\$82,494.11
Highways—Maintenance	383,756.38	\$79,986.70	228,139.78	691,882.84
Sewers—Maintenance	74,450.72	27,722.33	6,454.82	108,627.89
Public Buildings and Offices..	67,084.76		22,842.55	89,927.31
Buildings	112,970.16		7,770.52	120,740.68
Engineering	480,050.08		3,036,843.18	3,516,893.26
Special Authorizations	1,330.50		286,083.80	287,410.30
Total	\$1,200,632.54	\$107,709.03	\$2,589,880.80	\$4,898,022.30

Cash Received from Various Sources During the Year Ending December 31, 1913.

For Permits to Open Streets (Restoring and Repaving)	\$41,042.93
For Permits to Make Sewer Connections	13,815.30
For Permits to Construct Vaults	5,399.30
For Permits to Construct Temporary Sheds	15.00
For Redemption of Seized Incumbrances	37.70
For Use of Steam Roller by Contractors	67.50
For Advances—Reimbursement of labor and material expended by Highways— Maintenance force	1,023.24
For Collections from Railroad Companies for share of cost of contracts for Paving and Repaving between tracks	155,841.21
For Sale of Maps	680.89
For Sales, Old Material, etc.	532.40
	\$218,484.47
Received from Corporation Counsel a/c Superintendent of Buildings—Collections of expenses incurred, from defendants in prosecution of building violations	6,902.00
	\$225,387.37
Security Deposits received in connection with permits issued to cross sidewalks with teams, etc.	15,072.00
Total Cash Receipts	\$241,359.37

DEPARTMENT OF PRESIDENT, BOROUGH OF THE BRONX.
Statement of Balances of General Ledger Accounts as at December 31, 1913.

Title of Account.	Debit.	Credit.
Budget Allowance, 1910	\$1,080.48	
Budget Allowance, 1911	1,427.54	
Budget Allowance, 1912	1,869.18	
Budget Allowance, 1913	47,831.90	
Appropriation, 1910		\$1,080.48
Appropriation, 1911		1,427.54
Appropriation, 1912		1,869.18
Appropriation, 1913		47,831.90
Special Revenue Bond Fund	314.44	
Special Revenue Bond Fund, Reserve		314.44
Corporate Stock Fund	23,779.59	
Corporate Stock Fund, Reserve		23,779.59
Special and Trust Funds	10,809.16	
Special and Trust Funds, Reserve		10,809.16
Open Market Orders	25,441.58	
Open Market Orders, Reserve Appropriation, 1913...		10,082.29
Open Market Orders, Reserve Corporate Stock Fund		472.00

Title of Account.	Debit.	Credit.
Open Market Orders, Reserve Special Revenue Bond Funds		14,887.29
Contracts	746,011.78	
Contract Orders	5,422.03	
Contract, Reserve Appropriation, 1913		12,742.02
Contract, Reserve Corporate Stock Funds		733,681.91
Contract, Reserve Special Revenue Bond Funds		5,009.88
Corporate Stock Authorized	1,782,750.00	
Reserve for Corporate Stock Authorized		1,782,750.00
Special Revenue Bonds Authorized	26,302.00	
Special Revenue Bonds Authorized (Reserve)		26,302.00
Invoices Payable		26,833.10
Expenses.		
Stores	\$139,941.05	
Expenses—Prior Years	26,031.18	
Expenses—Current Year	1,058,685.92	
Construction	3,670,723.72	
Recoverable	50,525.65	
	4,945,907.52	
Department of Finance		4,905,259.60
Accounts Receivable	826.27	
Accounts Receivable—Railroad Companies	28,638.83	
Bills Rendered		826.27
Recoverable Expenses—Railroad Companies		28,638.83
Restoring and Repaving Deposits		6,223.17
Restoring and Repaving Deposits—Fire Department..		1,747.00
Restoring and Repaving Deposits (Excess Accounts)	45.95	
Reserve for Restoring and Repaving Deposits		1,488.74
Surplus Restoring and Repaving		1,165.43
Refunds due Plumbers		3,236.43
	\$7,648,458.25	\$7,648,458.25
Special and Trust Funds.		
S. 98 After June 1, 1912	\$13,814.82	
S. 98 After June 1, 1912, Retained	383.03	
S. 98 Before June 1, 1912	3,582.55	
	\$17,780.40	
S. 98a Dept. Water Supply, etc.	94.64	
S. 116 Bureau of Buildings	7,131.97	
	25,007.01	
Special and Trust Fund Reserve		25,007.01

February 11, 1914.

Hon. Thomas W. Whittle,

Commissioner of Public Works,

Borough of The Bronx.

Dear Sir:

I herewith submit report of the Bureau of Information for the year 1913:

This Bureau has been in existence for about four years. Its purpose is to furnish information to the public regarding the status of proceedings for local improvements, that have been initiated in the Local Boards and authorized by the Board of Estimate and Apportionment. These matters relate to the laying out and widening of streets, naming of streets, acquiring title to the same, and the physical development that follows, such as regulating, grading, paving, constructing sewers and receiving basins, and the approximate cost per 25-foot lot.

In title proceedings records are kept of the progress made by the Commissioners of Estimate and Assessment from the time application is made to the Supreme Court for their appointment, to the date of confirmation of their final report and the levying of the assessment.

Information is also sent to property owners who request the same, relative to the progress of proceedings after the assessment lists for local improvements have been forwarded to the Board of Assessors, so that they may learn from that Board the amount of the proposed assessment and the time for presenting objections, if there are any.

Property owners are also informed as to the approximate time when assessments are likely to be confirmed; also when they become liens against the property and the time limit for payment before interest charges are added. Information and instructions are also given to those who desire to cede their land for street purposes.

During the past year 600 communications were sent to those who requested that information be sent them regarding proceedings in which they were interested. Telephone calls and visitors averaged about 175 per month. A register of the names and addresses of those seeking information is open for inspection. Before this Bureau was established, citizens were obliged to go to the various departments for the information which is now centralized here.

Respectfully,

HENRY L. BRIDGES,

In Charge of Bureau of Information.

January 31, 1914.

May 15, 1914.

Hon. John G. Borgstede,
Commissioner of Public Works.

Dear Sir:

In accordance with the usual custom, I am forwarding herewith Annual Report of work accomplished in the various bureaus coming under my jurisdiction, for the year ending December 31st, 1913.

Respectfully,

R. H. GILLESPIE.
Chief Engineer.

March 9th, 1914.

Mr. R. H. Gillespie,
Chief Engineer of Sewers and Highways.

Sir:

I herewith hand you Annual Report for 1913, making a partial analysis of the report, calling attention to some of the details of matters contained therein.

At the beginning of the year 1913, there were 64 contracts in force, and during the year, 99 contracts were executed. Of this number, 124 contracts were completed and one contract declared abandoned, leaving at the end of the year 1913, 38 contracts still in force. During the year 240 reports were made to the Local Board, representing an approximate value of \$3,700,000. The estimates prepared for letting during the year were 125 in number, representing an estimated cost of \$3,150,000, and a length of approximately 48 miles. During the year, payments were certified, amounting to \$1,840,206.23.

The total excavation on the various contracts during the year amounted to over 278,000 cubic yards, while the filling on contract work amounted to a little less than 657,000 cubic yards. The curbing laid and relaid on the various streets amounted to about 218,000 linear feet. The flagging laid and relaid during the year amounted to a little over 500,000 square feet, of which something over 325,000 square feet was cement flagging.

The average prices for the different kinds of pavement laid during the year are approximately as follows:

Sheet Asphalt, \$1.25 per square yard.
3-inch Asphalt Block, \$1.94 per square yard.
New Granite Block, \$3.03 per square yard.
Modern Granite Block, \$3.45 per square yard.
Granite Block, redressed, \$1.33 per square yard.
Bituminous Concrete, \$1.06 per square yard.

It will be noted that the cost of sheet asphalt averages \$.32 per square yard less than in 1912. Block asphalt exceeds the average for 1912 by \$.24 per square yard. Modern granite block cost \$.28 per square yard less than in 1912. Redressed granite cost \$.15 per square yard more than in 1912 and bituminous concrete averaged \$.17 per square yard less than in 1912. The difference in price between sheet asphalt, of which 14 contracts were completed, and bituminous concrete, of which 17 contracts were completed, was \$.19 per square yard in favor of the bituminous concrete. Up to the present time the wear of the bituminous concrete pavement has been satisfactory.

Commenting upon some of the works in progress during the year, I would call attention to the fact that CROMWELL AVENUE was practically finished in March, 1913, but owing to some questions relative to the excess time on said contract, the Payment on Acceptance was not forwarded until in the Fall.

BOSTON ROAD, regulating and grading, between White Plains Road and the City Line was completed in July, and another contract has been let and

partly constructed between the same limits for a strip of bituminous concrete 16 feet in width, which will make a good, although narrow roadway for automobiles and general traffic.

The Transverse Road at EAST 174th STREET under the Grand Boulevard and Concourse is well advanced and should be completed by the middle of 1914. This work has progressed very slowly, owing to the necessity of allowing a period for setting of the cement in each ring of the arch before the centers could be dropped.

Another Transverse Road across the Grand Boulevard and Concourse has been completed at BEDFORD PARK BOULEVARD, furnishing another means for crossing the Boulevard without interfering with traffic on the same.

The repaving of EAST 180th STREET, between Third Avenue and Bronx Street, has been completed, and furnishes an exceptionally fine cross town thoroughfare which was very much needed.

The repaving of MELROSE AVENUE, between 163rd Street and Brook Avenue, has again placed the viaduct occupying a portion of this district in good shape for traffic, and it is expected that the expansion cracks that formerly interfered with the surface of the roadway have been provided for, so that they can be kept within a definite location.

The completion of the pavement on WALKER AVENUE, from Morris Park Avenue and Unionport Road, has afforded a continuous paved surface from Tremont to Westchester Village, and furnishes a good avenue for vehicular traffic which was very much needed.

The repaving of WESTCHESTER AVENUE, between Southern Boulevard and Ward Avenue, with granite blocks on a sand foundation, has been partially completed, and will be finished early in 1914, and in connection with the further repaving of Westchester Avenue contemplated, provide a much needed means of access to the easterly part of the Borough.

WEBSTER AVENUE, from 178th Street to 187th Street, and from 200th Street to 233rd Street, has been under construction (3 contracts) during the year, and has been completed between 178th Street and 187th Street, and most of the work done between 200th Street and Gun Hill Road. The first section of this is redressed granite blocks, and affords another very good example of the results that can be obtained from a proper use of the redressed stone. The portion between Gun Hill Road and 233rd Street is being paved with modern granite block on a concrete foundation.

Contracts for the repaving of TREMONT AVENUE, between Webster Avenue and Boston Road, have been let during the year; the portion between Third Avenue and Boston Road has been begun and the contract between Webster Avenue and Third Avenue was declared abandoned on account of failure of the contractor to proceed with his work, and the same has been relet.

The regulating and grading of FIELDSTON ROAD, from Moshulu Avenue to north of 250th Street, was let in the latter part of the summer, and calls for heavy work in the matter of filling and construction of retaining walls for a section north of 253rd Street. The height of wall is over 30 feet.

With this report, I hand you views of the following:

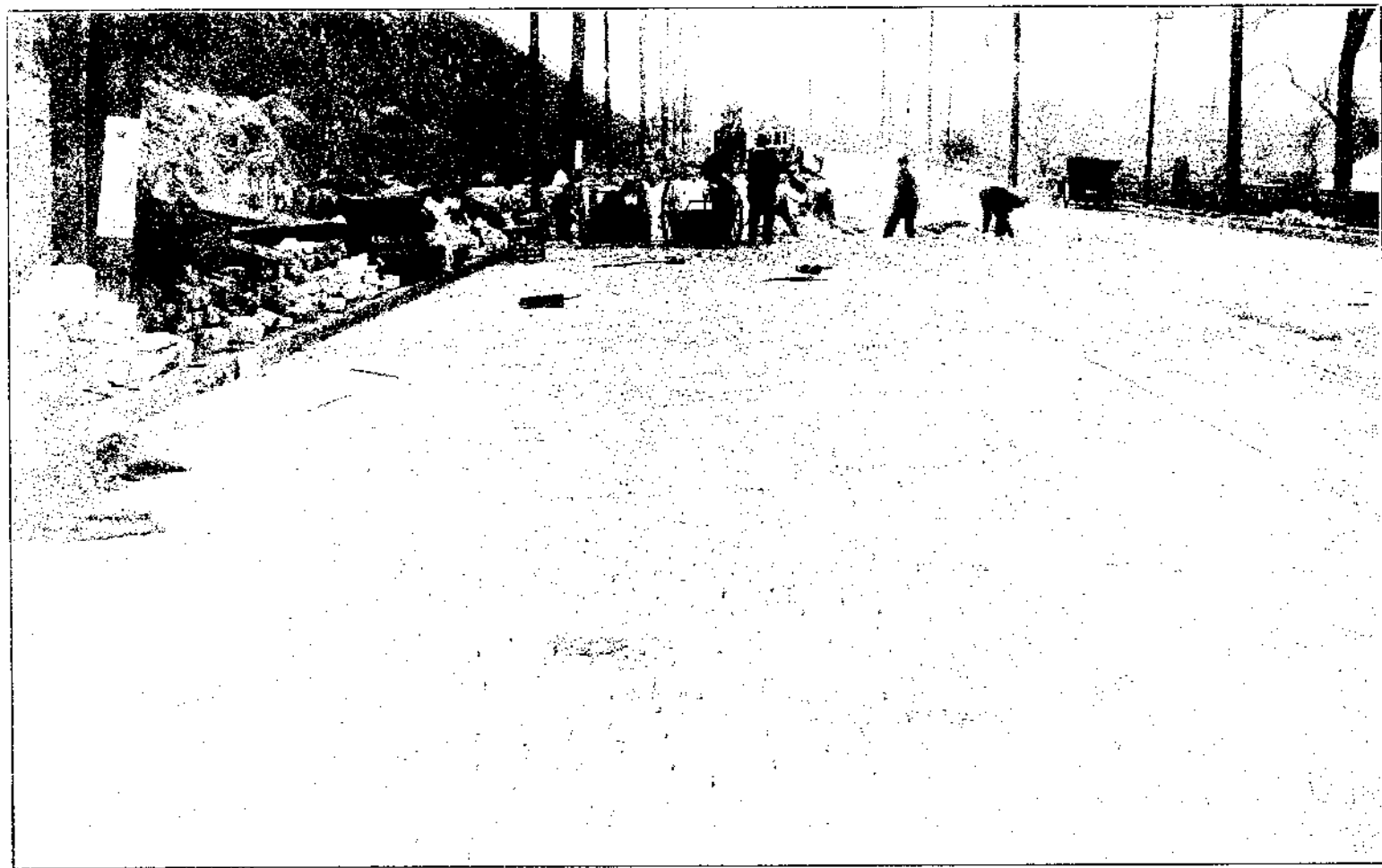
1. Chart showing graphically total mileage of pavement existing at the end of each year, from 1902 to 1913, inclusive.

2. View of new granite pavement ready for grout on Webster Avenue near 207th Street.
3. Redressed granite, first grouting, Webster Avenue, near E. 179th Street.
4. Redressed granite just laid on Webster Avenue, near 179th Street.
5. New granite pavement, two months old, on Webster Avenue, near 207th Street.
6. Redressed granite pavement, three months old, on Webster Avenue, near 179th Street.
7. Redressed granite pavement, five years old, on Webster Avenue, near 170th Street.
8. Bituminous concrete pavement on Perry Avenue, near 205th Street. This work has been down about two years and presents a very smooth and uniform wearing surface.
9. View showing waterproofing over arch at 174th Street Transverse Road.
10. A model for molded concrete used on the finished face of the arch at 174th Street Transverse Road.
11. View of west face of arch at 174th Street Transverse Road.
12. View of the Intersection of Franklin Avenue and Third Avenue before improvement.
13. View of the Intersection of Franklin Avenue and Third Avenue after improvement.
14. Steam shovel at work on Fieldston Road, regulating and grading contract.

Respectfully,

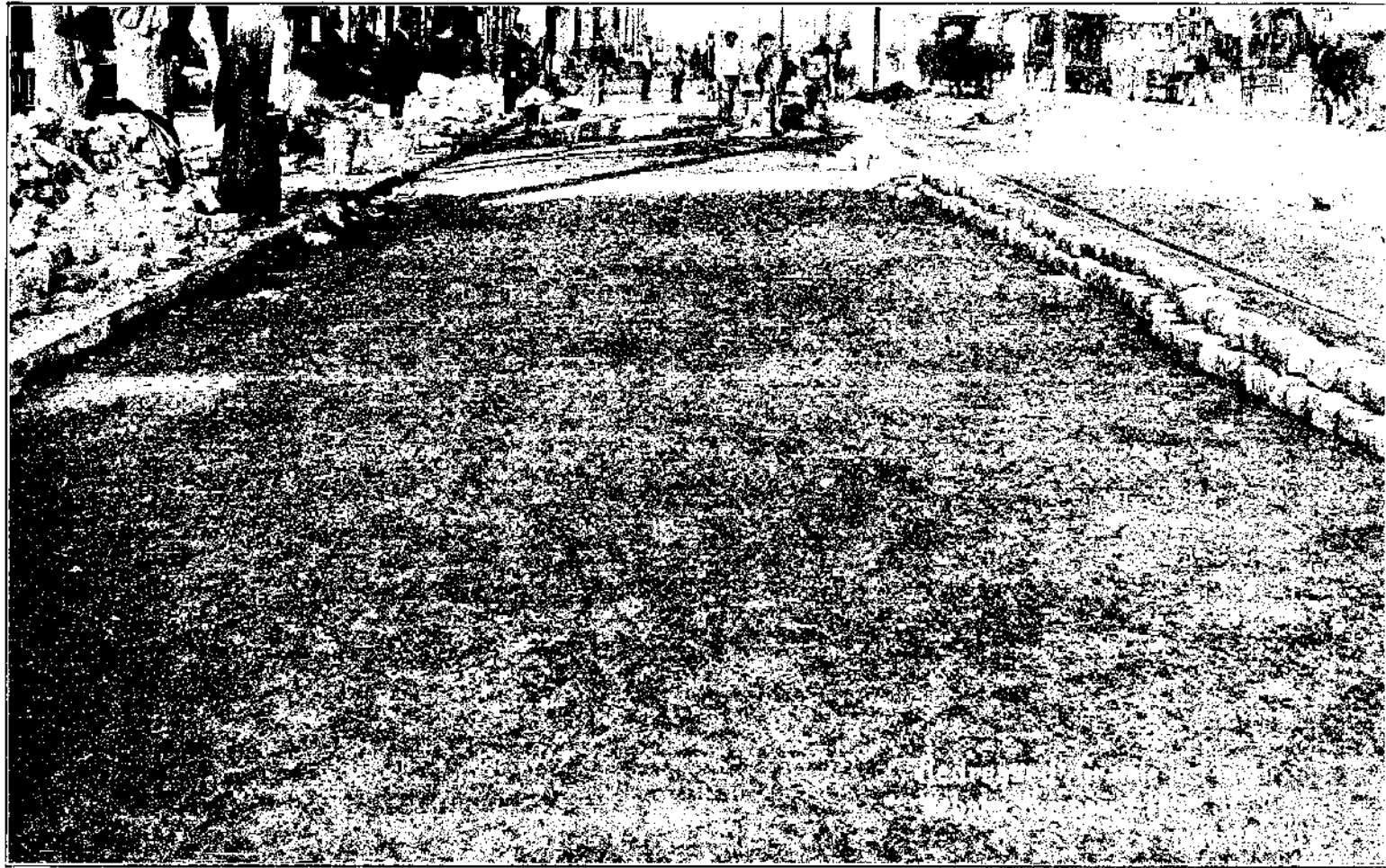
S. C. THOMPSON,

Engineer of Highways.





Redressed Granite 1st grouting
Webster Ave. near E. 179th St.
Nov. 6th 1913







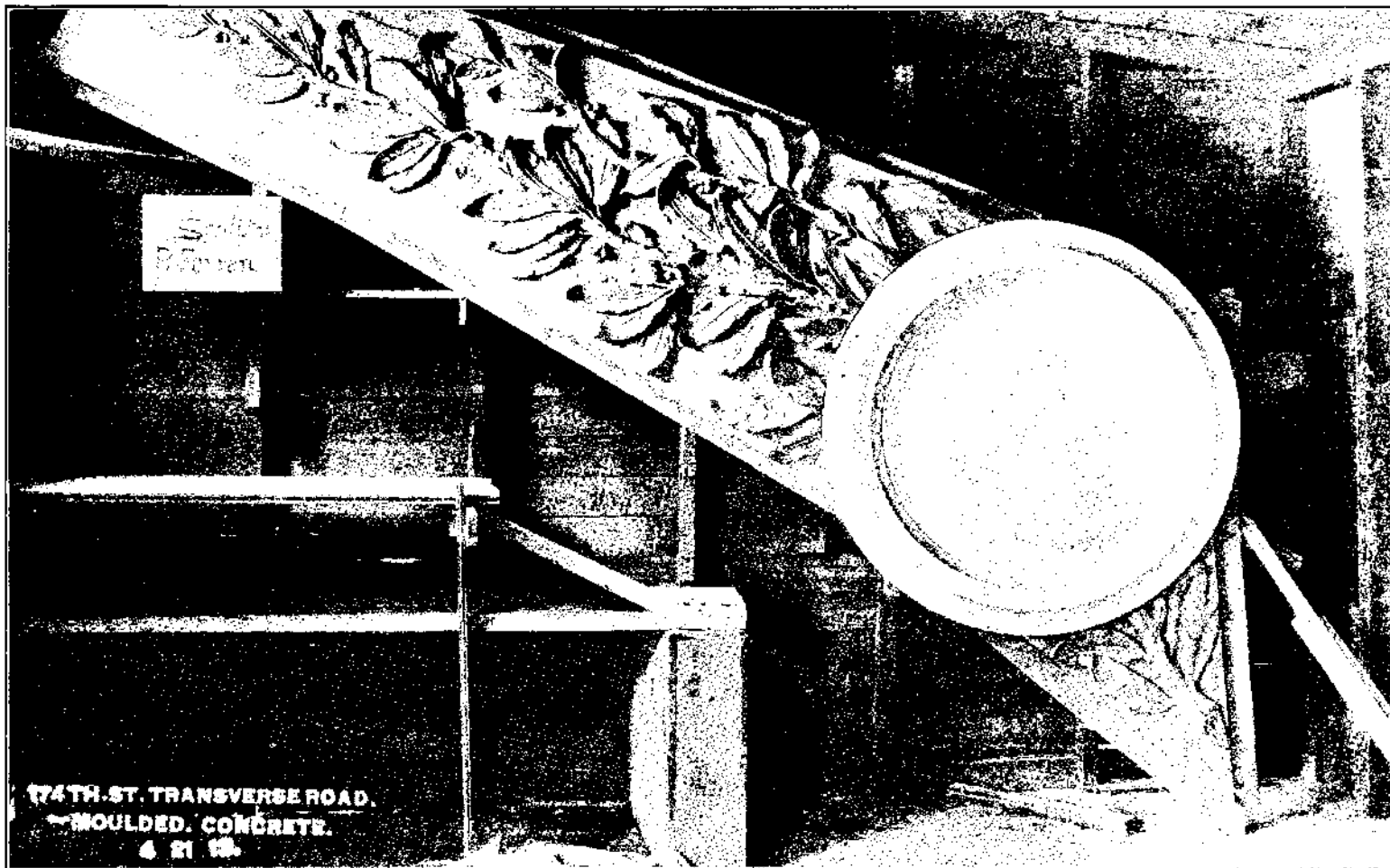




Bituminous Concrete - 2 1/2 in. old
Perry Ave. near 205th St.

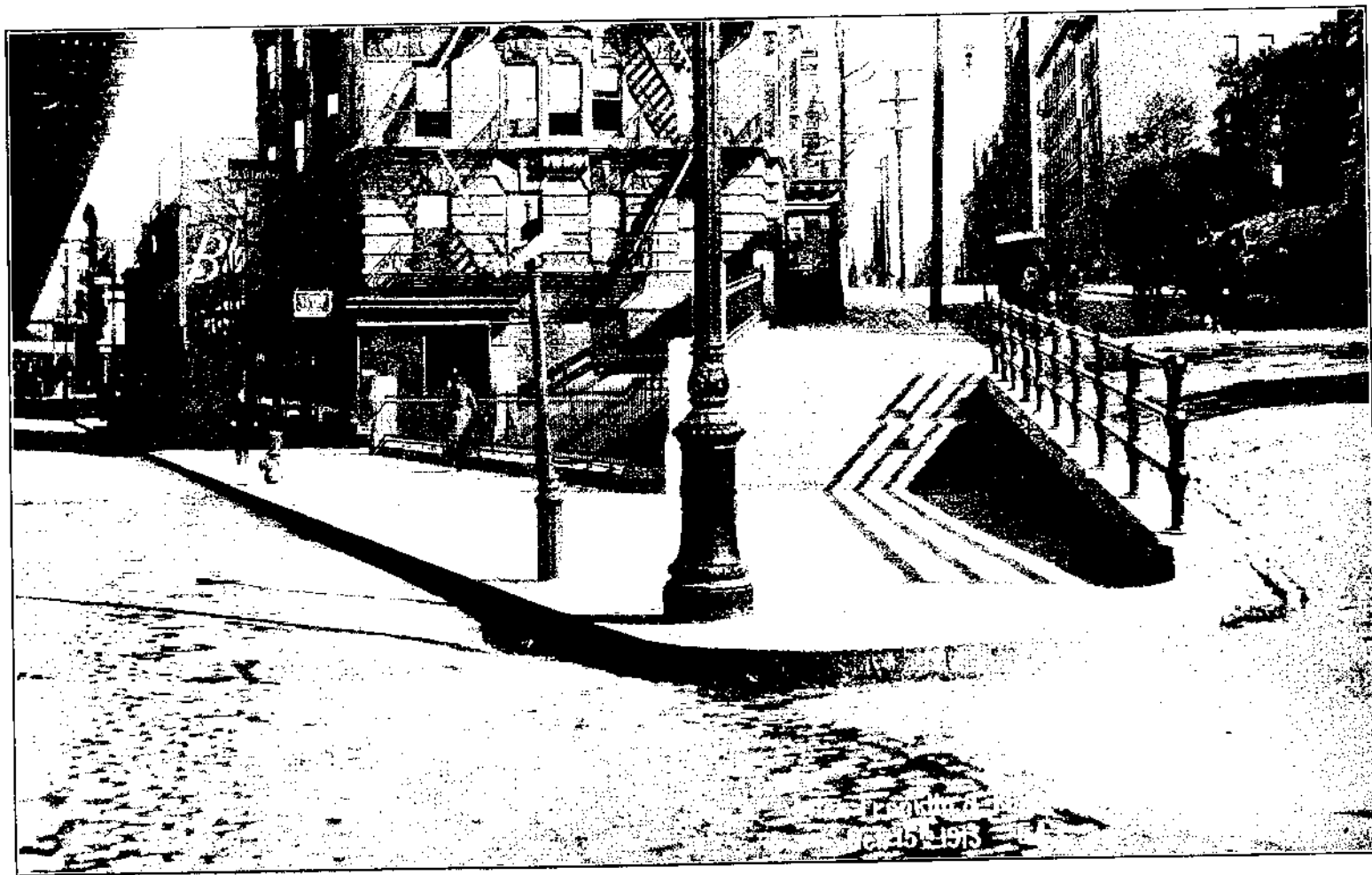
Nov. 6 1913











Franklin D. Roosevelt
 Dec 15, 1913



ANNUAL REPORT, BUREAU OF HIGHWAYS, BOROUGH OF THE BRONX.

Paved.	Wood Block.	Trap Block.	Granite Block.	Sheet Asphalt.	Asphalt Block.	Brick.	Bituminous Concrete.	Medina Block.	Iron Slag Block.	Totals.
December 31, 1913	4.376	0.077	45.155	50.520	60.708	0.094	11.847	0.282	1.545	174.604
January 1, 1913	4.359	0.167	41.694	46.949	59.426	0.492	6.678	0.282	1.545	161.592
During year	0.017	0.090	3.461	3.571	1.282	0.398	5.169	....	....	13.012

IN DETAIL.

	Lin. ft.	Miles.	Lin. ft.	Miles.	Lin. ft.	Miles.
Granite Block (Laid and Relaid):						
On sand, Westchester Avenue, from So. Boulevard to Ward Line (part)....	1,600.0	.303				
On sand, Tiffany Street, from Edgewater Road to Dock	177.0	.034				
On sand, River Avenue, from E. 149th Street to about 450 feet south of 151st Street	767.5	.145				
On sand, German Place, from Westchester Avenue to Rac Street	467.2	.088				
On sand, Burnside Avenue, from Aqueduct Avenue to Sedgwick Avenue ...	1,317.0	.249				
On sand, E. 170th Street, from Bristow Street to Wilkins Place	460.9	.087				
On sand, Cedar Avenue, from Sedgwick Avenue to W. 179th Street	1,695.8	.321				
On sand, W. 177th Street, from Cedar Avenue to N. Y. & P. R. R.	86.3	.016				
Redressed, Tremont Avenue, from Third Avenue to Boston Road (part) ...	625.0	.118				
On concrete, E. 133rd Street, from Alexander Avenue to Willis Avenue ...	673.6	.128				
On concrete, Exterior Street, from University Heights Br. to Fordham Road	370.0	.072				
On concrete, Fordham Road, from Exterior Street to Public Dock	47.0	.009				
On concrete, Bailey Avenue, from Albany Road to Ft. Independence Street.	443.5	.084				
On concrete, So. Boulevard, from Barretto Street to Westchester Avenue...	169.6	.032				
On concrete, E. 183rd Street, from Arthur Avenue to So. Boulevard	721.5	.136				
On concrete, E. 180th Street, from Third Avenue to Bronx Street	1,164.5	.221				
On concrete, Webster Avenue, from Bedford Park Boulevard to Gun Hill Road (part)	4,295.5	.813				
On concrete, Webster Avenue, from Gun Hill Road to 233rd Street (part)...	2,050.0	.392				
Redressed, E. 156th Street, from Cauldwell Avenue to Dawson Street	1,922.0	.361				
Redressed, Brook Avenue, from E. 156th Street to Third Avenue	947.1	.179				
Redressed, E. 150th Street, from Third to Melrose Avenues	151.0	.029				
Redressed, E. 151st Street, from Third to Melrose Avenues	275.6	.052				
Redressed, E. 155th Street, from Third to Elton Avenues	168.2	.032				
Redressed, Elton Avenue, from Third Avenue to E. 155th Street	538.9	.102				
Redressed, Melrose Avenue Viaduct, from E. 163rd Street to Brook Avenue..	170.6	.032				
Redressed, E. 179th Street, from Park Avenue to Third Avenue	602.8	.131				
Redressed, Webster Avenue, from E. 178th Street to E. 187th Street	3,877.9	.734				
Total laid			26,476.0	5.013		

	Lin. ft.	Miles.	Lin. ft.	Miles.	Lin. ft.	Miles.
GRANITE BLOCK, Removed or Replaced.						
On concrete, Melrose Avenue Viaduct, from 163rd Street to Brook Avenue			170.6	0.032		
On sand, Tremont Avenue, from Third Avenue to Boston Road			625.0	0.118		
On sand, E. 156th Street, from Cauldwell Avenue to Dawson Street			1,922.0	0.364		
On sand, E. 150th Street, from Third to Melrose Avenues			131.0	0.029		
On sand, Elton Avenue, from Third Avenue to 155th Street.....			505.9	0.096		
On sand, Brook Avenue, from 156th Street to Third Avenue			947.1	0.179		
On sand, Webster Avenue, from 178th to 187th Streets			3,877.9	0.734		
Total removed or replaced			8,199.5	1.552		
Total laid			26,476.0	5.013		
Total removed or replaced			8,199.5	1.552		
Net increase			18,276.5	3.461		
TRAP BLOCK, Removed or Replaced.						
151st Street, from Third to Melrose Avenues			275.6	0.052		
155th Street, from Third to Elton Avenues			168.2	0.032		
Elton Avenue, from Third Avenue to 155th Street			33.0	0.006		
Total removed			476.8	0.090		
WOOD BLOCK, Laid or Relaid.						
Southern Boulevard, from Baretto Street to Westchester Avenue	85.6	0.017				
BRICK PAVEMENT, Removed.						
Beck Street, from Leggett Avenue to Longwood Avenue	903.4	0.171				
Kelly Street, from 156th Street to Longwood Avenue	539.2	0.102				
156th Street, from Beck Street to Kelly Street	200.0	0.038				
Clay Avenue, from 165th Street to 166th Street.....	459.0	0.087				
Total removed	2,101.6	0.398				

IN DETAIL.—Continued.

	Lin. ft.	Miles.	Lin. ft.	Miles.	Lin. ft.	Miles.
BITUMINOUS CONCRETE, Laid.						
Commonwealth Avenue, from Walker Avenue to Merrill Street	1,021.2	0.193				
Lind Avenue, from Ward Line to Aqueduct Avenue	435.9	0.082				
Aqueduct Avenue, from Lind Avenue to Washington Bridge	870.8	0.165				
Aqueduct Avenue, from Fordham Road to Kingsbridge Road	2,217.6	0.420				
E. 173rd Street, from So. Boulevard to Bryant Avenue	742.0	0.140				
Manida Street, from Lafayette Avenue to Eastern Boulevard ..	2,360.6	0.447				
Walton Avenue, from 177th Street to Tremont Avenue	517.9	0.098				
W. 261st Street, from Riverdale Avenue to Broadway	1,751.0	0.332				
Devoc Terrace, from Webb Avenue to W. 190th Street	972.0	0.184				
St. Lawrence Avenue, from Walker Avenue to Merrill Street	1,136.6	0.215				
Ogden Avenue, from W. 169th Street to Aqueduct Avenue	1,551.8	0.294				
202nd Street, from Webster Avenue to N. Y. & H. R. R.	229.6	0.044				
Morris Avenue, from E. 167th Street to E. 170th Street	1,755.0	0.332				
Morris Avenue, from E. 184th Street to Fordham Road	822.6	0.158				
Findlay Avenue, from E. 165th Street to E. 166th Street	452.4	0.086				
Hoe Avenue, from E. 173rd Street to Boston Road	1,098.2	0.208				
Nelson Avenue, from Featherbed Lane to Macombs Road	1,346.9	0.255				
Vyse Avenue, from E. 173rd Street to E. 177th Street	2,250.3	0.426				
Garrison Avenue, from Tiffany Street to Hunts Point Avenue ..	985.7	0.187				
Vyse Avenue, from E. 172nd Street to E. 173rd Street	613.8	0.116				
Brandt Place, from University Avenue to Nelson Avenue	221.8	0.042				
W. 174th Street, from Nelson Avenue to Macombs Road	579.6	0.110				
Kingsbridge Avenue, from W. 230th Street to W. 234th Street ..	1,723.7	0.326				
Morris Avenue, from E. 166th Street to E. 167th Street	1,078.0	0.204				
Boston Road, from White Pl. Road to City Line (part) 16' roadway ..	7,700.0	1.458				
Total laid			34,435.0	6.522		
BITUMINOUS CONCRETE, Removed.						
Bituminous concrete transferred to sheet asphalt.						
Work done under private contract, 1912			7,143.7	1.353		
Net increase			27,291.3	5.169		

	Lin. ft.	Miles.	Lin. ft.	Miles.	Lin. ft.	Miles.
ASPHALT BLOCK, Laid or Relaid.						
3-inch Block, Walker Avenue, from Morris Park Avenue to Unionport Road	1,383.9	0.262				
3-inch Block, Fox Street, from 165th Street northerly to Intervale Avenue..	465.5	0.088				
3-inch Block, Aqueduct Avenue, from Burnside Avenue to 181st Street	1,834.1	0.347				
3-inch Block, W. 231st Street, from Corlear Avenue to Bailey Avenue	831.0	0.157				
3-inch Block, Morris Avenue, from E. 156th Street to E. 161st Street	1,067.3	0.202				
3-inch Block, Cauldwell Avenue, from Westchester Avenue to E. 161st Street	525.8	0.099				
3-inch Block, Tiffany Street, from So. Boulevard to Lafayette Avenue	808.0	0.153				
3-inch Block, Longwood Avenue, from So. Boulevard to Westchester Avenue center plots	957.3	0.181				
3-inch Block, Bailey Avenue, from Albany Road to Ft. Independence Street	90.0	0.017				
3-inch Block, E. 165th Street, from Union Avenue to Stebbins Avenue	544.2	0.103				
3-inch Block, Longfellow Avenue, from Lafayette Avenue to N. Y., N. H. & H. R. R. R.....	1,767.2	0.335				
3-inch Block, E. 165th Street, from Grant Avenue to Morris Avenue	222.0	0.042				
3-inch Block, Barretto Street, from So. Boulevard to Whitlock Avenue	223.0	0.042				
3-inch Block, E. 170th Street, from Transverse Road	614.0	0.116				
3-inch Block, Bedford Park Boulevard, Transverse Road	2,066.6	0.392				
2-inch Block, Heath Avenue, from Boston Avenue to Ft. Independence Street	1,288.1	0.244				
Total laid			14,688.0	2.780		
ASPHALT BLOCK, Removed or Relaid.						
Boston Road, from Prospect Avenue to So. Boulevard	2,736.6	0.518				
White Plains Road, from 213th to 227th Streets, East Side	584.0	0.111				
Cauldwell Avenue, from Westchester Avenue to E. 161st Street	525.8	0.099				
Jackson Avenue, from 149th Street to Westchester Avenue	1,112.1	0.210				
133rd Street, from Alexander Avenue to Willis Avenue	673.6	0.128				
So. Boulevard, from Barretto Street to Westchester Avenue	238.2	0.049				
Morris Avenue, from E. 156th Street to E. 161st Street	1,067.3	0.202				
Longwood Avenue, from So. Boulevard to Westchester Ave.	957.3	0.181				
Total removed, etc.			7,914.9	1.498		
Net increase			6,773.1	1.282		

IN DETAIL.—Continued.

	Lin. ft.	Miles.	Lin. ft.	Miles.	Lin. ft.	Miles.
SHEET ASPHALT, Laid.						
Transferred from Bituminous Concrete (private contracts of 1912)	7,143.7	1.353				
Clay Avenue, from E. 165th Street to E. 166th Street	459.0	0.087				
White Plain Road, from E. 213th Street to E. 227th Street (rail to E. curb) ..	584.0	0.111				
E. 179th Street, from Park Avenue West to Valentine Avenue	577.9	0.109				
E. 179th Street, from Park Avenue West to Valentine Avenues	577.3	0.109				
E. 183rd Street, from Arthur Avenue to So. Boulevard	46.4	0.009				
E. 173rd Street, from Minford Place to So. Boulevard	220.0	0.042				
Fox Street, from 165th Street nearly to Intervale Avenue	1,508.3	0.286				
Melrose Avenue Viaduct, from E. 163rd Street to Brook Avenue	707.0	0.133				
W. 231st Street, from Corlear Avenue to Bailey Avenue	813.0	0.154				
Bathgate Avenue, from E. 188th Street to Fordham Road	750.8	0.144				
Cauldwell Avenue, from Westchester Avenue to E. 161st Street	1,721.6	0.326				
Longwood Avenue, from So. Boulevard to Westchester Avenue (center plots) ..	444.5	0.084				
Beck Street, from Leggett Avenue to Longwood Avenue	903.4	0.171				
Kelly Street, from 156th Street to Longwood Avenue	539.2	0.102				
E. 156th Street, from Beck Street to Kelly Street	200.0	0.038				
Boston Road, from E. 165th Street to Jefferson Street	3,483.6	0.659				
E. 169th Street, from Boston Road to Franklin Avenue	475.4	0.090				
Jackson Avenue, from E. 149th Street to Westchester Avenue	1,112.1	0.210				
W. 230th Street, from Broadway to Corlear Avenue	1,009.0	0.191				
Summit Avenue, from E. 165th Street to W. 166th Street	497.4	0.094				
E. 180th Street, from Devoc Avenue to Morris Park Avenue	943.9	0.179				
Paile Street, from Aldus Street to Railroad Bridge (P. P.)	776.2	0.147				
Boston Road, from Prospect Avenue to So. Boulevard	2,736.6	0.518				
179th Street, from Park Avenue W. to Valentine Avenue (error in report) ..	691.7	0.131				
Total laid	28,355.1	5.308			28,355.1	5.308
SHEET ASPHALT, Removed or Replaced.						
Boston Road, from E. 165th Street to Jefferson Street and E. 169th Street, from Boston Road to Franklin Avenue			3,959.0	0.749		
Melrose Avenue Viaduct, from E. 163rd Street to Brook Avenue			707.0	0.133		
Cauldwell Avenue, from Westchester Avenue to E. 161st Street			1,721.6	0.326		
Fox Street, from E. 165th Street to Intervale Avenue			1,973.8	0.374		
179th Street, from Park Avenue W. to Valentine Avenue (error in previous report)			691.7	0.131		
Longwood Avenue, from So. Boulevard to Westchester Avenue (plots) ...			444.5	0.084		
Total removed, etc.			9,497.6	1.797	9,497.6	1.797
Net increase					18,857.5	3.571

WORK DONE UNDER CONTRACT.

Title of Work.	Kind of Paving.	Laid		Remarks.
		Sq. Yds.	Lin. Ft.	
Westchester Avenue, from So. Boulevard to Ward Avenue (part)	Granite Block	10,680.0	1,600.0	In progress, laid on Sand.
Tiffany Street, from Edgewater Road to Dock	Granite Block	1,150.7	177.0	Complete, laid on Sand.
River Avenue, from E. 149th Street to 450 feet south of 151st Street	Granite Block	3,240.5	767.5	Complete, laid on Sand.
German Place, from Westchester Avenue to Rac Street	Granite Block	1,230.5	467.2	Complete, laid on Sand.
Burnside Avenue, from Aqueduct Avenue to Sedgwick Avenue	Granite Block	6,806.0	1,317.0	Complete, laid on Sand.
E. 170th Street, from Bristow Street to Wilkins Place	Granite Block	1,498.7	460.9	Complete, laid on Sand.
Cedar Avenue, from Sedgwick Avenue to W. 179th Street	Granite Block	6,802.0	1,605.8	Complete, laid on Sand.
W. 177th Street, from Cedar Avenue to N. Y. & P. R. R.	Granite Block	385.4	86.3	Complete, laid on Sand.
Tremont Avenue, from Third Avenue to Boston Road (part)	Redressed Granite Block	3,000.0	625.0	In progress, relaid on Concrete.
E. 133rd Street, from Alexander to Willis Avenues	Modern Granite Block	4,565.8	673.6	Complete, relaid on Concrete.
Exterior Street, from University Heights Br. to Fordham Road	Modern Granite Block	1,119.3	370.0	Complete, laid on Concrete.
Fordham Road, from Exterior Street to Public Dock	Modern Granite Block	421.7	47.0	Complete, laid on Concrete.
Bailey Avenue, from Albany Road to Ft. Independence Street	Modern Granite Block	1,537.6	443.5	Complete, laid on Concrete.
So. Boulevard, from Barretto Street to Westchester Avenue	Modern Granite Block	1,168.5	169.6	Complete, laid on Concrete.
E. 183rd Street, from Arthur Avenue to So. Boulevard	Modern Granite Block	2,468.8	721.5	Complete, laid on Concrete.
E. 180th Street, from Third Avenue to Bronx Street	Modern Granite Block	4,976.4	1,164.5	Complete, laid on Concrete.
Webster Avenue, from Bedford Park Boulevard to Gun Hill Road (part)	Modern Granite Block	27,210.0	4,295.5	In progress, laid on Concrete.
Webster Avenue, Gun Hill Road to 233rd Street (part)	Modern Granite Block	12,015.0	2,650.0	In progress, laid on Concrete.
E. 167th and E. 169th Streets, from Boston Road to So. Boulevard	Modern Granite Block	.....	.....	In progress. No work done.
E. 156th Street, from Cauldwell Avenue to Dawson Street	Redressed Granite	7,786.4	1,022.0	Complete, laid on Concrete.
Brook Avenue, from E. 150th Street to Third Avenue	Redressed Granite	6,718.9	947.1	Complete, laid on Concrete.
E. 150th Street, from Third Avenue to Melrose Avenue	Redressed Granite	380.3	151.0	Complete, laid on Concrete.
E. 151st Street, from Third Avenue to Melrose Avenue	Redressed Granite	713.9	275.6	Complete, laid on Concrete.
E. 155th Street, from Third Avenue to Elton Avenues	Redressed Granite	438.4	168.2	Complete, laid on Concrete.
Elton Avenue, from Third Avenue to E. 155th Street	Redressed Granite	1,518.0	538.9	Complete, laid on Concrete.
Melrose Avenue Viaduct, from E. 163rd Street to Brook Avenue	Redressed Granite	782.1	170.6	Complete, relaid on Concrete.
E. 179th Street, from Park Avenue to Third Avenue	Redressed Granite	1,415.0	692.8	Complete, laid on Concrete.
Webster Avenue, from E. 178th Street to E. 187th Street	Redressed Granite	21,902.1	3,877.9	Complete, laid on Concrete.
Tremont Avenue, from Webster Avenue to Third Avenue	Redressed Granite	.....	.....	In progress. No work done.
Commonwealth Avenue, from Walker Avenue to Merrill Street	Bituminous Concrete	3,400.5	1,021.2	Complete, laid on Concrete.
Lind Avenue, from Ward Line to Aqueduct Avenue	Bituminous Concrete	1,226.0	435.9	Complete, laid on Concrete.
Aqueduct Avenue, from Lind Avenue to Washington Bridge	Bituminous Concrete	3,143.7	870.8	Complete, laid on Concrete.
Aqueduct Avenue, from Fordham Road to Kingsbridge Road	Bituminous Concrete	10,551.2	2,217.6	Complete, laid on Concrete.
E. 173rd Street, from So. Boulevard to Bryant Avenue	Bituminous Concrete	2,489.4	742.0	Complete, laid on Concrete.
Manida Street, from Lafayette Avenue to Eastern Boulevard	Bituminous Concrete	8,670.3	2,380.6	Complete, laid on Concrete.
Walton Avenue, from 177th Street to Tremont Avenue	Bituminous Concrete	1,720.3	517.9	Complete, laid on Concrete.

WORK DONE UNDER CONTRACT.—Continued.

Title of Work.	Kind of Paving.	Laid		Lin. Ft.	Remarks.
		Sq. Yds.			
W. 201st Street, from Riverdale Avenue to Broadway	Bituminous Concrete	6,038.0	1,751.0	Complete, laid on Concrete.	
Devoe Terrace, from Webb Avenue to W. 190th Street	Bituminous Concrete	2,582.4	972.0	Complete, laid on Concrete.	
St. Lawrence Avenue, from Walker Avenue to Merrill Street	Bituminous Concrete	3,783.3	1,136.6	Complete, laid on Concrete.	
Ogden Avenue, from W. 169th Street to Aqueduct Avenue	Bituminous Concrete	4,206.0	1,551.8	Complete, laid on Concrete.	
202nd Street, from Webster Avenue to N. Y. & H. R. R.	Bituminous Concrete	747.4	229.6	Complete, laid on Concrete.	
Morris Avenue, from E. 167th Street to E. 170th Street	Bituminous Concrete	8,225.5	1,755.0	Complete, laid on Concrete.	
Morris Avenue, from E. 184th Street to Fordham Road	Bituminous Concrete	2,717.2	822.6	Complete, laid on Concrete.	
Findlay Avenue, from E. 165th Street to E. 168th Street	Bituminous Concrete	1,494.7	452.4	Complete, laid on Concrete.	
Hoe Avenue, from E. 173rd Street to Boston Road	Bituminous Concrete	3,718.3	1,098.2	Complete, laid on Concrete.	
Nelson Avenue, from Featherbed Lane to Macombs Road	Bituminous Concrete	4,892.8	1,346.9	Complete, laid on Concrete.	
Vyse Avenue, from E. 173rd Street to E. 177th Street	Bituminous Concrete	7,535.7	2,250.3	Complete, laid on Concrete.	
Garrison Avenue, from Tiffany Street to Hunts Point Road	Bituminous Concrete	4,640.6	985.7	Complete, laid on Concrete.	
Vyse Avenue, from E. 172nd Street to E. 173rd Street	Bituminous Concrete	2,032.7	613.8	Complete, laid on Concrete.	
Brandt Place, from University Avenue to Nelson Avenue	Bituminous Concrete	575.9	221.8	Complete, laid on Concrete.	
W. 174th Street, from Nelson Avenue to Macombs Road	Bituminous Concrete	1,902.4	579.6	Complete, laid on Concrete.	
Kingsbridge Avenue, from W. 230th Street to W. 234th Street	Bituminous Concrete	7,625.0	1,723.7	Complete, laid on Concrete.	
Morris Avenue, from E. 166th Street to E. 167th Street	Bituminous Concrete	3,443.3	1,078.0	Complete, laid on Concrete.	
Boston Road, from White Plains Road to City Line (part)	Bituminous Concrete	13,689.0	7,700.0	In progress, 16-foot roadway.	
Bailey Avenue, from W. 238th Street to Kingsbridge Road	Bituminous Concrete	.....	....	In progress. No work done.	
Clay Avenue, from E. 165th Street to E. 166th Street	Sheet Asphalt	1,529.9	459.0	Complete, laid on Concrete.	
White Plains Road, from E. 213th Street to E. 227th Street	Sheet Asphalt	1,605.0	584.0	Complete, laid on Concrete.	
E. 170th Street, from Park Avenue W. to Valentine Avenue	Sheet Asphalt	1,504.2	577.3	Complete, laid on Concrete.	
E. 173rd Street, from Minford Place to So. Boulevard	Sheet Asphalt	720.7	222.0	Complete, laid on Concrete.	
E. 183rd Street, from Arthur Avenue to So. Boulevard	Sheet Asphalt	49.7	46.4	Complete, laid on Concrete.	
Fox Street, from 165th Street northerly to Intervale Avenue	Sheet Asphalt	5,296.6	1,508.3	Complete, laid on Concrete.	
Melrose Avenue Viaduct, from E. 163rd Street to Brook Avenue	Sheet Asphalt	3,494.0	707.0	Complete, relaid on Concrete.	
W. 231st Street, from Corlear Avenue to Bailey Avenue	Sheet Asphalt	3,411.0	813.0	Complete, laid on Concrete.	
Bathgate Avenue, from E. 188th Street to Fordham Road	Sheet Asphalt	2,506.7	759.8	Complete, laid on Concrete.	
Cauldwell Avenue, from Westchester Avenue to E. 161st Street	Sheet Asphalt	6,275.2	1,721.6	Complete, relaid on Concrete.	
Longwood Avenue, from So. Boulevard to Westchester Avenue (plots)	Sheet Asphalt	731.5	444.6	Complete, laid on Concrete.	
Beck Street, from Leggett Avenue to Longwood Avenue	Sheet Asphalt	3,100.8	903.4	Complete, laid on Concrete.	
Kelly Street, from 156th Street to Longwood Avenue	Sheet Asphalt	1,883.6	539.2	Complete, laid on Concrete.	
156th Street, from Beck Street to Kelly Street	Sheet Asphalt	666.7	200.0	Complete, laid on Concrete.	
Boston Road, from E. 165th Street to Jefferson Street, etc.	Sheet Asphalt	14,841.7	3,483.6	Complete, relaid on Concrete.	
E. 169th Street, from Boston Road to Franklin Avenue	Sheet Asphalt	3,962.8	475.4	Complete, relaid on Concrete.	
Jackson Avenue, from E. 149th Street to Westchester Avenue	Sheet Asphalt	4,468.7	1,112.1	Complete, relaid on Concrete.	

Title of Work.	Kind of Paving.	Laid		Remarks.
		Sq. Yds.	Lin. Ft.	
W. 230th Street, from Broadway to Corlear Avenue	Sheet Asphalt	7,054.0	1,009.0	Complete, laid on Concrete.
Summit Avenue, from E. 165th Street to E. 166th Street	Sheet Asphalt	1,378.8	497.4	Complete, laid on Concrete.
E. 180th Street, from Devoe Avenue to Morris Park Avenue	Sheet Asphalt	4,537.0	943.9	Complete, laid on Concrete.
Faile Street, from Aldus Street to Railroad Bridge (P. P.)	Sheet Asphalt	2,631.1	776.2	Complete, laid on Concrete.
Boston Road, from Prospect Avenue to So. Boulevard (part)	Sheet Asphalt	19,228.2	2,736.6	Complete, laid on Concrete.
Walker Avenue, from Morris Park Avenue to Unionport Road	Asphalt Block	1,503.4	1,383.9	Compl., laid on Conc., 3-in. Blk.
Fox Street, from 165th Street northerly to Intervale Avenue	Asphalt Block	1,551.7	465.5	Compl., laid on Conc., 3-in. Blk.
Melrose Avenue Viaduct, from 163rd Street to Brook Avenue	Asphalt Block	73.8	.....	Compl., relaid on Conc., 3-in. Blk.
Aqueduct Avenue, from Burnside Avenue to 181st Street	Asphalt Block	12,481.8	1,834.1	Compl., laid on Conc., 3-in. Blk.
W. 231st Street, from Corlear to Bailey Avenue	Asphalt Block	3,904.0	831.0	Compl., laid on Conc., 3-in. Blk.
Morris Avenue, from E. 156th Street to 161st Street	Asphalt Block	1,894.5	1,067.3	Compl., relaid on Conc., 3-in. Blk.
Tiffany Street, from So. Boulevard to Lafayette Avenue	Asphalt Block	3797.4	808.0	Compl., laid on Conc., 3-in. Blk.
Cauldwell Avenue, from Westchester Avenue to E. 161st Street	Asphalt Block	1,869.5	525.8	Compl., relaid on Conc., 3-in. Blk.
Longwood Avenue, from So. Boulevard to Westchester Avenue	Asphalt Block	1,568.7	957.3	Compl., laid on Conc., 3-in. Blk.
Bailey Avenue, from Albany Road to Ft. Independence Street	Asphalt Block	480.0	90.0	Compl., laid on Conc., 3-in. Blk.
E. 165th Street, from Union to Stebbins Avenues	Asphalt Block	1,801.0	544.2	Compl., laid on Conc., 3-in. Blk.
Longfellow Avenue, from Lafayette Avenue to N. Y., N. H. & H. R. R.	Asphalt Block	3,892.9	1,767.2	Compl., laid on Conc., 3-in. Blk.
E. 165th Street, from Grant Avenue to Morris Avenue	Asphalt Block	731.9	222.0	Compl., laid on Conc., 3-in. Blk.
Barretto Street, from So. Boulevard to Whitlock Avenue	Asphalt Block	724.1	223.0	Compl., laid on Conc., 3-in. Blk.
E. 170th Street, Transverse Road	Asphalt Block	3,808.4	614.0	Compl., laid on Conc., 3-in. Blk.
Bedford Park Boulevard, Transverse Road	Asphalt Block	8,349.9	2,066.6	Compl., laid on Conc., 3-in. Blk.
Heath Avenue, from Boston Avenue to Ft. Independence Street	Asphalt Block	4,416.0	1,288.1	Compl., laid on Conc., 2-in. Blk.
Sq. Boulevard, from Barretto Street to Westchester Avenue	Wood Block	647.9	88.6	Complete, laid on Concrete.

Total Mileage of Each Kind, December 31, 1913.

Kind.	Sq. Yds.	Miles.
Trap Block	2,373.70	0.077
Granite Block on sand	670,986.09	28.013
Granite Block on concrete, old method.....	123,230.07	5.100
Granite Block on concrete, redressed	208,462.70	7.795
Granite Block, on concrete, modern	110,457.40	4.217
Sheet Asphalt	1,146,461.43	50.520
Block Asphalt (3-inch)	1,325,146.64	59.243
Block Asphalt (2-inch)	24,123.09	1.465
Brick	1,881.50	0.004
Medina Block	3,953.80	0.282
Iron Slag Block	31,807.20	1.545
Bituminous Concrete	217,296.03	11.847
Wood Block	121,791.40	4.376
Total mileage		174.604

In addition to the foregoing mileage, there is about 9.4 miles of uncompleted work (paving) under contract, December 31, 1913.

**Total Yardage and Miles of Streets Paved and Repaved from
1874 to Jan. 1, 1914.**

Kind.	Sq. Yds.	Miles.
Trap Block	349,140.70	16.636
Granite Block (all kinds)	1,683,244.06	65.047
Sheet Asphalt	1,252,303.55	54.356
Block Asphalt	1,410,502.43	62.638
Wood Block	121,841.40	4.376
Brick	40,795.20	1.474
Medina Block	3,953.90	0.282
Iron Slag Block	31,807.20	1.545
Bituminous Concrete	245,225.73	13.200
Total mileage		219.614

**Total Yardage and Miles of Streets and Avenues Flagged with
Bluestone in the Borough of The Bronx.**

	Sq. Yds.	Miles.
To Jan. 1, 1913	1,411,266.2	503.7
Flagged during year	16,920.8	7.2
Total to January 1, 1914	1,428,187.0	510.9

**Total Yardage and Mileage of Streets and Avenues Flagged
with Cement Walks in the Borough of The Bronx.**

	Sq. Yds.	Miles.
To Jan. 1, 1913	10,879.0	4.63
Flagged during year	36,474.4	12.40
Total to January 1, 1914	47,353.4	17.03

CONTRACTS IN FORCE DURING 1913, CHARGEABLE TO REPAVING FUND.

Street.	Limits.	Kind.	Sq. Yds.	Lin. Ft.	Miles.	Amount ch'rg'd during year.
CLAY AVENUE, from E. 165th Street to E. 166th Street		Asphalt	1,520.9	459.0	0.087	\$3,693.04
WHITE PLAINS ROAD, from Gun Hill Road to E. 227th Street		Asphalt	1,605.0	584.0	0.111	7,247.90
MELROSE AVENUE VIADUCT, from 163rd Street to Brook Avenue ...		Asphalt and	3,494.0	707.0	0.133	11,744.41
		Granite Block	782.1	170.6	0.032	
BECK STREET, from Leggett Avenue to Longwood Avenue, etc.		Asphalt	5,056.1	1,642.6	0.311	11,128.55
BOSTON ROAD, E. 165th Street to Jefferson Street, etc.		Asphalt	18,804.5	3,959.0	0.749	35,609.52
JACKSON AVENUE, from E. 149th Street to Westchester Avenue		Asphalt	4,468.7	1,112.1	0.210	6,227.31
SUMMIT AVENUE, from E. 165th Street to E. 166th Street		Asphalt	1,278.8	497.4	0.094	3,061.21
BOSTON ROAD, from Prospect Avenue to So. Boulevard		Asphalt	19,228.2	2,736.6	0.518	11,879.60
CAULDWELL AVENUE, from Westchester Avenue to E. 161st Street ...		Asphalt and	6,275.2	1,721.6	0.326	10,245.73
		Asphalt Block	1,869.5	525.8	0.099	
BOSTON ROAD, from White Plains Road to City Line		Bit. Concrete	13,689.0	7,700.0	1.458	23,510.02
WESTCHESTER AVENUE, from So. Boulevard to Ward Avenue		Gran. on sand	10,680.0	1,000.0	0.303	28,361.61
E. 180TH STREET, from Third Avenue to Bronx Street		Modern Block	4,970.4	1,164.5	0.221	17,258.82
E. 133RD STREET, from Alexander Avenue to Willis Avenue		Modern Block	4,565.8	673.6	0.128	26,620.31
WEBSTER AVENUE, from Bedford Park Boulevard to Gun Hill Road...		Modern Block	27,210.0	4,295.5	0.813	90,435.78
WEBSTER AVENUE, from Gun Hill Road to 233rd Street		Modern Block	12,015.0	2,650.0	0.502	45,624.81
E. 183RD STREET, from Arthur Avenue to So. Boulevard		Asphalt and	49.7	46.4	0.009	11,059.89
		Granite Block	2,468.8	721.5	0.136	
E. 156TH STREET, from Cauldwell Avenue to Dawson Street		Redressed Gran.	7,786.4	1,922.0	0.364	18,492.97
BROOK AVENUE, from E. 156th Street to Third Avenue		Redressed Gran.	6,718.9	947.1	0.179	14,869.23
E. 150TH STREET, from Third Avenue to Melrose Park, etc.		Redressed Gran.	3,050.6	1,133.7	0.215	8,802.75
WEBSTER AVENUE, from E. 178th Street to E. 187th Street		Redressed Gran.	24,902.1	3,877.9	0.734	53,267.48
TREMONT AVENUE, from Third Avenue to Boston Road		Redressed Gran.	3,600.0	625.0	0.118	9,195.30
FOX STREET, from E. 165th Street to Intervale Avenue		Asphalt and	5,290.6	1,508.3	0.286	8,593.83
		Granite Block	1,551.7	465.5	0.088	
MORRIS AVENUE, from E. 156th Street to E. 161st Street		Asphalt Block	1,894.5	1,067.3	0.202	2,890.48
SO. BOULEVARD, from Barretto Street to Westchester Avenue		Granite and	1,168.5	169.6	0.032	6,275.43
		Wood Block	647.9	88.6	0.017	
						\$466,395.98

REGULATING AND GRADING CONTRACTS.

Completed During Year 1913.

	Linear Feet.
Theriot Avenue, from Wood Avenue to Gleason Avenue	1,611.9
Van Cortlandt Avenue, from Sedgwick Avenue to Albany Road	1,201.2
Sedgwick Avenue, from Van Cortlandt Avenue to 430 feet westerly	469.2
Jerome Avenue, from 190th Street to 600 feet north of Van Cortlandt Avenue....	6,762.8
Garfield Street, from Morris Park Avenue to N. Y., N. H. & H. R. R.	1,255.1
E. 212nd Street, from Katonah Avenue to N. L. of City of New York.....	389.1
Cromwell Avenue, from E. 150th Street to Jerome Avenue	5,751.3
W. 230th Street, from Bailey Avenue to Riverdale Avenue	553.0
St. Lawrence Avenue, from West Farms Road to Westchester Avenue	2,492.8
Albany Road, from Van Cortlandt Park South to Fordham Road	9,376.9
Fuller Street, from Seddon Street to Zerega Avenue	581.6
Parker Street, from Westchester Avenue to Lyons Avenue	468.7
E. 183rd Street, from Bainbridge Avenue to Webster Avenue	602.5
Spuyten Duyvil Road, from Johnson Avenue to north side of W. 230th Street....	995.0
E. 223rd Street, from Bronxwood Avenue to Laconia Avenue	1,591.0
E. 224th Street, from Bronxwood Avenue to Laconia Avenue	1,511.0
E. 225th Street, from Bronxwood Avenue to Laconia Avenue	1,632.0
E. 236th Street, from White Plains Road to Barnes Avenue	855.0
W. 235th Street, from Spuyten Duyvil Parkway to Riverdale Avenue	1,429.0
Macy Avenue, from Zerega Avenue to Walker Avenue	1,545.6
E. 198th Street, from Creston Avenue to Jerome Avenue	314.4
Glebe Avenue, from Zerega Avenue to Overing Street	1,236.4
Boston Road, from White Plains Road to N. L. of City	17,943.0
Taylor Avenue, from Gleason Avenue to Westchester Avenue	701.0
W. 233rd Street, from Broadway to Albany Road	520.0
Grand Avenue, from W. 181st Street to W. 184th Street	1,575.3
Leland Avenue, from Walker Avenue to Westchester Avenue	2,850.0
St. Lawrence Avenue, from Randolph Avenue to Westchester Avenue	379.2
Dorsey Street, from Zerega Avenue to Seddon Street	549.9
165th Street, from Grant Avenue to Walton Avenue	1,128.7
W. 172nd Street, from Jerome Avenue to Inwood Avenue	332.5
Randolph Avenue, from St. Lawrence Avenue to Beach Avenue	219.9
Baychester Avenue, from Boston Road to Pelham Bay Park	8,400.0
Albany Road, from Bailey Avenue to Bailey Avenue at 234th Street.....	1,360.0
Rosedale Avenue, from Walker Avenue to Tremont Avenue	1,172.0
Pugsley Avenue, from McGraw Avenue to Tremont Avenue	888.8
Corlear Avenue, from W. 230th Street to W. 240th Street	2,463.0
Glebe Avenue, from Westchester Avenue to Zerega Avenue	1,594.7
Whittier Street, from Seneca Avenue to Lafayette Avenue	675.0
W. 234th Street, from Kingsbridge Avenue to Albany Road	971.0
North Street, from Aqueduct Avenue to Jerome Avenue	594.7
W. 179th Street, from Osborne Place to Aqueduct Avenue	1,098.5
Morris Avenue, from Fordham Road to 190th Street, etc.	1,020.2
McGraw Avenue, from Unionport Road to Beach Avenue	2,842.7
	92,063.1=
	17.43 miles.
Completed to January 1, 1913	272.11
Completed during year 1913	17.43
Completed to January 1, 1914	289.54

MACADAM PAVEMENT—Assessment Work.

Existing January 1, 1914.

Title.	Kind.	Accepted.	Yardage.	Lin. Ft.	Yardage.	Lin. Ft.	Miles.
176th St. from Jerome to Tremont Aves.....	Macadam	2/19/01	9,174.3	2,641.26			
Gun Hill Rd. from Jerome Ave. to Bronx River.....	Macadam	1/18/02	21,189.1	3,935.30			
Mr. Hope Pl. from Jerome to Anthony Aves.....	Telford	11/29/02	7,253.8	2,098.45			
E. 164th St. from Summit to Anderson Aves.....	Telford	10/30/03	2,243.5	824.73			
Summit Ave. from W. 165th to W. 166th Sts.....	Telford	1/ 9/03	1,116.2	451.60			
E. 175th St. from Third Ave. to Southern Blvd.....	Telford	12/ 4/03	11,898.4	3,478.19			
Morris Ave. from E. 176th St. to Tremont Ave.....	Macadam	11/30/03	3,177.6	1,041.81			
Monroe Ave. from Belmont St. to Tremont Ave.....	Macadam	12/ 5/03	6,500.5	2,232.00			
Nelson Ave. from W. 164th St. to Boscobel Ave.....	Telford	8/ 1/06	12,129.0	3,732.00			
*Webster Ave. from Gun Hill Rd. to City Line.....	Tel. & Mac.	3/ 9/06	50,211.9	8,627.20			
Grand Boulevard & Concourse, etc., Law of 1907-8-9....	Macadam	.....	174,566.5	61,918.00			
					299,748.3	80,898.54	16.30

MACADAM REMOVED DURING 1913.

Title.	Kind.	Accepted.	Yardage.	Lin. Ft.	Yardage.	Lin. Ft.	Miles.
Summit Ave. from W. 165th to W. 166th Sts.....	Telford	.....	1,116.2	451.60			
*Webster Ave. from Gun Hill Rd. to 238rd St. (part)..	Tel. & Mac.	.....	12,015.0	2,650.00	13,131.2	3,101.60	0.59
		Total on January 1, 1914.....			286,618.6	77,796.94	14.71

SQUARE YARDS OF PAVEMENT LAID AND RELAI, AND NET IN- CREASE OR DECREASE FROM 1893.

TRAP BLOCK.

Year.	Laid On Jan. 1st.	Laid During Year.	Repaved.	Increase.	Decrease.
1894.....	317,628.2	13,822.7	66,651.2	.....	52,828.5
1895.....	264,799.7	3,502.5	22,000.1	.....	18,497.5
1896.....	246,302.2	12,876.3	2,301.5	10,574.8	.....
1897.....	256,877.0	.....	75,097.9	.....	75,097.9
1898.....	181,779.1	1,821.0	18,035.2	.....	16,214.2
1899.....	105,564.9	.....	6,849.7	.....	6,849.7
1900.....	158,715.2	.....	20,075.4	.....	20,075.4
1901.....	138,659.8	.....	9,320.8	.....	9,320.8
1902.....	129,319.0	.....	488.7	.....	488.7
1903.....	128,830.3	1,330.0	17,251.9	.....	15,921.9
1904.....	112,908.4	.....	9,670.1	.....	9,670.1
1905.....	103,238.3	.....	33,341.1	.....	33,341.1
1906.....	69,897.2	.....	5,843.7	.....	5,843.7
1907.....	64,053.5	.....	.....	.....	.....
1908.....	64,053.5	.....	3,735.2	.....	3,735.2
1909.....	60,318.3	.....	672.0	.....	672.0
1910.....	59,646.3	.....	7,988.1	.....	7,988.1
1911.....	51,658.2	.....	8,445.3 }	.....	.....
			*39,512.9 }	.....	47,958.2
1912.....	3,700.0	.....	.....	.....	.....
*1913.....	3,700.0	.....	1,226.3	.....	1,226.3
1914.....	2,373.7	.....	.....	.....	.....

*The area of Trap Block has been reduced, as it has been found that the Trap Block laid as foundation for asphalt pavements was included in previous figures.

Removed—151st St.; 155th St.; Elton Ave.

GRANITE BLOCK.

Year.	Laid On Jan. 1st.	Laid During Year.	Repaved.	Increase.	Decrease.
1894.....	233,647.7	124,170.0	.....	124,170.0	.....
1895.....	357,817.9	107,805.2	.....	107,805.2	.....
1896.....	465,623.1	172,175.0	712.0	171,363.0	.....
1897.....	636,986.1	135,959.1	47,568.1	88,391.0	.....
1898.....	725,377.1	40,707.4	6,491.6	34,215.8	.....
1899.....	759,592.9	8,947.0	.....	8,947.0	.....
1900.....	768,539.9	11,434.4	22,930.9	.....	11,496.5
1901.....	757,043.4	34,791.7	18,817.3	15,974.4	.....
1902.....	773,017.8	14,284.0	31,942.5	.....	17,658.5
1903.....	755,359.3	116,822.9	75,985.3	40,837.6	.....
1904.....	795,196.9	57,673.2	22,363.4	33,309.8	.....
1905.....	831,506.7	62,235.3	35,670.6	28,564.7	.....
1906.....	858,071.4	19,222.0	12,929.2	6,293.6	.....
1907.....	864,365.0	20,345.2	5,048.2	15,297.0	3,299.4
1908.....	876,362.6	53,578.99	25,504.3	28,074.69	.....
1909.....	904,437.29	61,946.5	56,689.0	5,257.5	.....
1910.....	909,694.79	71,840.8	48,253.0	23,317.8	.....
1911.....	933,012.59	41,382.1	16,521.6	24,660.5	.....
1912.....	957,873.09	164,843.77	100,087.60	64,756.17	.....
*1913.....	1,022,629.26	136,021.4	45,513.8	90,507.6	.....
1914.....	1,113,136.86	.....	.....	.....	.....

*Laid—Westchester Ave.; Tiffany St.; River Ave.; German Pl.; Burnside Ave.; 170th St.; Cedar Ave.; W. 177th St.; Tremont Ave. (part); E. 133rd St.; Exterior St.; Fordham Rd.; Bailey Ave.; Southern Blvd.; 183rd St.; 180th St.; Webster Ave.; Webster Ave.; E. 156th St.; Brook Ave.; E. 150th St.; E. 151st St.; E. 153th St.; Elton Ave.; Melrose Ave. Viaduct; E. 179th St.; Webster Ave.

Removed or Relaid—Melrose Ave. Viaduct; Tremont Ave.; E. 156th St.; E. 150th St.; Elton Ave.; Brook Ave.; Webster Ave.

SHEET ASPHALT.

Year.	Laid On Jan. 1st.	Laid During Year.	Repaved.	Increase.	Decrease.
1896.....	22,000.0	2,430.5	.....	2,430.5	.....
1897.....	24,430.5	128,287.1	.....	128,287.1	.....
1898.....	152,717.6	57,206.6	.....	57,206.6	.....
1899.....	209,924.2	17,210.8	.....	17,210.8	.....
1900.....	227,135.0	76,308.4	1,764.8	74,543.6	.....
1901.....	301,678.6	72,292.6	.....	72,292.6	.....
1902.....	373,971.2	80,328.9	.....	80,328.9	.....
1903.....	454,300.1	192,852.2	780.0	192,072.2	.....
1904.....	646,372.3	97,201.1	.....	97,201.1	.....
1905.....	743,573.4	50,738.5	.....	50,738.5	.....
1906.....	794,311.9	35,654.5	.....	35,654.5	.....
1907.....	829,966.4	50,037.0	26,389.7	23,667.3	.....
1908.....	853,633.7	16,014.9	2,065.3	13,949.6	.....
1909.....	867,583.3	35,554.0	31,222.2	4,331.8	.....
1910.....	871,915.1	19,168.3	.....	19,168.3	.....
1911.....	891,083.4	62,068.2	1,521.1	60,547.1	.....
1912.....	951,630.5	119,136.93	9,221.8	109,915.13	.....
1913.....	1,061,545.63	120,337.8	35,422.0	84,915.8	.....
1914.....	1,146,461.43	.....	.....	.....	.....

*Laid—Clay Ave.; White Plains Ave.; E. 179th St.; E. 173rd St.; E. 183rd St.; Fox St.; Melrose Ave. Viaduct; W. 231st St.; Bathgate Ave.; Cauldwell Ave.; Longwood Ave.; Beck St.; Kelly St.; E. 169th St.; E. 156th St.; Boston Rd.; Jackson Ave.; W. 230th St.; Summit Ave.; E. 180th St.; Faile St.; Boston Rd. (Also contracts included in Bituminous Concrete, report of 1912, done under private permit.)

Removed or Relaid—Boston Rd.; Melrose Ave. Viaduct; Cauldwell Ave.; Fox St.

BLOCK ASPHALT.

Year.	Laid On Jan. 1st.	Laid During Year.	Repaved.	Increase.	Decrease.
1901.....	.....	6,644.7	.....	6,644.7	.....
1902.....	6,644.7	.....	.....	.....	.....
1903.....	6,644.7	97,483.9	.....	97,483.9	.....
1904.....	164,128.6	129,990.8	.....	129,990.8	.....
1905.....	234,119.4	80,515.3	.....	80,515.3	.....
1906.....	314,634.7	79,408.6	.....	79,408.6	.....
1907.....	394,043.3	220,230.16	.....	220,230.16	.....
1908.....	614,273.46	164,877.75	.....	164,877.75	.....
1909.....	779,151.21	239,061.20	.....	239,061.20	.....
1910.....	1,018,212.41	133,693.8	.....	133,693.8	.....
1911.....	1,151,906.21	134,178.4	.....	134,178.4	.....
1912.....	1,286,084.61	69,539.82	23,725.2	45,814.62	.....
*1913.....	1,331,919.23	54,858.0	36,907.5	17,950.5	.....
1914.....	1,349,869.73	.....	.....	.....	.....

*Laid—Walker Ave.; Fox St.; Melrose Ave. Viaduct; Aqueduct Ave.; W. 231st St.; Morris Ave.; Cauldwell Ave.; Tiffany St.; Longwood Ave.; Bailey Ave.; E. 165th St.; Longfellow Ave.; E. 163th St.; Barretto St.; E. 170th St.; Bedford Park Boulevard; Heath Ave.

Removed or Relaid—Boston Rd.; White Plains Rd.; Melrose Ave. Viaduct; Cauldwell Ave.; Jackson Ave.; 133rd St.; Southern Boulevard; Morris Ave.; 161st St. (omitted from previous report).

IRON SLAG BLOCK.

Year.	Laid On Jan. 1st.	Laid During Year.	Repaved.	Increase.	Decrease.
1907.....	.....	5,902.1	.....	5,902.1	.....
1908.....	5,902.1	13,878.2	.....	13,878.2	.....
1909.....	19,780.3	12,026.9	.....	12,026.9	.....
1910.....	31,807.2	.....	.....	.....	.....
1911.....	31,807.2	.....	.....	.....	.....
1912.....	31,807.2	.....	.....	.....	.....
1913.....	31,807.2	.....	.....	.....	.....
1914.....	31,807.2	.....	.....	.....	.....

BRICK PAVEMENT.

Year.	Laid On Jan. 1st.	Laid During Year.	Repaved.	Increase.	Decrease.
1896.....	1,122.7	13,750.0	.....	13,750.0	.....
1897.....	14,872.7	9,678.9	.....	9,678.9	.....
1898.....	24,551.6	10,273.0	.....	10,273.0	.....
1899.....	34,824.6	.....	.....	.....	.....
1900.....	34,824.6	.....	.....	.....	.....
1901.....	34,824.6	5,560.0	.....	5,560.0	.....
1902.....	40,384.6	.....	.....	.....	.....
1903.....	40,384.6	2,032.6	2,032.6	.....	.....
1904.....	40,384.6	389.9	389.9	.....	.....
1905.....	40,384.6	.....	.....	.....	.....
1906.....	40,384.6	.....	.....	.....	.....
1907.....	40,384.6	.....	.....	.....	.....
1908.....	40,384.6	2,560.3	23,907.1	.....	21,346.8
1909.....	19,037.8	.....	3,254.0	.....	3,254.0
1910.....	15,738.8	.....	.....	.....	.....
1911.....	15,738.8	.....	9,502.2	.....	9,502.2
1912.....	6,281.6	.....	.....	.....	.....
*1913.....	6,281.6	.....	4,400.1	.....	4,400.1
1914.....	1,881.5	.....	.....	.....	.....

*Removed—Beck St.; Kelly St.; Clay Ave.; 156th St.

WOOD BLOCK PAVEMENT.

Year.	Laid On Jan. 1st.	Laid During Year.	Repaved.	Increase.	Decrease.
1904.....	.....	8,101.6	.....	8,101.6	.....
1905.....	8,101.6	.....	.....	.....	.....
1906.....	8,101.6	4,521.0	.....	4,521.0	.....
1907.....	12,622.6	56,320.6	.....	56,320.6	.....
1908.....	68,943.2	23,889.8	.....	23,889.8	.....
1909.....	92,883.0	.....	.....	.....	.....
1910.....	92,883.0	.....	.....	.....	.....
1911.....	92,883.0	7,648.3	.....	7,648.3	.....
1912.....	109,481.3	20,662.2	.....	20,662.2	.....
1913.....	121,143.5	647.9	.....	647.9	.....
1914.....	121,791.4	.....	.....	.....	.....

*Laid—Southern Boulevard.

MEDINA BLOCK PAVEMENT.

Year.	Laid On Jan. 1st.	Laid During Year.	Repaved.	Increase.	Decrease.
1906.....	.....	3,953.8	.....	3,953.8	.....
1907.....	3,953.8	.....	.....	.....	.....
1908.....	3,953.8	.....	.....	.....	.....
1909.....	3,953.8	.....	.....	.....	.....
1910.....	3,953.8	.....	.....	.....	.....
1911.....	3,953.8	.....	.....	.....	.....
1912.....	3,953.8	.....	.....	.....	.....
1913.....	3,953.8	.....	.....	.....	.....
1914.....	3,953.8	.....	.....	.....	.....

BITUMINOUS CONCRETE.

Year.	Laid On Jan. 1st.	Laid During Year.	Repaved.	Increase.	Decrease.
1911.....	.....	8,937.9	.....	8,937.9	.....
1912.....	8,937.9	125,847.43	.....	125,847.43	.....
1913.....	134,785.33	110,540.4	28,029.1	82,511.3	.....
1914.....	217,296.63	.....	.....	.....	.....

*Laid—Commonwealth Ave.; Lind Ave.; Aqueduct Avt.; E. 173rd St.; Aqueduct Ave.; Manida St.; Walton Ave.; W. 261st St.; Devos Terrace; St. Lawrence Ave.; Ogden Ave.; 262nd St.; Morris Ave.; Findlay Ave.; Hoe Ave.; Morris Ave.; Nelson Ave.; Vyse Ave.; Garrison Ave.; Vyse Ave.; Brandt Pl.; W. 174th St.; Kingsbridge Ave.; Morris Ave.; Boston Rd.

Removed—(All contracts done under private permits in 1912, classified as bituminous concrete, should have been asphalt, transferred to asphalt to make corrections.)

Year Prior to.	Trap Rock		Granite Block		Brick		Wood Block		Sheet Asphalt		Bituminous Concrete	
	Sq. Yds.	Miles.	Sq. Yds.	Miles.	Sq. Yds.	Miles.	Sq. Yds.	Miles.	Sq. Yds.	Miles.	Sq. Yds.	Miles.
1874	29,150.0	1.0										
1874												
1875	14,085.0	0.49										
1876	45,960.0	1.04										
1877												
1878												
1879												
1880												
1881												
1882												
1883	18,037.0	0.58										
1884	25,105.0	1.21										
1885	20,486.3	0.86										
1886			833.3	0.06								
1887	4,373.0	0.13										
1888	14,385.0	0.40	10,575.0	0.27								
1889	15,203.9	0.79	30,860.0	1.39								
1890	41,629.4	2.39	8,210.0	0.30								
1891	35,125.0	2.25	64,376.0	1.74								
1892	21,437.7	1.34	63,904.5	2.53								
1893	32,640.9	2.04	54,889.9	2.79								
1894	13,822.7	0.89	124,170.2	5.53								
1895	3,502.5	0.26	107,805.2	3.73					22,000.0	0.72		
1896	12,876.3	0.80	172,075.0	6.77	13,750.0	0.57			2,430.52	0.10		
1897			135,959.1	5.87	9,678.0	0.22			128,287.1	4.55		
1898	1,321.0	0.166	34,215.8	0.884	10,273.0	0.285			57,266.6	1.458		
1899			8,947.0	0.178					17,210.8	0.90		
1900			11,434.4	0.56					74,543.6	3.373		
1901			34,791.7	1.568	5,560.0	0.316			72,292.6	2.995		
1902			14,284.0	0.821					80,328.9	3.44		
1903			116,822.9	4.441					192,072.2	8.665		
1904			57,673.2	2.197			8,101.6	0.46	97,201.1	4.018		
1905			62,235.3	1.829					50,738.5	1.999		
1906			19,222.8	0.711			4,521.0	0.125	35,654.5	1.592		
1907			20,345.2	0.831			56,320.6	1.733	50,057.0	1.956		
1908			53,578.99	2.274	1,533.3	0.083	23,889.8	1.079	16,014.9	1.702		
1909			61,946.5	2.408					35,554.0	1.894		
1910			71,840.8	2.945					19,168.3	0.949		
1911			41,382.1	1.744			7,648.3	0.229	62,068.2	3.113	8,937.9	0.485
1912			164,843.77	5.613			20,662.2	0.733	119,136.93	5.564	125,847.43	6.193
1913			136,021.4	5.013			647.9	0.017	120,337.8	5.368	110,540.4	6.522

Year prior to.	Block Asphalt		Medina Block		Iron Slag Block		Total Paved Miles Each Year	Miles at End of Year.
	Sq. Yds.	Miles.	Sq. Yds.	Miles.	Sq. Yds.	Miles.		
1874	.....	....	.....	....	.....	....	1.0	1.0
1874	.....	....	.....	....	.....	....	.....	1.0
1875	.....	....	.....	....	.....	....	0.49	1.49
1876	.....	....	.....	....	.....	....	1.04	2.53
1877	.....	....	.....	....	.....	....	.....	2.53
1878	.....	....	.....	....	.....	....	.....	2.53
1879	.....	....	.....	....	.....	....	.....	2.53
1880	.....	....	.....	....	.....	....	.....	2.53
1881	.....	....	.....	....	.....	....	.....	2.53
1882	.....	....	.....	....	.....	....	.....	2.53
1883	.....	....	.....	....	.....	....	0.58	3.11
1884	.....	....	.....	....	.....	....	1.21	4.32
1885	.....	....	.....	....	.....	....	0.86	5.18
1886	.....	....	.....	....	.....	....	0.06	5.24
1887	.....	....	.....	....	.....	....	0.13	5.37
1888	.....	....	.....	....	.....	....	0.67	6.04
1889	.....	....	.....	....	.....	....	2.18	8.22
1890	.....	....	.....	....	.....	....	2.69	10.91
1891	.....	....	.....	....	.....	....	3.99	14.90
1892	.....	....	.....	....	.....	....	3.92	18.82
1893	.....	....	.....	....	.....	....	4.83	23.65
1894	.....	....	.....	....	.....	....	6.42	27.82
1895	.....	....	.....	....	.....	....	4.71	31.81
1896	.....	....	.....	....	.....	....	8.24	40.03
1897	.....	....	.....	....	.....	....	10.64	46.30
1898	.....	....	.....	....	.....	....	2.793	50.627
1899	.....	....	.....	....	.....	....	1.078	51.316
1900	.....	....	.....	....	.....	....	3.933	53.195
1901	.....	....	.....	....	.....	....	4.879	57.097
1902	.....	....	.....	....	.....	....	4.261	59.718
1903	97,483.9	4.197	.....	....	.....	....	17.303	71.461
1904	129,990.8	5.210	.....	....	.....	....	11.885	81.876
1905	80,515.3	3.695	.....	....	.....	....	7.523	86.219
1906	79,408.6	3.023	3,953.8	0.282	.....	....	5.733	90.980
1907	220,230.16	9.880	.....	....	5,902.1	0.251	14.651	104.549
1908	171,522.45	6.963	.....	....	13,878.2	0.628	12.729	114.250
1909	239,061.20	9.961	.....	....	12,028.9	0.666	14.090	125.053
1910	133,693.80	6.062	.....	....	.....	....	9.956	132.585
1911	134,178.4	7.252	.....	....	.....	....	12.823	143.998
1912	69,559.82	3.675	.....	....	.....	....	21.778	163.592
1913	54,858.0	2.780	.....	....	.....	....	19.700	174.604

TOTAL MILEAGE OF PAVEMENT EXISTING AT END OF EACH YEAR, 1902 TO 1913 INCLUSIVE

<u>YEAR</u>	<u>MILES</u>
1902	59.7
1903	71.5
1904	81.9
1905	86.2
1906	91.0
1907	104.5
1908	114.3
1909	125.1
1910	132.6
1911	144.0
1912	161.6
1913	174.6

AVERAGE PRICES BASED ON PRICES OF SUCCESSFUL BIDDERS.

Kind.	1909		1910		1911		1912		1913	
	No. of Bids.	Aver. Price.	No. of Bids.	Aver. Price.	No. of Bids.	Aver. Price.	No. of Bids.	Aver. Price.	No. of Bids.	Aver. Price.
Earth Excavation, cu. yds.	34	\$0.46	22	\$0.48	28	\$0.47	20	\$0.46	28	\$0.43
Rock Excavation, cu. yds.	32	1.35	20	1.06	25	1.33	18	1.30	29	1.40
Excavation of all kinds, cu. yds.	8	.64	5	.28	14	.65	14	.50	15	.61
Filling, cu. yds.	41	.15	25	.15	39	.14	33	.15	42	.12
New Curb, lin. ft.	69	.83	67	.82	81	.82	79	.90	72	.83
Old Curb, lin. ft.	31	.31	48	.32	56	.32	49	.35	42	.28
Old Curb adjusted, lin. ft. ....	..	....	..	....	7	.07	20	.12	14	.11
Granite Curb, lin. ft. ....	..	....	1	.50	3	1.37	5	1.71	5	1.26
Old Granite Curb, lin. ft. ....	..	....	..	....	..	....	1	.75	..	....
Cement Curb, lin. ft. ....	..	....	..	....	..	....	2	.60	....	....
New Flagging, sq. ft.	42	.24	27	.23	34	.25	16	.26	15	.24
Old Flagging, sq. ft.	11	.03	4	.02	15	.05	8	.04	9	.04
Cement Flagging, sq. ft.	1	.19	1	.14	10	.18	30	.19	36	.17
New Bluestone Bridgestone, sq. ft.	35	.47	26	.47	44	.51	31	.43	38	.50
Old Bluestone Bridgestone, sq. ft. ..	2	.13	7	.11	11	.11	11	.10	16	.12
New Granite Bridgestone, sq. ft. ....	..	....	..	....	..	....	2	.77	8	.70
Sheet Asphalt, sq. yds.	8	1.27	14	1.09	16	1.17	19	1.57	14	1.25
Block Asphalt, 3-in., sq. yds.	3	1.99	24	1.77	27	1.74	18	1.70	9	1.94
Block Asphalt, 2-in., sq. yds. ....	..	....	..	....	..	....	..	....	..	....
New Granite Block, sq. yds.	6	2.86	7	2.25	9	3.03	*4	2.76	*5	3.03
Modern Granite Block, sq. yds. ....	..	....	..	....	1	3.07	7	3.73	3	3.45
Granite Block, redressed, sq. yds. ..	2	1.34	1	1.05	1	1.19	2	1.18	9	1.33
Granite Block, relaid, sq. yds. ....	..	....	..	....	..	....	1	.50	..	....
Wood Block, sq. yds. ....	..	....	1	2.48	6	2.75	2	2.90	..	....
Bituminous Concrete, sq. yds. ....	..	....	..	....	7	.89	21	1.23	17	1.06

* Sand.

AVERAGE PRICES BASED ON PRICES OF SUCCESSFUL BIDDERS—Continued.

Kind.	1909		1910		1911		1912		1913	
	No. of Bids.	Aver. Price.	No. of Bids.	Aver. Price.	No. of Bids.	Aver. Price.	No. of Bids.	Aver. Price.	No. of Bids.	Aver. Price.
Macadam, sq. yds. ....	..	....	2	1.25	2	1.15	1	.70	..	....
Paved Gutters, sq. yds. ....	..	....	..	....	2	1.50	1	1.00	..	....
Concrete, cu. yds.	29	5.55	44	5.38	53	5.32	64	5.50	..	....
Concrete, Class A, cu. yds.	2	8.00	..	....	6	10.17	3	7.00	1	9.00
Concrete, Class B, cu. yds.	2	6.75	..	....	8	5.44	5	4.59	52	5.14
Cinder Concrete, cu. yds. ....	..	....	..	....	1	5.20	1	2.00	..	....
Cinder Filling, cu. yds. ....	..	....	..	....	1	.60	1	.10	..	....
Dry Rubble Masonry, cu. yds.	34	1.69	22	1.47	32	1.76	30	1.55	33	1.69
Masonry in Mortar, cu. yds.	8	3.97	3	3.17	10	3.45	3	4.96	7	4.69
Broken Range Ashlar Mas., cu. yds.	1	9.00	..	....	..	....	3	13.00	4	9.85
Brick Masonry, cu. yds. ....	..	....	..	....	3	13.34	1	10.00	2	11.25
Top Soil, cu. yds.	1	1.50	..	....	..	....	..	....	2	.88
Piles, lin. ft.	2	.37	..	....	3	.33	..	....	..	....
Lumber, B. M., feet	11	22.36	7	13.00	22	29.91	12	20.00	12	20.58
Iron and Steel, pounds	1	.05	2	.045	1	.032	2	.04	1	.03
Steel Rods, pounds	1	.05	2	.045	2	.045	..	....	..	....
Vitrified Pipe, 6-in. Diam., lin. ft....	1	1.50	..	....	..	....	..	....	13	1.50
Vitrified Pipe, 8-in. Diam., lin. ft....	1	.75	..	....	..	....	..	....	2	.63
Vitrified Pipe, 10-in. Diam., lin. ft. ....	..	....	..	....	1	1.50	..	....	..	....
Vitrified Pipe, 12-in. Diam., lin. ft.	16	.80	16	.62	28	.83	24	.55	25	.84
Vitrified Pipe, 15-in. Diam., lin. ft.	3	1.97	2	1.25	5	2.20	1	1.00	..	....
Vitrified Pipe, 18-in. Diam., lin. ft.	3	1.33	1	1.00	2	3.00	1	3.00	..	....
Vitrified Pipe, 20-in. Diam., lin. ft.	2	1.37	..	....	..	....	..	....	..	....
Vitrified Pipe, 24-in. Diam., lin. ft.	1	1.90	1	2.50	1	2.50	..	....	..	....
Vitrified Pipe, 30-in. Diam., lin. ft. ....	..	....	..	....	1	6.00	..	....	..	....
Vitrified Pipe, 4-in. Diam., lin. ft....	..	....	..	....	..	....	..	....	1	.25
New Iron Railing, lin. ft.	1	1.00	..	....	1	4.00	2	2.25	4	1.41

New Iron Picket Fence, lin. ft.....	..	....	..	....	..	....	2	2.38	1	2.25
Old Iron Picket Fence, lin. ft.....	..	....	..	....	..	....	1	.60	..	....
Standard Water Pipe, 12-in., lin. ft. ..	..	....	..	....	1	2.00	..	....	..	....
Standard Water Pipe, 16-in., lin. ft. ..	..	....	..	....	..	....	..	....	..	....
Standard Water Pipe, 20-in., lin. ft. ..	..	....	..	....	1	3.50	..	....	..	....
Cast Iron Gutters, lin. ft. ....	..	....	..	....	..	....	2	1.38	1	1.00
Manhole, each	3	51.67	..	....	3	60.00	4	35.00	1	150.00
Waterproofing, sq. ft. ....	..	....	..	....	2	.06	1	.07	..	....
Inlets, Type C, each .....	..	....	..	....	..	....	..	....	1	75.00
Woven Wire Fabric, sq. ft. ....	..	....	..	....	..	....	1	.07	..	....
Cast Iron Inlets, each .....	..	....	..	....	..	....	..	....	2	70.00
Inlets, Type A, each	3	48.33	3	46.67	4	55.00	1	75.00	..	....
Inlets, Type B, each	3	38.33	2	55.00	1	15.00	4	47.50	3	45.00
Railing, Type A, lin. ft. ....	..	....	..	....	1	5.00	1	5.00	..	....
Railing, Type B, lin. ft. ....	..	....	..	....	1	2.50	1	2.00	..	....
Guard Rail, lin. ft.	33	.19	22	.15	30	.21	26	.18	32	.24
New Bluestone Steps, cu. ft. ....	..	....	..	....	..	....	3	2.91	4	3.52
Granite Coping, Newels, etc., cu. ft... ..	..	....	..	....	..	....	3	3.08	2	3.42
Sewer Manhole Heads, each .....	..	....	..	....	1	14.00	..	....	..	....
Receiving Basins, built or rebuilt, each	3	133.33	3	196.67	3	127.50	4	75.00	6	84.00
Parging Rails, lin. ft. ....	..	....	..	....	..	....	..	....	2	.05
Cut Granite, cu. ft. ....	..	....	..	....	..	....	..	....	1	8.00
Iron Conduit, 2-in., lin. ft. ....	..	....	..	....	..	....	..	....	1	.50
Iron Conduit, 3-in., lin. ft. ....	..	....	..	....	..	....	..	....	1	.50
Iron Conduit, 4-in., lin. ft. ....	..	....	..	....	..	....	..	....	1	.50
Cast Iron Pipe, 24-in., lin. ft. ....	..	....	..	....	..	....	..	....	1	6.00
Masonry Inlets, each .....	..	....	..	....	..	....	..	....	1	10.00

AVERAGE PRICES BASED ON PRICES OF SUCCESSFUL BIDDERS.—Continued.

Kind.	1909		1910		1911		1912		1913	
	No. of Bids.	Aver. Price.	No. of Bids.	Aver. Price.	No. of Bids.	Aver. Price.	No. of Bids.	Aver. Price.	No. of Bids.	Aver. Price.
Cast Iron Lamp Posts, each	1	30.00
Bronze Lamps, each	1	30.00
Lamp Posts and Lamps, each	2	30.00
Sodding, sq. yd.	3	.15
Double Road Boxes, each	1	20.00
Limestone Coping, lin. ft.	1	1.50
Limestone Belt Course, lin. ft.	1	4.00
Limestone Balustrade, lin. ft.	1	7.20

SCHEDULE "A".

Relative to Construction.

SUMMARY OF CONTRACTS.

Contracts in Force, January 1, 1913.

Reg. Grad., etc.	33
Pav., etc.	24
Bridges and Viaducts	3
Miscellaneous	4
<hr/>	
Total	64

Contracts Executed During Year Ending 1913.

Reg. Grad., etc.	36
Pav., etc.	51
Bridges and Viaducts ....	..
Miscellaneous	12
<hr/>	
Total	99

Contracts Completed During Year Ending 1913.

Reg. Grad., etc.	44
Pav., etc.	*66
Bridges and Viaducts	2
Miscellaneous	13
<hr/>	
Total	125

* Including one contract declared abandoned.

Contracts in Force, December 31, 1913.

Reg. Grad., etc.	25
Paving, etc.	9
Bridges and Viaducts	1
Miscellaneous	3
<hr/>	
Total	38

During the year, there were 240 reports made to the Local Board, representing an approximate value of \$3,700,000, and 57 miles.

The estimates prepared for letting were 125, representing an estimated value of \$3,150,000 and an approximate length of 48 miles.

In the cement laboratory, there were 7,765 briquettes made and 7,765 briquettes broken, representing 226,507 bags of cement.

SCHEDULE "B".

Relative to Field and Office Work.

Partial Payments made	229
Payments on Acceptance, Final Payments, and Payments on Retained Amounts made	173
Preliminary Estimates, made and forwarded	281
Special Reports made	482
Working Plans, completed	157
Detail Plans, completed	13
Specifications, made up	2
Specifications, checked	37
Tracings made	43
Proofs read	3
Studies	103
Plans checked	46
Profiles made	8
Sketches made, showing Drainage Conditions	8
Assessment Lists checked	72
Inspector's Payrolls, in duplicate, made and forwarded .....	..
Supplementary Payrolls, in duplicate, made and forwarded .....	..
Special Payrolls, in duplicate, made and forwarded .....	..
Engineer's Payrolls, in duplicate, made and forwarded .....	..
Record Plans, completed	23

In addition to the above, there have been a great many cross-sections plotted and figured and general office work done.

During the year ending December 31, 1913, about 4,000 communications, also work for specifications have been forwarded, relating to this Bureau.

The contracts in force, December 31, 1913, represent a length of about 22 miles of uncompleted work of all kinds, in addition to the lengths shown as completed during the year.

SCHEDULE "A."

Relative to Construction.

GENERAL SUMMARY OF QUANTITIES AND CLASSES OF WORK.

170,057.6	cu. yds.	Earth Excavation.
103,866.9	cu. yds.	Rock Excavation.
4,423.2	cu. yds.	Excavation (unclassified).
656,844.9	cu. yds.	Filling.
134,081.84	lin. ft.	New Bluestone Curb.
70,038.2	lin. ft.	Old Bluestone Curb.
4,048.3	lin. ft.	Granite Curb.
152,287.1	sq. ft.	New Bluestone Flagging.
36,316.0	sq. ft.	Old Bluestone Flagging.
328,269.96	sq. ft.	Cement Flagging.
74,734.6	sq. ft.	New Bridgestone.
10,046.0	sq. ft.	Old Bridgestone.

28,124.5	cu. yds.	Dry Rubble Masonry.
283.3	cu. yds.	Masonry in Mortar.
58.0	cu. yds.	Random Ashlar Masonry.
200.4	cu. yds.	Brick Masonry.
2,535.0	cu. yds.	Concrete, Class A.
54,087.11	cu. yds.	Concrete, Class B.
55,482.5	sq. yds.	New Granite Block Pavement laid on concrete.
48,655.1	sq. yds.	Granite Block Pavement, redressed and relaid on concrete.
31,883.8	sq. yds.	New Granite Block, laid on sand.
120,337.8	sq. yds.	Sheet Asphalt.
54,858.0	sq. yds.	Asphalt Block.
647.9	sq. yds.	Wood Block.
42.1	sq. yds.	Macadam.
110,540.4	sq. yds.	Bituminous Pavement.
7,085.8	lin. ft.	Railroad Construction, supervised.
5,345.3	lin. ft.	Vitrified Drain Pipe.
64,637.8	ft. B. M.	Lumber.
55,843.4	lin. ft.	Fence or Guard Rail.
4,897.0	lin. ft.	Piles.
50.0	lin. ft.	Balustrade.
107.6	lin. ft.	Gas Pipe Railing.
40.4	lin. ft.	Standard Water Pipe.
295.3	cu. ft.	Bridgestone and Granite Steps.
1,214.3	cu. ft.	Granite Coping, Newels, etc.
1,520.1	lin. ft.	New Iron Railing.
347,344.4	pounds	Iron and Steel.
120.2	sq. yds.	Paved Gutters.
20,275.9	sq. ft.	Waterproofing.
1,726.4	sq. ft.	Woven Wire Fabric.
2,762.0	sq. yds.	Sodding.
2		Masonry Inlets.
5		Receiving Basins, built or rebuilt.
11		Catch Basins, built or rebuilt.
24		Manholes, built or rebuilt.
2		Inlets, Type A.
6		Inlets, Type B.
10		Lamp Posts or Lamps.
71	sq. yds.	Face Concrete.
45	lin. ft.	Cornice.
60	cu. yds.	Reinforced Concrete.
57.3	cu. yds.	Cinder Concrete.
2		Maintenance of Traffic.
1		Boulder.
18		Spurs.
1,560.6	sq. yds.	Asphalt Sidewalk.
219.7	lin. ft.	Cement Curb.
15.0	cu. yds.	Cinder Filling.
28,298.92	lin. ft.	Curb, adjusted.
13.6	lin. ft.	Cast Iron Gutters.
200.0	lin. ft.	Iron Conduit, 3-inch.
4,400.1	sq. yds.	Brick Pavement, removed.
1,326.3	sq. yds.	Trap Block, removed.
782.1	sq. yds.	Old Granite Block on concrete removed.
44,731.7	sq. yds.	Granite Block on sand, removed.

28,029.1 sq. yds. Bituminous Concrete, deducted, due to previous error.
 37,500.2 sq. yds. Macadam removed.
 1,089.5 cu. yds. Cement Concrete.
 1,900.0 lin. ft. Box Drain removed.
 8,850.8 sq. ft. Granite Bridgestone.
 18.0 cu. yds. Broken Range Ashlar Masonry.
 200.0 lin. ft. Iron Conduit, 2-inch.
 35.0 lin. ft. Iron Conduit, 4-inch.
 35,422.0 sq. yds. Sheet Asphalt removed.
 36,907.5 sq. yds. Asphalt Block removed.
 1 Maintenance Water Supply Service.
 3 Lowering Iron Covers of Shaft.
 1 Double Road Box.
 68.0 cu. yds. Top Soil.
 13,513.0 lin. ft. Parging.

SCHEDULE "B".

Field Work, Surveys and Measurements.

CONSTRUCTION.

Grade Stakes Lin. Ft.	Wall Stakes Lin. Ft.	Curb Stakes Lin. Ft.	Cross Sections Lin. Ft.	Bench Marks Length of Runs	Examina- tions Number	Number of Works
355,667	19,803	320,392	99,935	212,851	1,322	163

PRELIMINARY.

Centre Line Lin. Ft.	Cross Sections Lin. Ft.	Bench Levels Lin. Ft.	Examinations Number	No. of Works
194,942.8	162,739	165,052	240	122

SCHEDULE "B"

Relative to Field and Office Work.

Field Work No. of Borings	Boring Examinations Lin. Ft. of Borings
31,703	70,120

OFFICE OF THE PRESIDENT OF THE BOROUGH OF THE BRONX.

Report of the Operations of the Bureau of Highways Borough of The Bronx, During the Year Ending December 31st, 1913.

SCHEDULE "A."

Financial Statement of Contracts, in Force During Year Ending December 31, 1913, on Which Payments Have Been Certified.
Amount of 70 Per cent. Payments.

Title of Contracts.	Date of Execution.	Estimated Cost of Work.	Total Amount Earned.	Total Amount Retained.	Total Amount Certified.	Amount Certified During Year.
Regulating, Grading, etc.						
STORROW ST.—Public Pl. at 177th St. to Unionport Rd....	6/27/13	\$13,747.91	\$13,105.20	\$1,965.78	\$11,139.42	\$11,139.42
GRAY ST.—Tremont Ave. to Unionport Rd.	6/23/13	14,958.10	13,347.40	2,002.11	11,345.29	11,345.29
E. 222ND ST.—Bronxwood to Arnow Aves.	6/ 5/13	101,704.00	23,550.00	3,532.50	20,017.50	20,017.50
VAN NEST AVE.—West Farms Rd. to Bear Swamp Rd.	6/ 5/13	36,508.96	20,894.93	3,134.24	17,760.71	17,760.71
ZEREGA AVE.—Ludlow to Westchester Aves.	9/17/12	32,643.50	32,118.90	4,817.84	27,301.06	27,301.06
W. 172ND ST.—Aqueduct Ave. to Jessup Ave.	6/ 3/13	15,148.80	15,245.70	2,286.86	12,958.84	12,958.84
LUDLOW AVE.—White Plains Rd. to Tremont Ave.	12/21/11	68,213.50	47,976.40	14,392.92	33,583.48	26,648.58
TAYLOR AVE.—Westchester to Wood Aves.	8/20/13	5,549.75	3,252.25	487.84	2,764.41	2,764.41
BRONX BOULEVARD—Burke Ave. to Gun Hill Rd.	7/ 6/11	57,961.05	28,707.50	11,612.25	27,095.25	12,550.65
WHITE PLAINS RD.—Old Unionport Rd. to Thwaites Pl....	9/ 4/12	58,487.60	40,800.00	6,120.00	34,680.00	34,680.00
FIELDSTON RD.—Moshulu Ave. to 303 ft. N. of W. 250th St.	8/14/13	53,070.00	16,885.00	2,532.75	14,352.25	14,352.25
E. 174TH ST.—So. Boulevard to Boone Ave.	8/ 7/13	6,838.00	3,908.80	599.82	3,398.98	3,398.98
BEACH AVE.—Bronx River Ave. to Gleason Ave., etc.	4/ 9/13	79,995.40	33,290.00	4,993.50	28,296.50	28,296.50
BEACH AVE.—Gleason to Walker Aves.	7/17/13	27,465.00	6,470.00	970.50	5,499.50	5,499.50
NEWTON AVE.—W. 253rd to W. 260th Sts.	8/13/13	31,140.00	4,040.00	606.00	3,434.00	3,434.00
W. 234TH ST.—Kingsbridge Ave. to Tibbett Ave.	12/ 4/13	10,813.50	3,393.00	508.95	2,884.05	2,884.05
PLIMPTON AVE.—Roscofel Ave. to Featherbed La.	11/23/11	10,556.80	2,206.00	661.80	1,544.20	1,544.20
HUNTS POINT RD.—So. Boulevard to East River	3/27/06	67,531.60	50,380.00	15,111.00	35,269.00	.....
TREMONT AVE.—Ludlow Ave. to Ft. Schuyler Rd.	4/29/12	55,441.00	4,365.00	654.75	3,710.25	3,710.25
Regulating, Grading and Steps.						
E. 187TH ST.—Valentine to Marion Aves.	6/27/13	8,207.50	3,902.00	585.30	3,316.70	3,316.70
Transverse Road At						
E. 174TH ST. in connection with Grand Boul'd and Conc....	11/ 1/11	102,761.00	86,373.10	8,637.31	77,735.79	30,145.14
Repaving Bituminous Concrete.						
BOSTON RD.—White Plains Rd. to City Line	10/ 2/13	64,366.25	27,658.85	4,148.83	23,510.02	23,510.02
Repaving Sheet Asphalt.						
BOSTON RD.—Prospect Ave. to So. Boulevard	6/20/13	25,274.00	13,076.00	2,098.40	11,879.60	11,879.60
Repaving Granite Blocks.						
WEBSTER AVE.—Bedford Pk. Boul. to Gun Hill Rd.	5/24/12	141,303.90	127,973.60	12,797.36	115,176.24	90,435.78
WESTCHESTER AVE.—So. Boulevard to Ward Ave.	6/ 4/13	82,546.50	33,366.60	5,094.99	28,361.61	28,361.61
WEBSTER AVE.—Gun Hill Rd. to 233rd St.	6/23/13	155,321.75	53,676.25	8,051.44	45,624.81	45,624.81
TREMONT AVE.—Third Ave. to Boston Rd.	6/25/13	67,812.00	10,818.00	1,622.70	9,195.30	9,195.30
Total Partial Payments		\$1,896,056.77	\$731,770.50	\$119,938.74	\$611,831.76	\$482,755.16

CONTRACTS IN FORCE—NO WORK DONE.

Regulating, Grading, Etc.		
Title of Contracts.	Date of Execution.	Estimated Cost of Work.
E. 190TH ST.—Jerome to Creston Aves.....	12/ 4/13	\$2,989.00
FRISBY AVE.—Walker Ave. to Zerega Ave.....	12/ 4/13	6,680.90
VIRGINIA AVE.—Westchester Ave. to Ludlow Ave.....	12/ 5/13	21,118.00
UNIONPORT RD.—Morris Park Ave. to Walker Ave.....	8/22/13	10,877.00
PARK ST.—E. 149th St. to Westchester Ave.....	11/12/13	30,807.00
Paving, Bituminous Concrete.		
BAILEY AVE.—W. 238th St. to Kingsbridge Rd.....	10/10/13	44,185.12
Paving, Granite Block.		
E. 167TH & E. 169TH STS.—Boston Rd. to Southern Blvd..	7/ 2/13	20,883.60
TREMONT AVE.—Webster Ave. to Third Ave.....	12/ 9/13	18,388.25
Miscellaneous.		
Guard Rail, S. E. Cor. 178TH ST. & Prospect Ave.....	12/15/13	88.20
Guard Rail, E. 205TH ST., Etc.....	8/20/13	27.00
Catch Basin, PALISADE PL., 100 feet East of Sedgwick Ave...	12/30/13	75.00
Total estimated cost		\$156,128.07

PAYMENTS ON ACCEPTANCE, FINAL AND RETAINED AMOUNTS.

Title of Contracts.	Date of Execution.	Date of Completion.	Estimated Cost of Whole Work.	Actual Cost of Whole Work.	Approximate Variation between Estimated and Actual Cost of Whole Work Shown in Percentage.	Total Amount Retained as Security for Repairs.	Total Amount Certified.	Total Amount Certified During Year.	Remarks.
Regulating, Grading, etc. PAYMENTS ON ACCEPTANCE.									
VAN CORTLANDT AVE.—Sedgwick Ave. to Albany Rd.	7/12/11	1/15/13	\$13,442.80	†\$14,126.35	+ 5.08	.....	\$14,126.35	\$4,117.47	\$390 chgd. overtime Complete.
THERIOT AVE.—Wood to Gleason Aves.	2/ 8/12	1/ 8/13	15,708.00	15,681.47	— 0.17	.....	15,681.47	6,072.57	Complete.
JEROME AVE.—190th St. to Van Cortlandt Ave.	10/25/10	1/24/13	55,344.00	58,207.86	+ 5.17	.....	58,207.86	18,444.71	Complete.
GARFIELD ST.—Morris Pk. Ave. to N. Y., N. H. & H. R. R.	12/27/11	2/ 1/13	11,281.40	9,221.29	—18.25	.....	9,221.29	3,775.29	Complete.
SEDGWICK AVE.—Van Cortlandt Ave. to 430 feet northerly	11/ 8/11	1/21/13	2,422.20	†2,041.57	—15.68	.....	2,041.57	2,041.57	Complete, \$247.50 chg. overtime.
E. 242ND ST.—Katonah Ave. to City Line.	11/19/12	4/ 9/13	2,110.00	2,076.96	— 1.56	.....	2,076.96	2,076.96	Complete.
W. 230TH ST.—Bailey Ave. to Riverdale Ave.	9/ 5/12	5/ 6/13	9,954.50	9,702.05	— 2.54	.....	9,702.05	6,297.80	Complete.*
Compl. ST. LAWRENCE AVE.—West Farms Rd. to Westchester Ave.	2/20/13	5/ 9/13	4,781.00	4,639.03	— 2.97	.....	4,639.03	4,639.03	Complete.
ALBANY RD.—Van Cortlandt Pk. So. to Bailey Ave., etc.	1/25/11	5/10/13	157,976.00	159,148.51	+ 0.74	.....	159,148.51	57,781.51	Complete.*
PARKER ST.—Westchester Ave. to Lyon Ave.	12/ 4/12	5/23/13	2,650.50	2,351.79	—11.28	.....	2,351.79	2,351.79	Complete.
E. 193RD ST.—Bainbridge Ave. to Webster Ave.	1/13/13	6/ 5/13	1,492.50	1,476.32	— 1.07	.....	1,476.32	1,476.32	Complete.
SPUYTEN DUYVIL RD.—Johnson Ave. to W. 230th St.	2/13/13	6/ 9/13	6,968.50	7,412.48	+ 6.07	.....	7,412.48	7,412.48	Complete.*
FULLER ST.—Seddon St. to Zerega Ave.	9/ 9/12	5/23/13	2,371.00	2,368.71	— 0.08	.....	2,368.71	2,368.71	Complete.
E. 223RD ST., E. 224TH ST., E. 225TH ST.—Bronxwood to Laconia Aves.	4/18/12	6/10/13	20,707.25	20,777.02	+ 0.34	.....	20,777.02	7,887.62	Complete.
E. 236TH ST.—White Pl. Rd. to Barnes Ave.	7/10/12	6/24/13	14,453.50	14,007.30	— 3.09	.....	14,007.30	7,866.05	Complete.*
ST. LAWRENCE AVE.—West Farms Rd. to Westchester Ave.	7/26/11	5/10/13	11,795.35	9,424.62	....	2,179.71	Spec. Payment. 7,244.91	705.51	132 days at \$10 chgd. overtime. Complete.
E. 165TH ST.—Grant to Walton Aves.	4/23/12	6/28/13	19,706.00	20,907.74	+ 0.07	.....	20,907.74	11,942.84	Complete.*
W. 235TH ST.—Spuyten Duyvil Pky. to Riverdale Ave.	3/27/12	7/14/13	18,893.75	18,793.97	— 0.53	.....	18,793.97	18,793.97	Complete.*
GLEBE AVE.—Zerega Ave. to Overing St.	5/15/13	7/15/13	4,286.00	4,280.95	— 0.14	.....	4,280.95	4,280.95	Complete.
MACLAY AVE.—Zerega to Walker Aves.	2/13/13	7/ 9/13	5,489.00	5,436.90	— 0.96	.....	5,436.90	5,436.90	Complete.*

PAYMENTS ON ACCEPTANCE, FINAL AND RETAINED AMOUNTS.—Continued.

Title of Contracts.	Date of Execution.	Date of Completion.	Estimated Cost of Whole Work.	Actual Cost of Whole Work.	Approximate Variation between Estimated and Actual Cost of Whole Work Shown in Percentage.	Total Amount Retained as Security for Repairs.	Total Amount Certified.	Total Amount Certified During Year.	Remarks.
BOSTON RD.—White Pl. Rd. to north line of City..	1/24/11	7/9/13	220,502.50	224,491.32	+ 1.81	.....	224,491.32	81,588.32	Complete.*
TAYLOR AVE.—Gleason to Westchester Ave.....	5/1/13	7/19/13	2,396.15	2,390.80	- 0.25	.....	2,390.80	2,390.80	Complete.
GRAND AVE.—W. 181st to W. 184th St.	2/18/13	8/14/13	10,195.80	11,679.37	+14.56	.....	11,679.37	11,679.37	Complete.*
W. 233RD ST.—Broadway to Albany Rd.	4/19/12	8/13/13	14,732.00	14,000.51	- 4.97	.....	14,000.51	14,000.51	Complete.*
LELAND AVE.—Walker to Westchester Aves.....	8/30/12	8/16/13	22,987.00	22,915.83	- 0.31	.....	22,915.83	18,165.18	Complete.*
ST. LAWRENCE AVE.—Randolph to Westchester Aves.	7/14/13	8/18/13	1,402.50	1,356.21	- 3.28	.....	1,356.21	1,356.21	Complete.
DORSEY ST.—Zerega Ave. to Seddon St.	12/2/12	8/21/13	1,983.00	2,299.11	+15.93	.....	2,299.11	2,299.11	Complete.
RANDOLPH AVE.—St. Lawrence to Beach Aves...	6/4/13	8/5/13	1,164.00	1,201.79	+ 3.26	.....	1,201.79	1,201.79	Complete.
W. 172ND ST.—Jerome to Inwood Aves.....	6/6/13	8/13/13	2,904.00	2,554.02	-12.05	.....	2,554.02	2,554.02	Complete.
E. 198TH ST.—Jerome to Creston Aves.....	5/2/13	7/10/13	1,113.00	1,118.29	+ 0.45	.....	1,118.29	1,118.29	Complete.
ROSEDALE AVE.—Walker to Tremont Aves.....	12/2/12	9/27/12	13,788.00	14,352.51	+ 4.09	.....	14,352.51	14,352.51	Complete.*
BAYCHESTER AVE.—Boston Rd. to Pelham Bay Park	5/24/11	9/6/13	121,598.50	120,472.57	- 0.92	.....	120,472.57	49,340.37	Complete.*
PUGSLEY AVE.—McGraw to Tremont Aves.....	7/14/13	9/25/13	5,722.75	5,692.28	- 0.52	.....	5,692.28	5,692.28	Complete.*
ALBANY RD.—Bailey Ave., at 230th St. to Bailey Ave., at 233rd St.	9/3/11	9/18/13	22,019.00	17,859.55	-18.89	.....	17,859.55	10,317.68	128¼ days at \$10 chgd. Complete.*
CORLEAR AVE.—230th to 240th Sts.....	5/24/12	10/15/13	44,982.50	43,957.39	- 2.28	.....	43,957.39	38,714.17	Complete.*
GLEBE AVE.—Westchester to Zerega Ave.....	9/9/12	10/24/13	10,550.30	12,272.61	+16.32	.....	12,272.61	12,272.61	Complete.*
WHITTIER ST.—Seneca Ave. to Lafayette Ave....	8/11/13	10/29/13	3,706.00	3,616.25	- 2.43	.....	3,616.25	3,616.25	Complete.
MCGRAW AVE.—Unionport Rd. to Beach Ave....	11/21/12	11/19/13	19,492.30	19,802.34	+ 1.59	.....	19,802.34	19,802.34	Complete.*
W. 234TH ST.—Kingsbridge Ave. to Albany Rd....	4/9/12	11/22/13	19,106.00	18,311.80	- 4.16	.....	18,311.80	18,311.80	Complete.*
NORTH ST.—Aqueduct Ave. to Jerome Ave.....	8/27/13	12/8/13	2,917.50	2,782.49	- 4.63	.....	2,782.49	2,782.49	Complete.
W. 179TH ST.—Aqueduct Ave. to Osborne Pl.	5/5/18	12/20/13	16,458.50	15,829.19	- 3.82	.....	15,829.19	15,829.19	Complete.*
CROMWELL AVE.—E. 150th St. to Jerome Ave...	6/4/06	3/15/13	31,238.50	126,600.90	-14.84	.....	126,600.90	5,808.45	Complete.
MORRIS AVE.—Fordham Rd. to E. 191st St., etc...	8/6/13	12/29/13	7,442.00	8,005.83	+ 7.56	.....	8,005.83	8,005.83	Complete.*
TRANSVERSE RDS. at E. 176TH ST. in connection with G. B. & C.	1/9/11	1/18/13	114,944.60	114,984.00	+ 0.04	5,749.70	109,244.30	20,360.75	1-yr. guar.
BEDFORD PK. BOULEVARD, in connection with G. B. & C.	4/9/12	12/9/13	95,988.80	104,523.38	+ 8.89	5,226.17	99,297.21	67,514.33	1-yr. guar.*

Reg., Grad. and Steps.									
SUMMIT PL.—Heath to Bailey Aves.....	8/19/13	11/29/13	5,313.75	5,416.83	+ 1.94	.....	5,416.83	4,875.15	Complete.*
Repav. Redressed Granite.									
E. 166TH ST.—Cauldwell Ave. to Dawson St.....	6/23/13	9/25/13	19,425.55	19,442.91	+ 0.08	949.94	18,492.97	18,492.97	1-yr. Guar.*
BROOK AVE.—E. 156th St. to Third Ave.....	5/31/13	10/ 9/13	15,890.20	15,655.34	— 1.48	786.11	14,869.23	14,869.23	1-yr. Guar.*
E. 150TH ST.—Third to Melrose Aves., etc.....	5/ 6/13	10/13/13	9,196.50	9,168.82	— 0.30	366.07	8,802.75	8,802.75	1-yr. Guar.*
E. 179TH ST.—Park to Third Aves.....	9/18/13	11/28/13	5,873.25	5,963.16	+ 1.53	317.63	5,645.53	5,645.53	1-yr. Guar.
WEBSTER AVE.—E. 178th to E. 187th Sts.....	6/ 4/13	12/29/13	55,762.40	56,305.54	+ 0.97	3,038.06	53,267.48	53,267.48	1-yr. Guar.*
TREMONT AVE.—Webster to Third Aves.....	5/31/13	10/16/13	(Declared abandoned).						
Pav. Granite and Asphalt Blocks.									
BAILEY AVE.—Albany Rd. to Ft. Independence St..	7/16/13	10/ 9/13	9,613.75	9,714.85	+ 1.06	1,457.23	8,257.62	8,257.62	5-yr. Guar.*
Pav. or Repav. Granite Block.									
TIFFANY ST.—Edgewater Rd. to Dock	9/ 9/12	6/30/13	9,991.50	9,517.65	— 4.74	287.68	9,229.97	9,229.97	1-yr. Guar.*
E. 180TH ST.—Third Ave. to Bronx St.....	5/24/12	6/13/13	91,367.00	91,896.00	+ 0.58	7,492.77	84,403.23	17,258.82	1-yr. Guar.*
BURNSIDE AVE.—Aqueduct Ave. to Sedgwick Ave.	9/24/12	9/11/13	28,159.40	29,774.21	+ 5.73	2,375.29	27,398.92	27,398.92	1-yr. Guar.*
RIVER AVE.—E. 149th St. to 450 feet south of E. 151st St.	2/20/13	8/13/13	8,984.00	9,031.78	+ 0.53	532.81	8,198.97	8,198.97	1-yr. Guar.*
GERMAN PL.—Westchester Ave. to Rae St.....	7/14/13	9/17/13	4,826.00	4,768.94	— 1.18	393.76	4,375.18	4,375.18	1-yr. Guar.*
EXTERIOR ST.—University Heights Br. to Ford- ham Rd.	8/20/13	11/29/13	7,830.90	7,646.67	— 2.35	523.94	7,122.73	7,122.73	1-yr. Guar.
E. 170TH ST.—Bristow St. to Wilkins Pl.....	10/29/13	11/29/13	4,631.30	4,639.10	+ 0.17	419.64	4,219.46	4,219.46	1-yr. Guar.
CEDAR AVE.—Sedgwick Ave. to W. 179th St....	8/19/13	12/13/13	33,016.30	31,198.86	— 5.51	2,758.14	28,440.72	28,440.72	1-yr. Guar.
E. 183RD ST.—Alexander to Willis Aves.....	9/ 9/12	9/27/13	29,125.00	28,857.16	— 0.92	2,236.85	26,620.31	26,620.31	1-yr. Guar.
Paving or Repaving Bituminous Concrete.									
CITY IS. AVE.—City Is. Br. to Long Island So. COMMONWEALTH AVE.—Walker Ave. to Merrill St.	11/28/11	1/ 6/13	57,540.00	57,680.33	+ 0.25	11,536.07	46,144.26	10,829.26	5-yr. Guar.
MANIDA ST.—Lafayette Ave. to Eastern Boulevard.	9/24/12	1/15/13	6,746.80	16,520.91	— 3.34	990.89	5,530.02	5,530.02	5-yr. Guar.
MORRIS AVE.—E. 184th St. to Fordham Rd....	9/12/12	5/30/13	17,183.45	17,214.13	+ 0.18	2,072.06	15,142.07	12,834.41	5-yr. Guar.*
LIND AVE.—23rd and 24th Ward Line to Aqueduct Ave.	12/26/12	5/ 8/13	5,254.20	5,434.44	+ 3.43	815.17	4,619.27	4,619.27	5-yr. Guar.*
AQUEDUCT AVE.—Fordham Rd. to Kingsbridge Rd.	2/24/13	5/ 6/13	7,911.65	7,821.19	— 1.15	1,173.18	6,648.01	6,648.01	5-yr. Guar.
WALTON AVE.—E. 177th St. to Tremont Ave....	10/29/12	5/14/13	26,725.00	19,184.31	—28.21	2,877.65	16,306.66	16,306.66	5-yr. Guar.*
W. 261ST ST.—Riverdale Ave. to Broadway.....	4/18/13	6/ 3/13	3,066.20	3,042.01	— 0.78	456.30	2,585.71	2,585.71	5-yr. Guar.
† Net.	11/15/12	6 17/13	12,039.50	11,974.12	— 0.55	1,796.12	10,178.00	10,178.00	5-yr. Guar.*
E. 173RD ST.—So. Boulevard to Bryant Ave.	1/13/13	5 28/13	4,937.20	5,015.83	+ 1.60	752.37	4,263.46	4,263.46	5-yr. Guar.
DEVORE TERRACE—Webb Ave. to W. 190th St....	10/10/12	7/ 8/13	4,894.00	4,837.60	— 1.16	739.14	4,098.46	4,098.46	18 days at \$ chgd. 5-yr.
ST. LAWRENCE AVE.—Walker Ave. to Merrill St.	9/24/12	7/11/13	7,330.40	17,131.88	— 2.71	1,081.03	6,050.85	6,050.85	15 days at \$ chgd. 5-yr. *
ODGEN AVE.—W. 169th St. to Aqueduct Ave....	5/ 5/13	8/ 2/13	7,277.10	7,399.98	+ 1.68	1,110.00	6,289.98	6,289.98	5-yr. Guar.*
E. 202ND ST.—Webster Ave. to N. Y. & H. R. R.	2/28/13	8/16/13	2,383.75	2,323.39	— 2.52	348.51	1,974.88	1,974.88	5-yr. Guar.

PAYMENTS ON ACCEPTANCE, FINAL AND RETAINED AMOUNTS.—Continued.

Title of Contracts.	Date of Execution.	Date of Completion.	Estimated Cost of Whole Work.	Actual Cost of Whole Work.	Approximate Variation between Estimated and Actual Cost of Whole Work Shown in Percentage.	Total Amount Retained as Security for Repairs.	Total Amount Certified.	Total Amount Certified During Year.	Remarks.
MORRIS AVE.—E. 166th St. to E. 170th St.	7/ 2/13	9/11/13	13,227.75	13,281.72	+ 0.41	1,992.26	11,289.46	11,289.46	5-yr. Guar.*
FINDLAY AVE.—E. 165th to E. 166th Sts.	7/15/13	10/22/13	2,506.00	2,496.76	— 0.36	374.51	2,122.25	2,122.25	5-yr. Guar.
HOE AVE.—E. 173rd St. to Boston Rd.	7/15/13	10/25/13	6,123.00	6,199.15	+ 1.24	929.87	5,269.28	5,269.28	5-yr. Guar.*
NELSON AVE.—Featherbed Lane to Macombs Rd..	9/19/13	10/20/13	8,106.05	8,180.00	+ 0.91	1,227.00	6,953.00	6,953.00	5-yr. Guar.*
VYSE AVE.—E. 173rd to E. 177th St.	7/15/13	11/ 1/13	12,665.00	12,420.69	— 1.93	1,863.10	10,567.59	10,567.59	5-yr. Guar.*
GARRISON AVE.—Tiffany St. to Hunts Pt. Ave...	8/ 5/13	11/11/13	7,148.00	7,222.31	+ 1.03	1,083.35	6,138.96	6,138.96	5-yr. Guar.*
VYSE AVE.—E. 172nd to E. 173rd Sts.	11/ 7/12	12/ 1/13	4,038.65	4,007.44	— 0.77	604.12	3,403.32	3,403.32	5-yr. Guar.
BRANDT PL.—University Ave. to Nelson Ave., etc.	8/21/13	12/20/13	4,234.00	4,193.38	— 0.97	629.01	3,564.37	3,564.37	5-yr. Guar.*
KINGSBRIDGE AVE.—W. 230th to W. 234th Sts.	10/31/13	12/24/13	11,434.00	11,465.40	+ 0.27	1,719.81	9,745.59	9,745.59	5-yr. Guar.*
MORRIS AVE.—E. 166th to E. 170th Sts.	10/31/13	12/24/13	6,541.50	6,612.65	+ 1.23	841.90	4,770.75	4,770.75	5-yr. Guar.
Paving or Repaving Asphalt Blocks.									
BARRETTO ST.—So. Boulevard to Whitlock Ave...	11/26/12	5/19/13	2,449.00	2,425.95	— 0.94	363.89	2,062.06	2,062.06	5-yr. Guar.
WALKER AVE.—Morris Pk. Ave. to Unionport Rd.	10/24/12	5/22/13	46,102.15	43,256.79	— 6.17	6,488.52	36,768.27	17,069.54	5-yr. Guar.*
HEATH AVE.—Boston Ave. to Ft. Independence St.	11/26/12	6/14/13	11,216.89	11,026.86	— 1.69	1,654.03	9,372.83	9,372.83	5-yr. Guar.*
AQUEDUCT AVE.—Burnside Ave. to 181st St.	10/28/12	6/23/13	36,106.70	36,716.06	— 1.69	5,507.50	31,209.16	31,209.16	5-yr. Guar.*
MORRIS AVE.—E. 156th to E. 161st Sts.	5/ 2/13	7/19/13	3,873.20	3,400.56	—12.21	510.08	2,890.48	2,890.48	5-yr. Guar.
TIFFANY ST.—So. Boulevard to Lafayette Ave....	12/26/12	8/ 2/13	11,611.55	11,502.31	— 0.94	1,725.35	9,776.96	9,776.96	5-yr. Guar.*
E. 165TH ST.—Union to Stebbins Aves.	8/27/13	10/18/13	5,901.00	5,802.83	— 1.69	870.42	4,932.41	4,932.41	5-yr. Guar.
LONGFELLOW AVE.—Lafayette Ave. to N. Y., N. H. & H. R. R.	8/ 8/13	10/21/13	17,703.15	17,613.48	— 0.51	2,642.02	14,971.46	14,971.46	5-yr. Guar.
E. 165TH ST.—Grant to Morris Aves.	11/ 5/13	12/ 2/13	2,436.10	2,414.84	— 0.90	362.23	2,052.61	2,052.61	5-yr. Guar.
Repav. Asphalt Blocks and Redressed Granite Blocks.									
MELROSE AVE.—E. 163rd St. to Brook Ave., etc.	7/27/12	6/11/13	12,730.40	13,816.95	+ 8.54	2,072.54	11,744.41	11,744.41	*1 & 5-yr. Guar.
Repaving Wood Block and Granite Block.									
SO. BOULEVARD—Barretto St. to Westchester Ave.	9/ 3/12	1/14/13	60,116.00	58,805.35	— 2.18	8,820.80	49,984.55	6,275.43	5-yr. Guar.
Paving or Repaving Sheet Asphalt.									
CLAY AVE.—E. 165th to E. 166th Sts.	11/15/12	1/ 4/13	4,410.60	4,344.75	— 1.49	651.71	3,693.04	3,693.04	5-yr. Guar.
WHITE PL. RD.—Gun Hill Rd. to E. 227th St.	10/17/12	1/ 9/13	14,116.20	13,984.45	— 0.93	2,097.67	11,886.78	7,247.90	5-yr. Guar.
E. 179TH ST.—Park Ave. W. to Valentine Ave....	12/26/12	4/12/13	4,593.00	4,677.88	+ 1.85	701.08	3,976.20	3,976.20	5-yr. Guar.

E. 173RD ST.—Minford Pl. to So. Boulevard.....	12/26/12	4/17/13	2,305.50	2,402.86	+ 0.33	360.43	2,042.43	2,042.43	5-yr. Guar.
BOSTON RD.—E. 165th St. to Jefferson St., etc.,	6/23/13	9/23/13	41,807.00	41,893.55	+ 0.21	6,284.03	35,609.52	35,609.52	5-yr. Guar.*
JACKSON AVE.—E. 149th St. to Westchester Ave.	7/15/13	9/25/13	7,130.40	7,326.25	+ 2.75	1,098.94	6,227.31	6,227.31	5-yr. Guar.*
BATHGATE AVE.—E. 188th St. to Fordham Rd...	6/ 4/13	7/10/13	6,266.10	6,102.40	- 2.61	915.36	5,187.04	5,187.04	5-yr. Guar.*
BECK ST.—Leggett Ave. to Longwood Ave., etc....	7/ 2/13	9/ 8/13	13,176.50	13,092.41	- 0.64	1,963.86	11,128.55	11,128.55	5-yr. Guar.*
W. 230TH ST.—Broadway to Corlear Ave.....	7/14/13	10/23/13	15,209.60	15,013.34	- 1.87	2,252.00	12,761.34	12,761.34	5-yr. Guar.*
SUMMIT AVE.—E. 165th to E. 166th Sts.....	8/ 6/13	12/ 6/13	3,650.35	3,601.42	- 1.34	540.21	3,061.21	3,061.21	5-yr. Guar.
E. 180TH ST.—Devoc Ave. to Morris Pk. Ave.....	8/21/13	12/26/13	11,008.50	11,119.06	+ 1.01	1,067.86	9,451.20	9,451.20	5-yr. Guar.*
Paving or Repaving Asphalt and Asphalt Block.									
W. 231ST ST.—Corlear Ave. to Bailey Ave.....	5/ 2/13	7/10/13	19,339.85	19,442.18	+ 0.53	2,016.33	16,525.85	16,525.85	5-yr. Guar.*
CAULDWELL AVE.—Westchester Ave. to E. 161st St.	5/ 2/13	7/26/13	11,498.25	12,053.80	+ 4.83	1,808.07	10,245.73	10,245.73	5-yr. Guar.*
LONGWOOD AVE.—So. Boulevard to Westchester Ave.	7/15/13	8/23/13	6,938.50	6,922.20	- 0.23	1,038.33	5,893.87	5,893.87	5-yr. Guar.*
FOX ST.—E. 165th St. to Intervale Ave.....	5/ 2/13	6/ 6/13	10,665.05	10,463.33	+ 3.95	1,569.50	8,893.83	8,893.83	5-yr. Guar.*
Paving or Repaving Asphalt and Granite Blocks.									
E. 183RD ST.—Arthur Ave. to So. Boulevard	9/ 5/12	5/10/13	26,490.50	26,426.63	- 0.27	3,963.99	22,462.64	11,050.89	1 & 5-yr. Guar*
Miscellaneous—President's Orders.									
Guard Rail, INTERVALE AVE.—Lot Nos. 985-987	8/29/13	10/29/13	17.50	17.50	.....	.....	17.50	17.50	Complete.
Guard Rail, PARK AVE.—184th St. to 217 feet N'y.	9/18/13	10/23/13	77.00	79.21	+ 2.60	.....	79.21	79.21	Complete.
Guard Rail, E. 182ND ST. and Webster Ave., north-west corner	8/29/13	10/22/13	29.75	30.80	+ 3.53	.....	30.80	30.80	Complete.
Guard Rail, BROADWAY and W. 236th St., north-east corner	8/29/13	10/17/13	6.30	6.30	.....	.....	6.30	6.30	Complete.
Flag, THIRD AVE. and St. Paul's Pl., northwest corner	8/20/13	11/ 1/13	76.50	75.24	- 1.64	.....	75.24	75.24	Complete.
Flag, 149TH ST. and Third Ave., southeast corner..	8/20/13	9/27/13	318.00	333.70	+ 4.71	.....	333.70	333.70	Complete.
Flag, E. 139TH ST., 200 feet E. of St. Ann's Ave., north side	8/26/12	4/21/13	66.00	67.06	+ 1.51	.....	67.06	67.06	Complete.
Flag, GRANT AVE.—In front of No. 1044.....	(Cancelled May 19, 1913.)		.....	.....	.....	.....	.....	.....	.....
Flag, E. 145TH ST. in front of No. 542	12/27/12	2/ 8/13	35.00	38.00	+ 8.57	.....	38.00	38.00	Complete.
Reg. and Flag, DALY AVE.—129 feet south of 177th St., etc.	6/ 4/12	12/23/13	37.50	37.50	.....	.....	37.50	37.50	Complete.
Reg., Flag., etc. HOE AVE.—167th St. and West Farms Rd.	9/ 8/13	12/31/13	250.00	226.70	- 0.96	.....	226.70	226.70	Complete.
Improvement Junct. of THIRD AVE. and BOSTON RD.	2/ 5/13	8/28/13	97.00	97.00	.....	.....	97.00	97.00	Complete.
Improvement Junct. of THIRD AVE. and FRANKLIN AVE.	2/13/13	8/28/13	3,095.75	3,037.43	- 1.87	303.74	2,733.69	2,733.69	1-yr. Guar.
Total payments on acceptance			2,181,054.40	2,174,516.20	- 0.29	135,556.01	2,038,960.19	1,277,037.01	

* Includes partial payments made.

† Net.

FINAL AND RETAINED PAYMENTS.

Title of Contracts.	Date of Execution.	Date of Completion.	Estimated Cost of Whole Work.	Actual Cost of Whole Work.	Approximate Variation between Estimated and Actual Cost of Whole Work Shown in Percentage.	Total Amount Retained as Security for Repairs.	Total Amount Certified.	Total Amount Certified During Year.	Remarks.
Paving or Repaving Asphalt Block.									
HEATH AVE.—Bailey Ave. to Boston Ave.....	1/31/12	10/ 8/12	28,103.20	27,832.03	— 0.96	.....	27,832.03	5,566.41	Complete.
E. 133RD ST.—So. Boulevard to Cypress Ave.....	4/11/12	10/ 9/12	6,443.00	6,519.21	+ 1.18	.....	6,519.21	1,303.84	Complete.
BRYANT AVE.—E. 172nd St. to E. 174th St.....	9/20/12	11/14/12	7,518.20	7,463.55	— 0.73	.....	7,463.55	1,119.53	Complete.
BELMONT AVE.—175th to 177th Sts.....	8/21/12	10/26/12	9,721.00	9,640.85	— 0.82	.....	9,640.85	1,446.13	Complete.
HOE AVE.—E. 172nd to E. 173rd Sts.....	6/ 5/12	11/15/12	5,898.40	6,175.39	+ 4.60	.....	6,175.39	926.31	Complete.
OGDEN AVE.—Merriam Ave. to W. 169th St.....	8/26/12	11/16/12	5,407.75	5,384.12	— 0.44	.....	5,384.12	807.62	Complete.
PLIMPTON AVE.—Boscobel Ave. to W. 169th St..	6/ 5/12	8/ 3/12	7,274.50	7,299.58	+ 0.34	.....	7,299.58	1,094.94	Complete.
E. 178TH ST.—Crotona Ave. to So. Boulevard	6/ 5/12	7/23/12	9,395.40	9,482.29	+ 0.93	.....	9,482.29	1,422.34	Complete.
E. 173RD ST.—Third Ave. to Fulton Ave.....	6/ 5/12	7/23/12	1,897.42	1,779.52	— 1.49	.....	1,779.52	266.93	Complete.
KINGSBRIDGE RD.—Jerome Ave. to Creston Ave..	6/ 6/11	5/ 2/12	8,634.40	8,541.51	— 1.06	.....	8,541.51	1,708.30	Complete.
E. 152ND ST.—Park Ave. to Morris Ave.	12/19/11	5/23/12	3,642.10	3,618.92	— 0.63	.....	3,618.92	723.78	Complete.
Paving or Repaving Asphalt.									
BEAUMONT AVE.—Grote St. to E. 189th St.....	9/15/12	11/12/12	14,837.50	14,775.95	— 0.42	.....	14,775.95	2,216.89	Complete.
Paving and Repaving Asphalt.									
ADAMS PL.—182nd St. to Crescent Ave.....	8/14/12	11/18/12	4,357.50	4,320.61	— 0.85	.....	4,320.61	648.09	Complete.
ST. MARY'S ST.—So. Boulevard to Wales Ave., etc.	10/28/12	12/ 7/12	4,277.44	4,168.24	— 2.53	.....	4,168.24	625.24	Complete.
TINTON AVE.—E. 166th St. to E. 169th St.....	9/27/12	10/ 4/12	13,744.75	13,745.37	.....	.....	13,745.37	2,061.81	Complete.
OAK TREE PL.—LaFontaine Ave. to Hughes Ave..	8/14/12	10/30/12	3,902.95	3,935.53	+ 0.84	.....	3,935.53	590.33	Complete.
ARTHUR AVE.—Tremont Ave. to E. 183rd St....	5/24/12	11/ 4/12	26,831.80	25,142.93	— 6.29	.....	25,142.93	2,514.29	Complete.
ARTHUR AVE.—E. 183rd St. to Pelham Ave.....	11/28/10	7/22/12	20,108.50	20,450.98	+ 1.20	.....	20,450.98	4,090.20	Complete.
BERGEN AVE.—Westchester Ave. to Brook Ave..	6/ 4/12	8/22/12	8,396.20	8,979.36	+ 6.94	.....	8,979.36	897.94	Complete.
TIFFANY ST.—Reck St. to So. Boulevard	11/ 3/11	4/18/12	5,943.50	5,947.40	+ 0.07	.....	5,947.40	1,189.48	Complete.
FOX ST.—Avenue St. John to Lafayette Ave.....	4/15/12	6/19/12	4,729.49	4,648.36	— 1.71	.....	4,648.36	929.67	Complete.
AQUEDUCT AVE.—W. 151st St. to Fordham Rd..	6/ 4/12	8/19/12	33,446.25	33,359.41	— 0.29	.....	33,359.41	5,063.91	Complete.
LORING PL.—University Ave. to W. 183rd St....	11/ 3/11	4/ 8/12	3,674.55	3,702.95	+ 0.76	.....	3,702.95	740.59	Complete.
E. 178TH ST.—Bryant Ave. to Boston Rd.....	9/12/11	4/23/12	3,174.70	3,225.31	+ 1.57	.....	3,225.31	645.06	Complete.
Paving or Repaving Granite Block.									
CANAL PL.—E. 138th St. to E. 144th St.....	5/24/11	11/29/11	15,342.00	15,900.85	+ 3.64	.....	15,900.85	1,416.10	Complete.

E. 161ST ST.—Park Ave. E. to Park Ave. W.....	8/14/12	10/22/12	5,740.60	6,237.49	— 8.64	.....	6,237.49	428.15	Complete.
EXTERIOR ST.—E. 149th St. to E. 151st St.....	8/18/11	12/ 9/11	32,087.50	31,797.81	— 0.00	.....	31,797.81	3,035.76	Complete.
LEGGETT AVE.—So. Boulevard to N. Y., N. H. & H. R. R.	11/ 6/11	4/17/12	6,071.45	6,292.50	+ 3.64	.....	6,292.50	577.81	Complete.
E. 149TH ST.—Morris Ave. to Mott Ave.....	11/21/10	12/14/11	16,968.00	17,740.57	+ 4.55	.....	17,740.57	678.71	Complete.
BROWN PL.—E. 132nd to E. 133rd Sts.....	11/10/11	5/15/12	3,907.80	3,722.79	— 4.73	.....	3,722.79	225.95	Complete.
Paving or Repaving Wood Block.									
SO. BOULEVARD—Third Ave. to Alexander Ave..	5/12/11	7/29/11	21,757.20	21,580.35	— 0.81	.....	21,580.35	2,158.04	Complete.
E. 158TH ST.—Cauldwell Ave. to Eagle Ave.....	11/11/11	4/27/12	2,810.00	2,844.36	+ 1.21	.....	2,844.36	568.87	Complete.
WEBSTER AVE.—E. 187th to E. 189th Sts.....	11/15/11	5/25/12	19,507.80	19,514.20	+ 0.03	.....	19,514.20	1,951.42	Complete.
Paving and Repaving Asphalt and Asphalt Blocks.									
BELMONT AVE.—E. 177th St. to Pelham Ave....	5/24/12	9/17/12	50,953.10	50,021.81	— 1.83	.....	50,021.81	5,002.18	Complete.
E. 160TH ST.—Cauldwell Ave. to Forest Ave.....	9/22/11	12/ 9/11	4,438.75	4,403.18	— 0.81	.....	4,403.18	880.04	Complete.
HALL PL.—E. 165th St. to E. 167th St.....	3/15/12	6/ 1/12	4,885.25	4,960.28	+ 1.53	.....	4,960.28	992.06	Complete.
Paving and Repaving Asphalt and Asphalt Block.									
CARTER AVE.—E. 173rd to E. 176th Sts.....	9/15/11	3/31/12	14,859.00	14,559.17	— 2.02	.....	14,559.17	2,911.83	Overtime chgd. Complete.
Paving and Repaving Granite Block and Asphalt Block.									
FREEMAN ST.—So. Boulevard to Westchester Ave.	5/15/12	7/19/12	21,241.50	20,950.98	— 1.37	.....	20,950.98	2,095.10	Complete.
FT. INDEPENDENCE ST.—Sedgwick Ave. to W. 238th St.	9/12/11	2/16/12	26,502.70	27,324.36	+ 3.10	.....	27,324.36	5,464.87	Complete.
Improvement of Junct. of THIRD AVE. and BOS- TON RD.	3/20/12	8/ 5/12	2,024.80	2,626.15	—10.19	.....	2,626.15	131.96	Overtime chgd. Complete.
Paving or Repaving Bituminous Concrete.									
PERRY AVE.—Moshulu Pky. to Gun Hill Rd....	6/15/12	6/26/12	15,432.00	15,528.25	+ 0.62	.....	15,528.25	3,105.65	Complete.
WEBB AVE.—W. 188th St. to Kingsbridge Rd....	4/15/12	7/22/12	11,480.25	11,210.50	— 2.61	.....	11,210.50	2,242.10	Complete.
BRONX PARK AVE.—Tremont Ave. to Walker Ave.	6/20/12	8/ 3/12	3,435.86	3,513.57	+ 2.27	.....	3,513.57	527.04	Complete.
E. 239TH ST.—Arthur Ave. to Verio Ave.....	6/26/12	7/18/12	3,074.00	3,082.27	+ 0.25	.....	3,082.27	616.45	Complete.
VALENTINE AVE.—E. 197th St. to E. 201st St..	4/11/12	8/12/12	9,620.30	9,796.78	+ 1.83	.....	9,796.78	1,971.16	Overtime chgd. Complete.
BASSFORD AVE.—E. 182nd St. to Third Ave....	9/15/11	12/ 7/11	5,443.50	5,376.91	— 1.23	.....	5,376.91	1,083.33	Overtime chgd. Complete.
E. 188TH ST.—Third Ave. to Beaumont Ave.....	9/15/11	4/ 3/12	10,128.50	10,230.42	+ 0.99	.....	10,230.42	2,046.08	Complete.
Paving or Repaving with Bituminous Concrete.									
GRAND AVE.—Tremont Ave. to Burnside Ave..	11/22/11	6/ 8/12	4,110.00	4,062.58	— 1.36	.....	4,062.58	812.52	Complete.
PERRY AVE.—Bedford Pk. Boulevard to Moshulu Parkway	12/21/11	6/ 1/12	4,782.90	4,758.53	— 0.50	.....	4,758.53	951.71	Complete.
Total Final and Retained Amounts			\$558,790.26	\$558,176.03	— 0.11	.....	\$558,176.03	\$80,414.07	

† Net.

RECAPITULATION.

No.	Total Amount of	Estimated Cost.	Earned.	Retained.	Certified.	Certified During Year.
	Partial Payments made during year	\$1,396,056.77	\$731,770.50	\$119,938.74	\$611,831.76	\$482,753.15
11	Contracts in force (no work done)	156,128.07	.....	.....	.....	.....
125	Payments on Acceptance made during year	2,181,051.40	2,174,516.20	135,556.01	2,038,960.19	1,277,037.01
49	Final and Retained Amounts made during year	538,790.26	538,176.03	.....	538,176.03	80,414.07
	GRAND TOTAL	\$4,292,029.50	\$3,464,462.73	\$255,494.75	\$3,208,967.98	\$1,840,206.23

Respectfully submitted,
S. C. THOMPSON,
Engineer of Highways.

December 31, 1913.

Mr. Richard H. Gillespie,

Chief Engineer of Sewers and Highways.

Sir:—

I submit herewith a report of the operations of the Bureau of Sewers in the office of the President of the Borough of The Bronx for the year ending December 31, 1913.

Respectfully,

JOSIAH H. FITCH,

Engineer of Sewers.

OFFICE OF THE PRESIDENT OF THE BOROUGH OF THE BRONX.
REPORT OF THE OPERATIONS OF THE BUREAU OF SEWERS, BOROUGH OF THE BRONX, DURING THE
YEAR ENDING DECEMBER 31, 1913.

I. SUMMARY OF WORK DONE PRIOR TO AND SINCE ANNEXATION IN 1874 TO DECEMBER 31, 1913
—COMBINED STORM WATER AND SANITARY SEWERS.

	Linear feet of Con- crete Sewer.	Linear feet of Brick Sewer.	Lin. ft. of Wooden Slave Sewer.	Linear feet of Pipe Sewer.	Total Lengths of Sewers. All Kinds. Lin. ft. Miles.		No. of Sputs.	No. of Manholes Built.	No. of Manholes Rebuilt.	No. of Manhole Heads and Covers.	No. of Ventilators.	No. of Receiving Basins Built.	No. of Receiving Basins Rebuilt.	No. of Catch Basins Built.	Linear ft. of Concrete Drain.
First Quarter	2,979.00	.....	..	12,196.70	15,175.70	2.874	1,760	161	..	..	..	21	..	1	50.00
Second Quarter	3,755.93	.....	..	12,640.48	16,396.41	3.105	1,493	140	..	..	..	58	..	..	....
Third Quarter	4,315.05	.....	..	16,656.80	20,971.85	3.972	2,168	196	2	..	..	51	..	..	....
Fourth Quarter	4,959.00	.....	..	17,891.90	22,850.90	4.328	2,608	216	27	..	..	43	..	1	....
Totals for Year 1913...	16,098.98	.....	..	59,385.88	75,394.86	14.279	8,089	713	29	..	..	173	..	2	50.00
*Totals prior to Jan. 1,															
1913	65,989.96	291,002.93	25	1,144,313.74	1,501,331.63	284.343	204,281	14,517	1	2	2	3,582	2	30	268.68
Totals, Jan. 1, 1914 ...	81,998.94	291,002.93	25	1,203,699.62	1,576,726.49	298.622	212,370	15,230	30	2	2	3,735	2	32	316.68
* For subdivisions under various Departments, see Annual Report for Year 1912.															

	Lin. ft. of 12-in. to 24-in. Drain Pipe.	Lin. ft. of 3-in. Drain Pipe.	Lin. ft. of 6-in. Pipe as Risers.	Cu. Yds. of Rock Excavation.	Cu. Yds. of Excava- tion. All Kinds. (Earth).	Cu. Yds. of Excava- tion in Tunnel.	Cu. Yds. of Con- crete (Extra).	Cu. Yds. of Class A Concrete.	Cu. Yds. of Class B Concrete.	Cu. Yds. of Class C Concrete.	Cu. Yds. of Class D Concrete.	Cu. Yds. of Granite Masonry.
First Quarter	28.6	....	1,104.	11,519.7	9,500.7	.....	.....	2,050.0	232.6	.....	860.	..
Second Quarter	235.9	....	941.3	10,852.4	6,460.0	.....	.....	4,825.0	295.2	.....	895.	..
Third Quarter	190.4	....	87.2	13,804.5	1,590.0	.....	.....	2,254.4	3,083.6	173.0	320.	..
Fourth Quarter	349.0	....	100.0	9,925.2	.....	.....	.....	1,110.0	2,025.3	468.6	.....	..
Totals for Year 1913	808.9	....	2,232.5	46,101.8	17,490.7	.....	.....	10,230.4	5,636.7	641.6	2,075.	..
*Total prior to Jan. 1, 1913. 9,877.2	1,246	6,147.3	1,367,970.03	192,006.28	49,210	12,501.67	36,369.3	28,758.4	481.8	13,624.	2.4	..
Totals, Jan. 1, 1914	10,181.1	1,246	8,379.8	1,414,071.83	209,496.98	49,210	12,501.67	46,608.7	34,395.1	1,123.4	15,700.	2.4

	Cu. Yds. of Brick Masonry.	Cu. Yds. of Rubble Masonry in Mortar.	Cu. Yds. of Dry Rubble Masonry.	Cu. Yds. of Broken Stone.	Feet (B. M.) of Timber.	Lin. Ft. of Piles.	Tons of Structural Steel.	Tons of Steel Bars.	Tons of Old Rails.	Pounds of Wrought Iron.	Pounds of Cast Iron.	Lin. Ft. of 24-in. Cast Iron Pipe.
First Quarter .....	.....	.....	.....	.....	154,559.	1,565.	3,075	77,438	.....	.....	.....	..
Second Quarter	2.	.....	37.5	3.4	151,555.	14,703.	10,975	289,135	.....	.....	.....	..
Third Quarter	22.1	14.	122.1	2.9	329,180.	160,851.	15,052	143,224	.....	.....	.....	..
Fourth Quarter .....	.....	213.	1.0	193.0	419,399.	121,400.	.....	77,113	.....	.....	.....	..
Totals for Year 1913	24.10	227.00	160.60	199.30	1,054,693.	298,519.	29,102	586,910	.....	.....	.....	..
*Totals prior to Jan. 1, 1913. 1,080.93	14,548.77	916.4	45,559.17	17,722,306.	1,621,974.	302,266	2,179,669	274,427	3,219	23,664	56.5	..
Totals, Jan. 1, 1914	1,105.03	14,775.77	1,077.00	45,758.47	18,776,990.	1,920,493.	331,368	2,766,579	274,427	3,219	23,664	56.5

	Sq. Ft. of Galv. Wire Netting.	Sq. Ft. of Expanded Metal.	Sq. Ft. of Waterproofing.	Lin. Ft. of Wooden Stave Flume.	No. of Sewer Gates.	Cu. Yds. of Embankment.	Sq. Yds. of Rip Rap.	Sq. Yds. of Telford Macadam.	Lin. Ft. of Iron Fence.	No. of Iron Gates.	Lin. Ft. of Curbing Set.	Sq. Yd. of Iron Slag Pavement.	Sq. Yds. Vitrified Brick Pavement.
First Quarter	110.	....	....	..	..	....	....	....	....	..	....	....	..
Second Quarter	978.	....	....	..	..	....	....	....	....	..	....	....	..
Third Quarter	710.4	....	....	..	..	....	....	....	330.6	..	....	....	77.8
Fourth Quarter .....	....	....	....	..	..	....	....	....	....	..	....	....	..
Totals for Year 1913 ..	1,798.4	....	....	..	..	....	....	....	330.6	..	....	....	77.8
*Totals prior to Jan. 1,													
1913	12,007.0	8,904	716	27	4	32,666	3,500	267	463.4	2	127.6	123.5	..
Totals, Jan. 1, 1914	13,805.4	8,904	716	27	4	32,666	3,500	267	794.00	2	127.6	123.5	77.8

**II. SUMMARY OF WORK DONE PRIOR TO AND SINCE ANNEXATION (JUNE 6, 1895) TO DECEMBER 31, 1913—
SANITARY SEWERS.**

Items.	Lin. Ft. of Brick Sewer.	Lin. Ft. of Pipe Sewer.	Total Lengths of Sewers. All Kinds.		No. of Spurs.	No. of Manholes.	No. of Inlets.	No. of Flush Tanks.	Cu. Yds. of Rock Excavation.	Cu. Yds. of Con- crete (Extra).	Cu. Yds. of Rubble Masonry in Mortar.	Cu. Yds. of Broken Stone.
			Lin. Ft.	Miles.								
98 First Quarter .....	.....	201.9	201.9	0.038	10	3	..	..	190.	....	.....	....
Second Quarter .....	.....	.....	.....	....	....	....	..	..	.....	....	.....	....
Third Quarter .....	.....	.....	.....	....	....	....	..	..	.....	....	.....	....
Fourth Quarter .....	.....	.....	.....	....	....	....	..	..	.....	....	.....	....
Totals for Year 1913 ....	.....	201.9	201.9	0.038	10	3	..	..	190.	....	.....	....
*Totals prior to Jan. 1, 1913.	7,194.70	182,252.58	189,447.28	35.880	12,595	1,256	6	4	47,938.10	30.56	2,132.56	211.69
Totals, Jan. 1, 1914	7,194.70	182,454.48	189,649.18	35.918	12,605	1,259	6	4	48,128.10	30.56	2,132.56	211.69

* For subdivision under various Departments, see Annual Report for Year 1912.

	Ft. (B. M.) of Timber.	Lin. Feet of Piles.	Lin. Ft. of 12-in. to 24-in. Drain Pipe.	Lin. Ft. of 6-in. to 8-in. Drain Pipe.	Lin. Ft. of 3-in. Drain Pipe.	Lin. Ft. of 3-in. Galv. Iron Pipe.	Lin. Ft. of 12-in. Cast Iron Pipe.	Lin. Ft. of 6-in. Pipe as Risers.
First Quarter	7,620	....	....	..	..	..	..	....
Second Quarter .....	....	....	....	..	..	..	..	....
Third Quarter .....	....	....	....	..	..	..	..	....
Fourth Quarter .....	....	....	....	..	..	..	..	....
Totals for Year 1913	7,620	....	....	..	..	..	..	....
*Totals prior to Jan. 1,								
1913	212,540	2,683	2,541	35	108	64	12	3,207
Totals, Jan. 1, 1914	220,160	2,683	2,541	35	108	64	12	3,207

Miles of Sewers in the Borough of The Bronx on December 31, 1913:

Combined Storm Water and Sanitary Sewers298.622
Sanitary Sewers 35.918

Total334.540

Of the foregoing mileage of Sewers built about 847/1000 miles has been re-built, of which 52/100 miles was rebuilt during the year 1913. In addition to the foregoing mileage there are about $4 \frac{8}{10}$ miles of uncompleted work (Sewers, etc.), and 50 Receiving Basins under contract December 31, 1913.

III. SURFACE WATER DRAINS (Built Under Contract).

	Lin. Ft. of Concrete Drain.	Lin. Ft. of Pipe Drain.	Tot. Lengths of Drains. (All Kinds) Lin. Ft. Miles.	No. of Spurs.	No. of Manholes.	No. of Manhole Frames.	No. of Rec. Basins.	Cu. Yds. of Rock Excavation.	Cu. Yds. of Excava- tion of all Kinds. (Earth).	Cu. Yds. of Class A Concrete.	Cu. Yds. of Class B Concrete.	Cu. Yds. of Brick Masonry.	Cu. Yds. of Rubble Masonry in Mortar.	Cu. Yds. of Dry Rubble Masonry.	Tons of Steel Bars.	Tons of Structural Steel.	Sq. Ft. of Wire Netting.
First Quarter																	
Second Quarter																	
Third Quarter		46.3	46.3	0.009			1										
Fourth Quarter																	
Total for Year 1913...		46.3	46.3	0.009			1										
*Total prior to Jan. 1, 1913	1,832	3,184.9	5,016.9	0.950	130	19	49	7	2,126.4	1,474.8	1,613.7	17	0.9	3,524	463	11.625	1,010
Totals, Jan. 1, 1914	1,832	3,231.2	5,063.2	0.959	130	19	49	8	2,126.4	1,474.8	1,613.7	17	0.9	3,524	463	11.625	1,010

* For subdivision under various Departments—See Annual Report for Year 1912.

TABLE III.—Continued.

	Feet (B. M.) of Timber.	Lin. Ft. of 8-in. Galv. Iron Pipe.	Lin. Ft. of 6-in. to 12-in. Cast Iron Pipe.	Cu. Yds. of Dry Stone Paving.	Septic Tanks Built.
First Quarter .....	....	....	....	....	..
Second Quarter .....	....	....	....	....	..
Third Quarter .....	....	....	....	....	..
Fourth Quarter .....	....	....	....	....	..
Totals for Year 1913 .....	....	....	....	....	..
*Totals prior to Jan. 1, 1913	19,641	14.5	1,033	189.5	1
Totals, Jan. 1, 1914	19,641	14.5	1,033	189.5	1

IV. STATEMENT SHOWING THE NATURE AND EXTENT OF THE
DRAINAGE PROVISIONS CONSTRUCTED AND UNDER
MAINTENANCE, IN ADDITION TO PERMANENT
SEWERS AND APPURTENANCES.

Class.	Total on Dec. 31, 1913.
Pipe Drains or Culverts, linear feet	101,180
Stone Drains or Culverts, linear feet	86,449
Box Drains or Culverts, linear feet	18,752
Open Drains or Ditches, linear feet	88,014
Inlets, number	649

V. CONTRACTS COMPLETED DURING 1913.

Number.	Estimated Cost of Work.	Total Amount Cer- tified as Actual Cost of Work.	Approximate Varia- tion between Estima- ted and Actual Cost shown in percentage.	Amount retained as Security for Repairs.
43	\$1,403,508.04	\$1,392,126.62	0.82	\$89,177.39

**VI. SUMMARY OF PAYMENTS MADE ON CONTRACTS IN FORCE AND
UNDER CONSTRUCTION DURING THE YEAR 1913.**

Number of Seventy Per Cent. Payments forwarded	53	
Amount paid to Contractors by Seventy Per Cent. Payments.		\$218,387.98
Number of Eighty-five Per Cent. Payments forwarded	116	
Amount paid to Contractors by Eight-five Per Cent. Payments		567,354.37
Number of Payments on Acceptance forwarded	43	
Net Amount Paid to Contractors by Payments on Acceptance		385,180.62
Number of Payments of Amounts Retained as Security for Re- pairs forwarded	31	
Net Amount Paid to Contractors on account of Security for Repairs		28,484.86
<hr/>		
Total Number of Payments of all kinds	243	
Total Amount Paid to Contractors		\$1,199,407.83

VII. SUMMARY OF CONTRACTS.

Number of Contracts.	In force, Jan. 1, 1913		Executed during year ending Dec. 31, 1913		Total	
	Sewers.	Receiving Basins.	Sewers.	Receiving Basins.	Sewers.	Receiving Basins.
Completed during the Year 1913	18	2	15	8	33	10
In progress at end of year ending De- cember 31, 1913	2	..	16	5	18	5
Under 6 months repair	8	..	14	8	22	8
<hr/>						
Totals	28	2	45	21	73	23

VIII. REPORT WITH REFERENCE TO LOCAL IMPROVEMENTS—BOROUGH OF THE BRONX.

Local Improvements for Sewers, etc., and Receiving Basins, etc.	1st Quarter ending March 31, 1913		2nd Quarter ending June 30th, 1913		3rd quarter ending Sept. 30th, 1913		4th Quarter ending Dec. 31st, 1913		Total for Year 1913	
	No.	Amount.	No.	Amount.	No.	Amount.	No.	Amount.	No.	Amount.
Total authorized for these purposes	7	\$131,700.00	16	\$302,675.00	8	\$87,825.00	14	\$336,332.00	45	\$858,532.00
*Let on Contract	11	683,801.55	11	207,667.64	18	193,386.60	10	190,096.37	50	1,274,952.16
Contract work completed	8	170,832.55	5	139,211.15	19	1,037,507.25	11	44,575.67	43	1,392,126.62
Contract work completed and certified to the Board of Assessors (includes Engrs. and Insprs. fees)	3	82,209.82	7	99,109.50	2	46,295.52	24	612,088.55	36	839,703.39
Contract work completed but not so certified (exclusive of Engrs. and Insprs. fees)	7	164,297.61	5	219,887.58	22	1,218,042.12	9	711,474.68	..	.....
Contract work in progress on December 31st, 1913, with estimated cost of same									23	1,232,063.84

* Includes 4 Contracts amounting to \$23,701.28 let during 1st Quarter, 1913, and relet during 2nd Quarter, 1913, for \$29,252.59.

**IX. TABULATION SHOWING AVERAGE PRICES AS BID DURING
THE YEARS 1912 AND 1913 ON VARIOUS CONTRACTS BY
THE SUCCESSFUL BIDDERS.**

Kind of Work.	1912		1913	
	No. of bids included in Average.	Average Price.	No. of bids included in Average.	Average Price.
Concrete Sewer (9 ft. 0 in. x 6 ft. 0 in.) and (11 ft. 3 in. x 8 ft.) Double, Per Lin. Foot .....	..	.....	1	\$52.70
Concrete Sewer, 11 ft. 3 in. x 8 ft. Double, Per Lin. Foot .....	..	.....	1	57.56
Concrete Sewer, 10 ft. 0 in. x 8 ft. 0 in. Double, Per Lin. Foot .....	..	.....	1	50.31
Concrete Sewer, 8 ft. 9 in. x 8 ft. 0 in. Double, Per Lin. Foot .....	..	.....	1	44.22
Concrete Sewer, 8 ft. 6 in. x 8 ft. 0 in. Double, Per Lin. Foot .....	..	.....	1	41.85
Concrete Sewer, 8 ft. 3 in. x 8 ft. 0 in. Double, Per Lin. Foot .....	..	.....	1	37.97
Concrete Sewer, 5 ft. 0 in. x 7 ft. 0 in. Double, Per Lin. Foot .....	..	.....	1	21.00
Concrete Sewer, 5 ft. 0 in. x 6 ft. 6 in. Double, Per Lin. Foot .....	..	.....	1	18.60
Concrete Sewer, 12 ft. 6 in. x 8 ft. 0 in., Per Lin. Foot ..	..	.....	1	39.73
Concrete Sewer, 12 ft. 0 in. x 8 ft. 0 in., Per Lin. Foot ..	..	.....	1	34.66
Concrete Sewer, 11 ft. 6 in. x 8 ft. 0 in., Per Lin. Foot ..	..	.....	1	34.98
Concrete Sewer, 11 ft. 3 in. x 8 ft. 0 in., Per Lin. Foot ..	..	.....	1	31.67
Concrete Sewer, 10 ft. 0 in. x 8 ft. 0 in., Per Lin. Foot ..	..	.....	1	26.95
Concrete Sewer, 9 ft. 6 in. x 8 ft. 0 in., Per Lin. Foot ..	..	.....	1	25.43
Concrete Sewer, 9 ft. 0 in. x 7 ft. 6 in., Per Lin. Foot ..	1	\$30.00	..	....
Concrete Sewer, 9 ft. 0 in. x 7 ft. 2 in., Per Lin. Foot ..	1	22.00	..	....
Concrete Sewer, 9 ft. 0 in. x 6 ft. 10 in., Per Lin. Foot ..	1	22.00	..	....
Concrete Sewer, 9 ft. 0 in. x 6 ft. 6 in., Per Lin. Foot ..	2	15.23	..	....
Concrete Sewer, 9 ft. 0 in. x 6 ft. 0 in., Per Lin. Foot ..	..	.....	1	27.43
Concrete Sewer, 8 ft. 6 in. x 7 ft. 0 in., Per Lin. Foot ..	..	.....	1	24.50
Concrete Sewer, 7 ft. 9 in. x 7 ft. 0 in., Per Lin. Foot ..	..	.....	1	25.00
Concrete Sewer, 7 ft. 0 in. x 8 ft. 0 in., Per Lin. Foot ..	..	.....	1	25.21
Concrete Sewer, 7 ft. 6 in. x 6 ft. 6 in., Per Lin. Foot ..	..	.....	1	15.60
Concrete Sewer, 7 ft. 0 in. x 6 ft. 0 in., Per Lin. Foot ..	..	.....	1	14.00
Concrete Sewer, 6 ft. 9 in. x 6 ft. 0 in., Per Lin. Foot ..	..	.....	1	22.36
Concrete Sewer, 6 ft. 0 in. x 6 ft. 0 in., Per Lin. Foot ..	1	14.00	1	13.00
Concrete Sewer, 5 ft. 3 in. x 6 ft. 0 in., Per Lin. Foot ..	..	.....	1	12.00
Concrete Sewer, 6 ft. 0 in. x 5 ft. 6 in., Per Lin. Foot ..	1	13.00	..	....
Concrete Sewer, 4 ft. 3 in. x 5 ft. 6 in., Per Lin. Foot ..	1	12.00	..	....
Concrete Sewer, 4 ft. 6 in. Diameter, Per Lin. Foot..	..	.....	1	8.50
Concrete Sewer, 4 ft. 0 in. Diameter, Per Lin. Foot..	1	12.00	2	8.92
Concrete Sewer, 3 ft. 6 in. Diameter, Per Lin. Foot..	1	10.00	1	19.00
Concrete Sewer, 3 ft. 9 in. Diameter, Per Lin. Foot..	1	12.00	..	....
Concrete Sewer, 3 ft. 3 in. Diameter, Per Lin. Foot..	..	.....	1	20.00
Concrete Sewer, 2 ft. 9 in. Diameter, Per Lin. Foot..	1	10.00	1	6.00
Concrete Sewer, 59 in. x 36 in., Per Lin. Foot.....	..	.....	1	12.00
Concrete Sewer, 54 in. x 68 in., Per Lin. Foot.....	..	.....	1	15.00
Concrete Sewer, 52 in. x 65 in., Per Lin. Foot.....	..	.....	1	14.00
Concrete Sewer, 50 in. x 62 in., Per Lin. Foot.....	1	11.00	..	....
Concrete Sewer, 45 in. x 60 in., Per Lin. Foot .....	..	.....	2	10.50
Concrete Sewer, 42 in. x 56 in., Per Lin. Foot.....	3	11.60	2	10.63
Concrete Sewer, 38 in. x 50 in., Per Lin. Foot.....	..	.....	3	11.23
Concrete Sewer, 40 in. x 53 in., Per Lin. Foot.....	..	.....	1	13.79
Concrete Sewer, 34 in. x 46 in., Per Lin. Foot.....	1	10.00	3	8.49
Concrete Sewer, 32 in. x 44 in., Per Lin. Foot.....	1	10.31	3	8.00
Concrete Sewer, 29 in. x 40 in., Per Lin. Foot.....	1	10.00	3	7.92
Pipe Sewer, 30 in. Diameter, Per Lin. Foot.....	2	8.00	12	8.43

TABLE IX.—Continued.

Pipe Sewer, 24 in. Diameter, Per Lin. Foot.....	4	5.93	11	6.99
Pipe Sewer, 20 in. Diameter, Per Lin. Foot.....	3	4.71	7	4.43
Pipe Sewer, 18 in. Diameter, Per Lin. Foot.....	8	4.13	20	4.39
Pipe Sewer, 15 in. Diameter, Per Lin. Foot.....	10	4.14	21	3.85
Pipe Sewer, 12 in. Diameter, Per Lin. Foot.....	19	3.84	29	3.63
Pipe Sewer, 10 in. Diameter, Per Lin. Foot.....	1	1.75	..	.....
Pipe Sewer, 8 in. Diameter, Per Lin. Foot.....	2	2.45	..	.....
Pipe Sewer, 12 in. Dia. Cast Iron, Per Lin. Foot....	..	.....	1	6.00
Pipe Sewer, 8 in. Dia. Cast Iron, Per Lin. Foot....	..	.....	1	5.00
Basin Connections, Per Lin. Foot.....	..	.....	19	1.36
Spurs, Each.....	17	1.27	25	1.28
Manholes, Each.....	20	68.19	31	60.09
Receiving Basin, Each.....	13	174.34	30	175.43
Inlets, Each.....	1	88.00	1	59.00
Class "A" Concrete, Per Cu. Yd. ....	..	.....	5	8.60
Class "B" Concrete, Per Cu. Yd.	5	6.36	17	5.44
Class "C" Concrete, Per Cu. Yd. ....	..	.....	15	4.63
Rubble Masonry in Mortar, Per Cu. Yd.	1	4.69	2	3.50
Dry Rubble Masonry, Per Cu. Yd.	2	2.64	4	1.25
Broken Stone, Per Cu. Yd. ....	..	.....	2	2.45
Rock Excavation, Per Cu. Yd.	17	2.40	34	3.12
Timber, Per M.	8	33.68	22	31.41
Piles, Per Foot.....	2	.18	6	.35
Steel Bars, Per Lb.	4	0.083	13	0.087
12 in. to 24 in. Drain Pipe, Per Foot.....	3	.71	18	1.69
6 in. Pipe as Risers including Supporting Concrete, Per Foot.....	1	1.00	3	2.96
Stone Ballast, Cu. Yds. ....	..	.....	3	1.50
Slope Pavement, Sq. Yds. ....	..	.....	2	.75

X. CEMENT TESTS MADE DURING THE YEAR 1913.
Seven (7) Day Tests.

Number of barrels sampled and tested.....	63
Number of bags sampled and tested.....	220,126
Number of briquets made for neat tests.....	6,111
Number of neat tests made.....	5,850

Long Time and Special Tests.

Number of briquets made for neat tests.....	1,008
Number of neat tests made.....	762
Number of briquets made for sand tests.....	3,933
Number of sand tests made.....	3,627

**XI. WORK IN CONNECTION WITH PREPARATION OF SEWERAGE
DISTRICT PLANS COMPLETED DURING THE YEAR 1913.**

Miles of Sewers.....	26.41
Drainage Plans.....	34
Lithograph Prints.....	120
Study Tracings.....	29
Investigations and Reports.....	38
Estimates.....	11
Plans and Sketches Submitted.....	56
Design of Special Sections.....	1
Index Maps, indicating various subjects.....	2
Surveys.....	7
Sewer Assessment Areas.....	35
Progress Tracings.....	19

TABLE XI.—Continued.

Progress Prints	267
Photo. Negatives	39
Photo. Prints	226
Miscellaneous Prints	118
Prints, temporary connections	22

XII. RELATIVE TO MAINTENANCE AND REPAIRS OF SEWERS AND DRAINS.

Statement of Various Classes of Work Performed During the Year 1913.

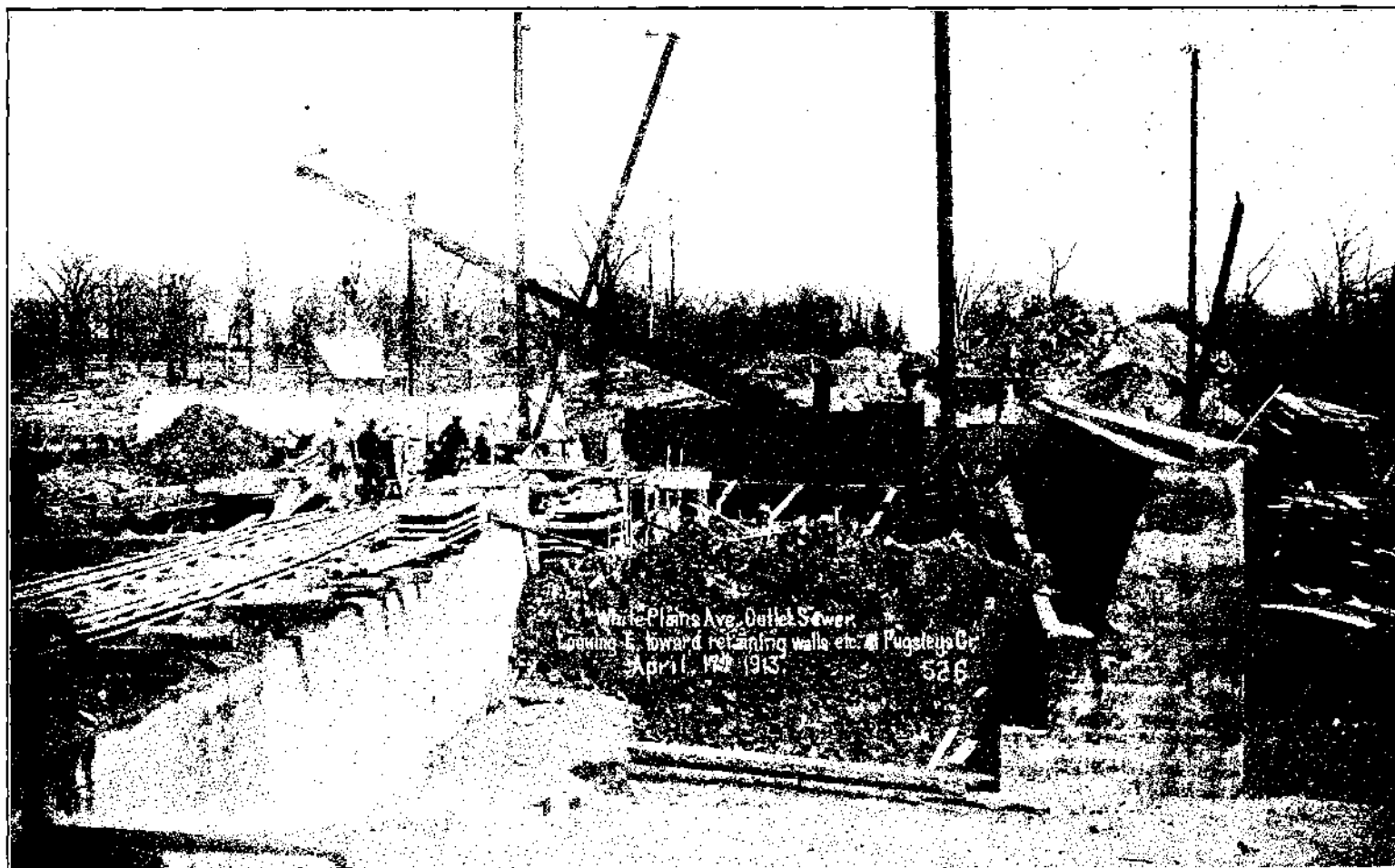
	Lin. ft. or No. Examined.	Lin. ft. or No. Cleaned.	Lin. ft. or No. Repaired.	Lin. ft. or No. Built.
Sewers	448,279	848,190	398	50
Receiving or Catch Basins	122	10,111	75	3
Manholes	575	1,484	257	4
Pipe Stone and Box Drains or Culverts	216	51,569	13,970	1,007
Open Drains or Ditches		109,180		30
Flush Tanks		12		
Loads of dirt carted				21,028
Cubic Yards of Excavation and Filling in				1,776
Linear Feet of Sheet piling and Shoring Driven and Drawn				215

XIII. HOUSE CONNECTIONS, ETC.

The following is a list of the work inspected by the Bureau of Sewers in the matter of laying connections from houses to sewers and miscellaneous work done by property owners or Corporations during the year 1913:

New house connections	1,322
Repairs to house connections	185
Temporary connections	24
Surface water drains laid	1
Leader connections	3
Disconnections from private drains and reconnecting to public sewer..	41
Continuing sewer connections from curb to house	9
Additional sewer connections	3
Reconnecting house sewers	1
Blocking of sewer connections	7
Replacing earthenware pipe with iron pipe	2
Replacing 6-inch pipe with 8-inch pipe (for house connection)	1
Lowering house sewer pipe	1
To build Catch Basin	1
To connect track drainage basin	2
To connect receiving basin	1
To connect subway manholes	2
Hydrant connections	95
Blow off connections	17
Total Inspections	1,718

Supplemental to the preceding tabulations, the following is presented in relation to the work of the Bureau of Sewers, Borough of The Bronx, for the year 1913:



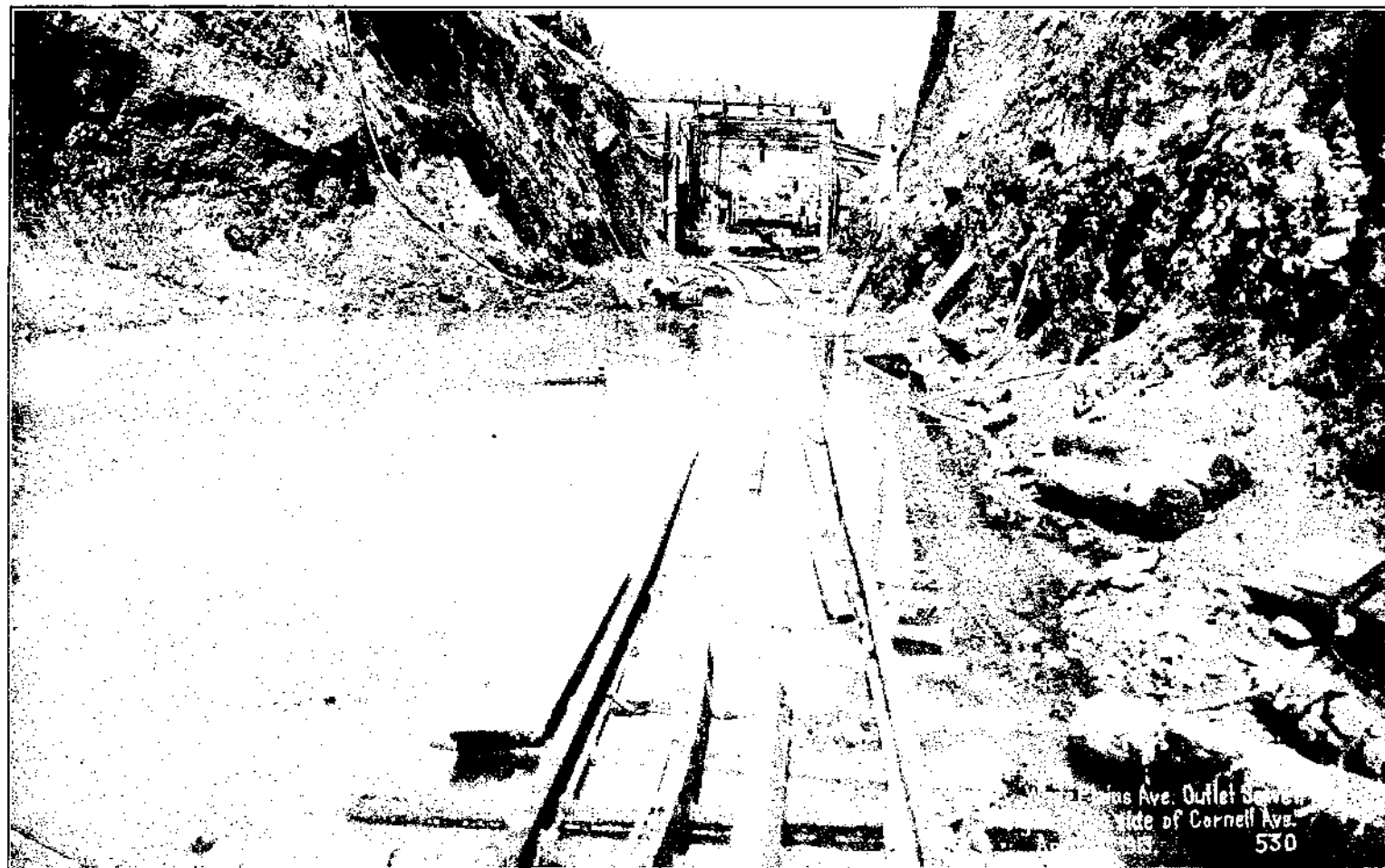


White Plains Ave. Outlet Sewer.
Looking W. into main line sewer at Pugsleys Cr.
April 12th 1913



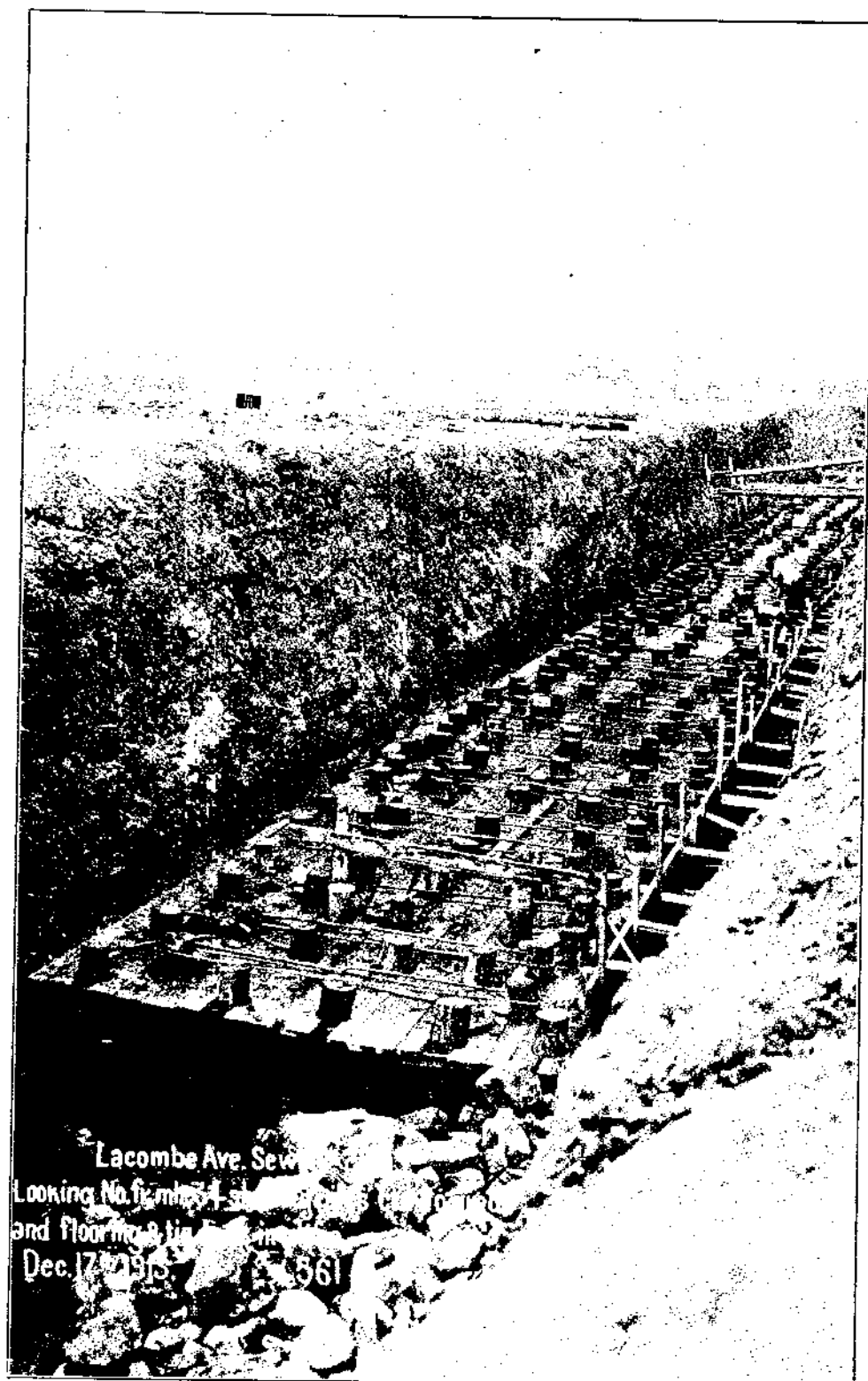
White Plains A.C. Outlet Sewer
 Looking S.W. from N.W. retaining wall, at
 opening of over-sewer in S.W. retaining wall
 at Pugsleys C. April 17th 1913.

527.





Inspection Party - September 11th 1913
White Plains Road Sewer-Bronx-New York City



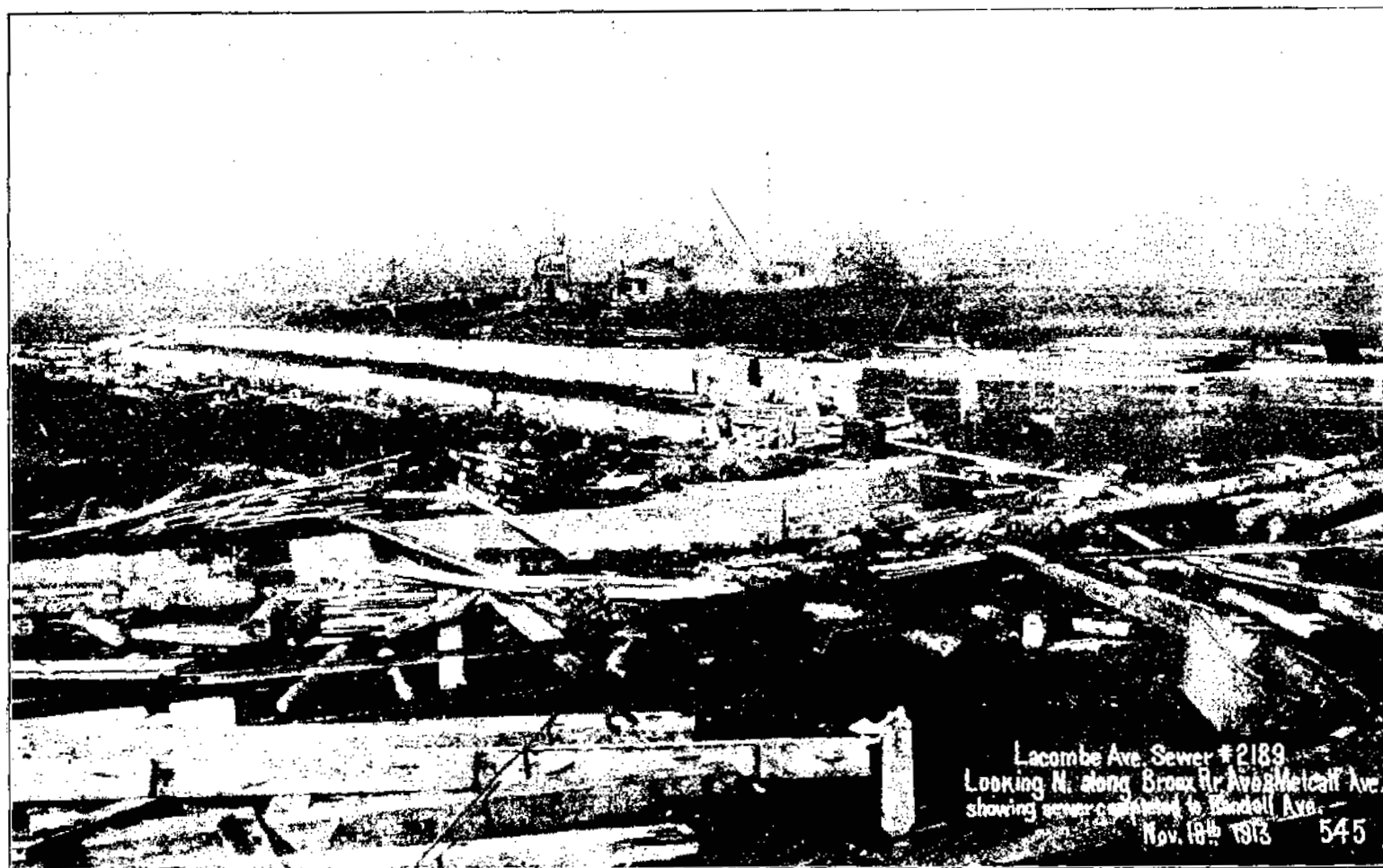
Lacombe Ave. Sewer
Looking N. from 34th St. to 36th St. 600 ft. long
and flooring 3 in. thick
Dec. 17, 1915. 1561

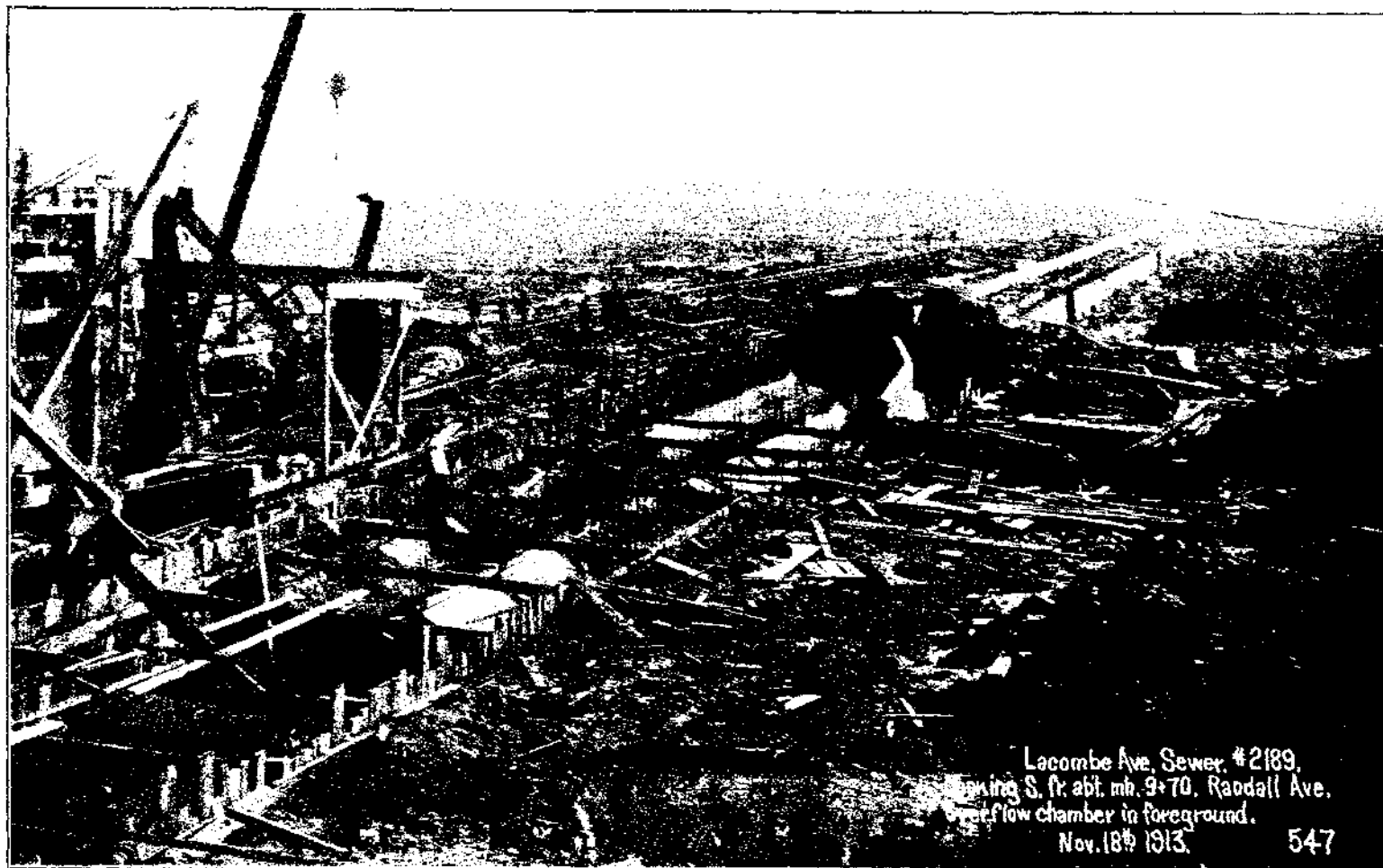


Lacombe Ave. Sewer. # 2163.

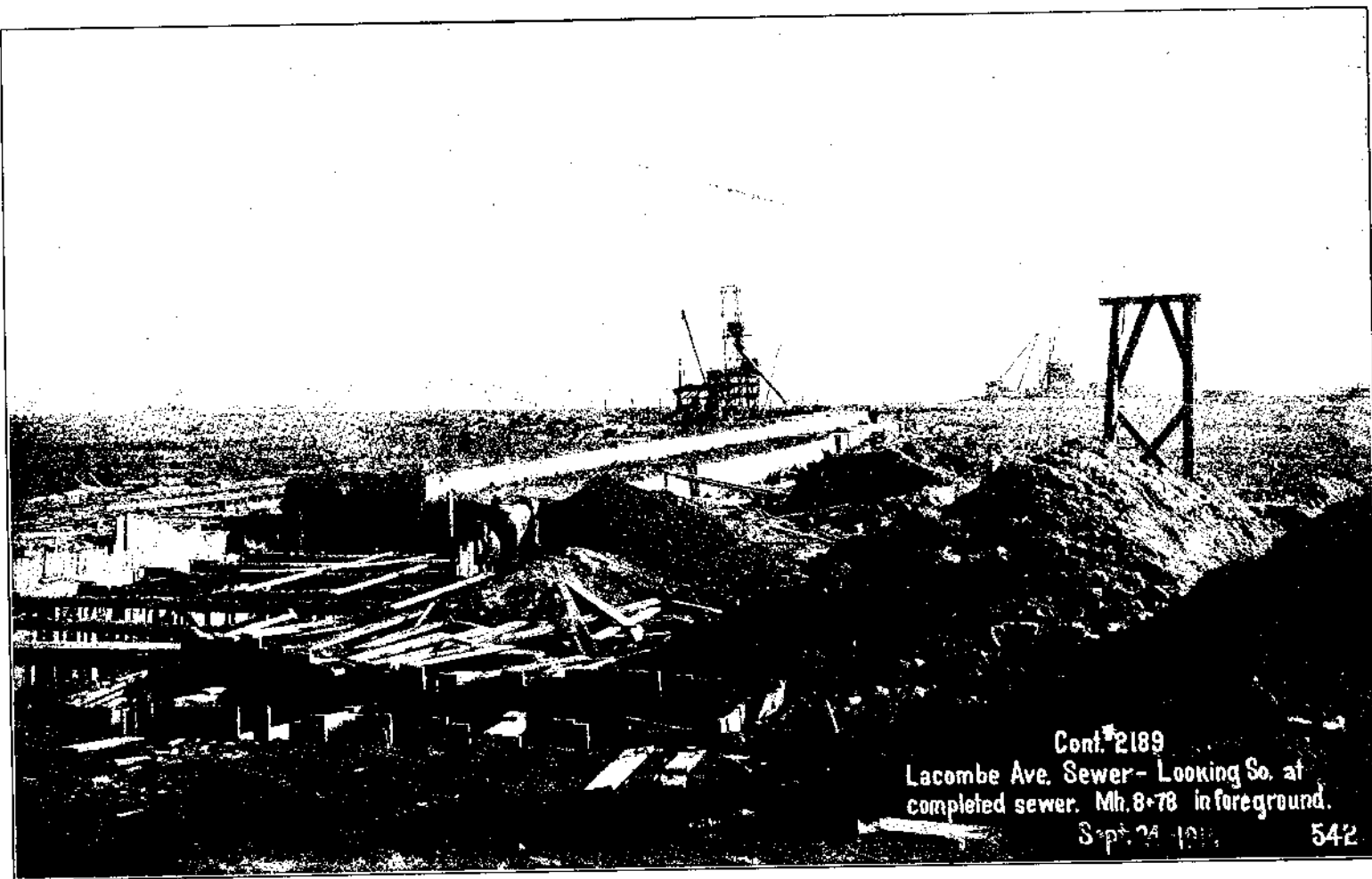
Looking So. Showing No. end of completed sewer

plan. 32-166. Dec. 17th 1913. 560



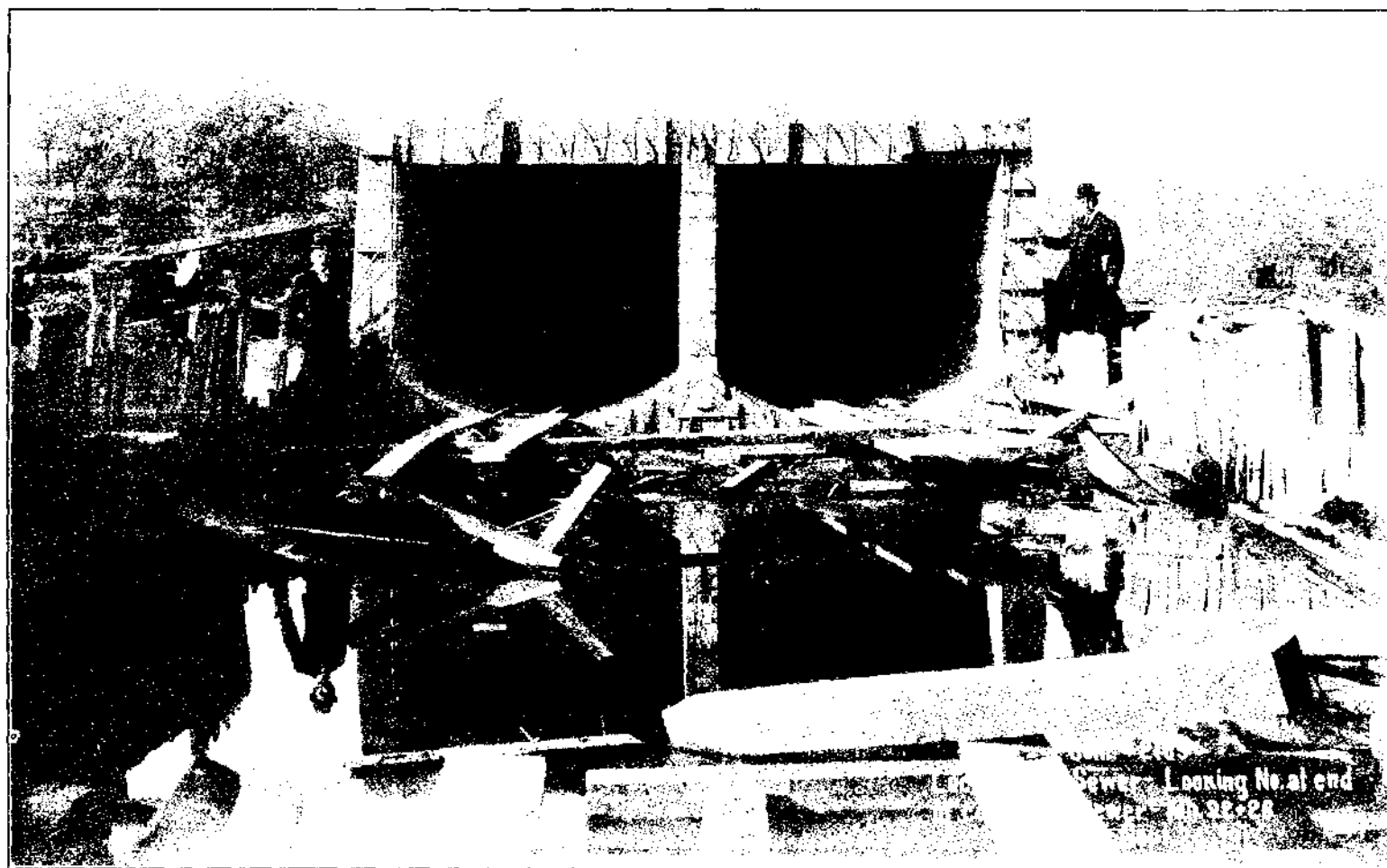


Lacombe Ave. Sewer #2189,
beginning S. fr. abt. mh. 9+70, Radcliff Ave.
Overflow chamber in foreground.
Nov. 18th 1913.



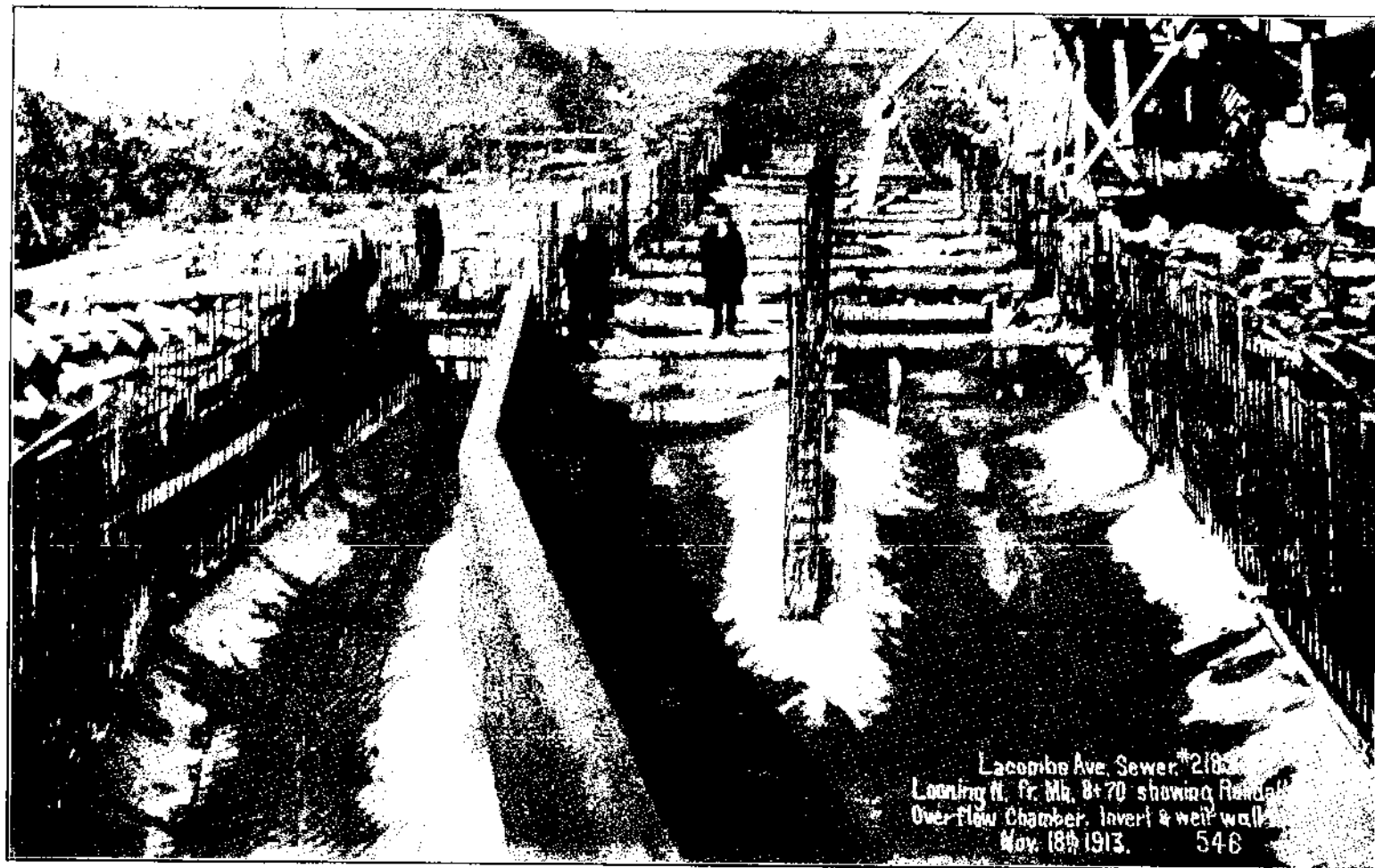
Cont. #2189
Lacombe Ave. Sewer - Looking So. at
completed sewer. Mh. 8+78 in foreground.

Sept. 24, 1911. 542

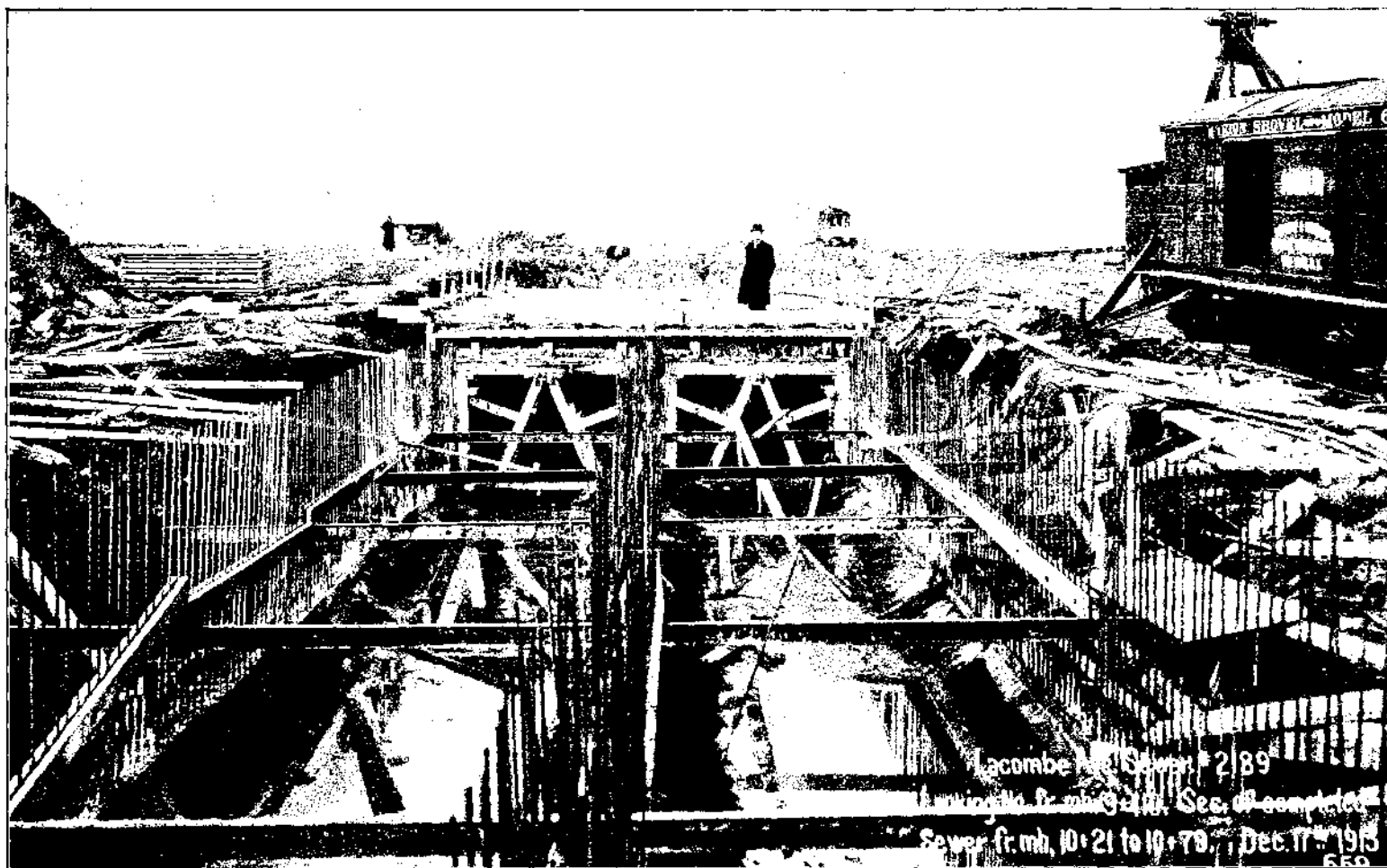




Con. #2189
Lacombe Ave. Sewer - Looking No. from
Mh. 22-100± showing completed sewer
from Mh. 22+26 to 24+140 540
Sept. 24-1913

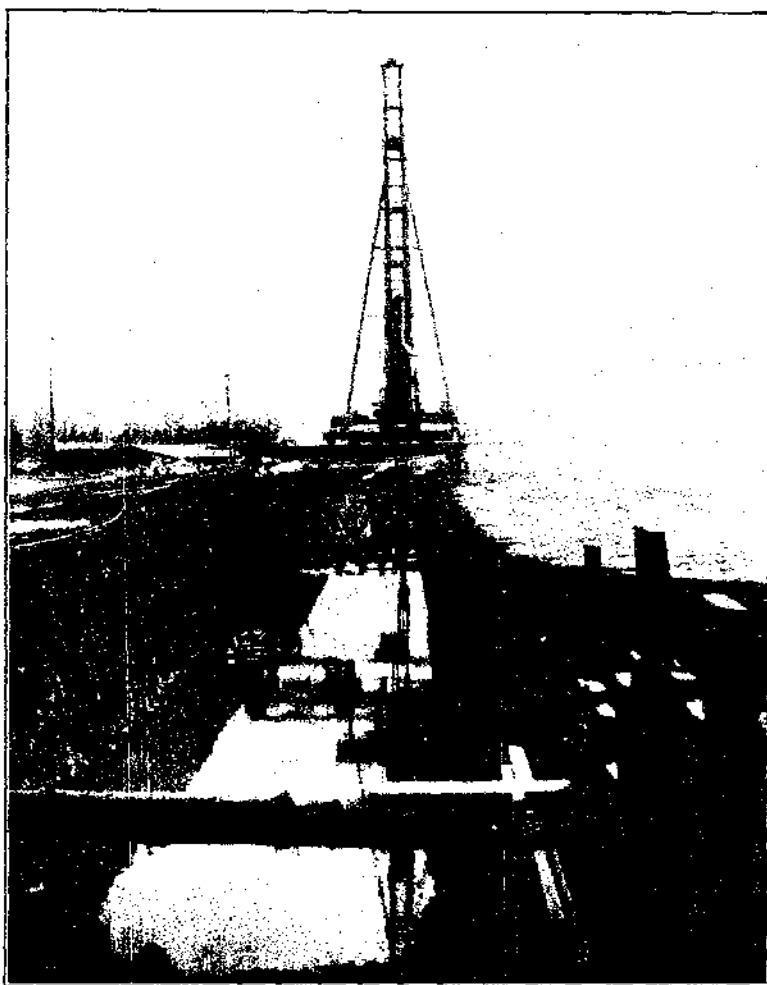


Lacombe Ave. Sewer #2183
Looking N. fr. Sta. 8+70 showing Randall
Over-flow Chamber, Invert & well walk
Nov. 18th 1913. 546





VIEW AT SEWARD AVENUE, DECEMBER 29, 1913.



LACOMBE AVENUE SEWER. LOOKING SOUTH FROM WESTCHESTER AVENUE.
DECEMBER 3, 1913.

Sewer Construction.

The contract for constructing the Outlet sewer in WHITE PLAINS ROAD, between the East River and East 152nd Street; and in EAST 152ND STREET, between White Plains Road and Avenue B, and in AVENUE B, between East 152nd Street and Lafayette Avenue (East 156th Street); and in LAFAYETTE AVENUE (East 156th Street), between Avenue B and Avenue A, was completed during the year 1913. The total cost of this Contract was \$591,398.71.

Illustrations from Numbers 1 to 4 accompanying this report show conditions on this contract at various times during the year 1913.

Illustration Number 5 shows a party, consisting of most of the Consulting Engineers and the Chief Engineers of various Bureaus in the City and the Chief Engineer of the Board of Estimate and Apportionment and others, making an inspection trip of this sewer upon the completion of the same. The watershed drained by this sewer is approximately 7,925 acres. The maximum section of sewer built on this contract is equivalent in capacity to a circle 15 feet 6 inches in diameter, and will discharge about 423,000 gallons per minute.

The contract for constructing a main outlet sewer in Westchester Avenue, between Zerega Avenue and Westchester Square; and in Westchester Square, between Westchester Avenue and Walker Avenue, was completed during the year 1913. The total cost of this contract was \$81,815.43.

This sewer is the continuation of the main Outlet Sewer in Zerega Avenue and eventually will be extended northerly to Blondell Avenue and thence up Blondell Avenue to the New York, New Haven and Hartford Railroad Company's property and across and under such property and up into the middle portion of the district lying east of the Bronx River and eventually up to the southerly limits of the former Village of Williamsbridge.

The contract for constructing sewers, etc., in Walker Avenue, between Westchester Square and Overing Street; and in Benson Avenue, between Westchester Square and Walker Avenue; and in Overing Street, between Westchester Square and Walker Avenue; and in St. Peters Avenue, between Westchester Avenue and Walker Avenue; and in Zerega Avenue, between Westchester Avenue and Glebe Avenue; and in Tratman Avenue, between Zerega Avenue and Benson Avenue; and in Frisby Avenue, between Zerega Avenue and Walker Avenue; and in Glebe Avenue, between Rowland Avenue and Overing Street; and in Maclay Avenue, between St. Peter's Avenue and Benson Avenue, was completed during the year 1913. The total cost of this contract was \$64,926.18.

The contract for constructing Sewer, etc., in Parker Street, between Westchester Avenue and Castle Hill Avenue, was completed during the year 1913. The total cost of this contract was \$68,304.32.

The construction of sewers in the Village of Unionport has practically been completed during the year 1913.

The contract for constructing sewers, etc., in East 177 Street, from Pugsley Avenue to Leland Avenue; and in the south side of East 177th Street, from Leland Avenue to Theriot Avenue; and in Theriot Avenue, between E. 177th Street and Westchester Avenue; and in Theriot Avenue, between East 177th Street and Westchester Avenue; and in Westchester Avenue, between Pugsley Avenue and Theriot Avenue; and in the Plaza at the intersection of East 177th Street and Westchester Avenue, was carried on vigorously during the year 1913. The total value of the work done on this contract up to the end of 1913 was \$89,758.75, and the value of the work done in 1913 on this said contract was \$73,764.25.

Work on the contract for constructing sewers and appurtenances in White Plains Road, between East 177th Street and Walker Avenue; and in Wood

Avenue, between White Plains Road and Beach Avenue; and in McGraw Avenue, between White Plains Road and East 177th Street; and in East 177th Street, between McGraw Avenue and Theriot Avenue; and in Leland Avenue, between McGraw Avenue and Wood Avenue; and in Theriot Avenue, between East 177th Street and Wood Avenue, has been carried on vigorously during the year 1913, and the contract is nearly completed. The total value of the work done up to the end of 1913 is \$65,888 and the work done during the year 1913 is \$60,467.

The contract for constructing sewers and appurtenances in Castle Hill Avenue, between Parker Street and Walker Avenue; and in Walker Avenue, between Castle Hill Avenue and Silver Street, was completed during the year 1913, and the total cost of the contract was \$35,501.21.

In addition to the above, many contracts for sewers are in progress, covering the remaining street in the former Village of Westchester and it is expected before the end of the coming year that most of these will be completed.

The contract for constructing the Outlet Sewer in Lacombe Avenue, between Bronx River and Bronx River Avenue; and in Bronx River Avenue, between Lacombe Avenue and Metcalf Avenue; and in Metcalf Avenue, between Bronx River and East 177th Street, was let during the year to Rodgers & Hagerty, and work on the same progressed vigorously. The contract price is \$568,947.29.

Photographs numbered from 6 to 16 illustrate the condition on various portions of the work during various times during the year 1913.

The area tributary to the Metcalf Avenue Sewer north of East 177th Street and Bronx Park Avenue is about 800 acres. There will be a storm overflow located at East 177th Street and Bronx Park Avenue. This overflow will discharge three-quarters of the storm flow or about 575 cubic feet per second and the amount carried on at this point will be about 165 cubic feet per second or about six times the ultimate dry weather flow from the 800 acres. Between the East 177th Street overflow and the overflow which is located at Lacombe Avenue, there is an increment of 790 acres. The total drainage area therefore tributary to the Lacombe Avenue overflow is 1,590 acres, of which 247 acres is in the Randall Avenue drainage area.

There is a branch coming into the Metcalf Avenue Sewer at Randall Avenue, and on this Randall Avenue Branch there will also be an overflow which will discharge three-quarters of the storm flow or about 166 cubic feet per second and the amount carried on through the Randall Avenue sewer will be 55 cubic feet per second or about nine times the dry weather flow plus the storm flow from the increment area of 52 acres, between Lafayette Avenue and Metcalf Avenue.

The Lacombe Avenue overflow is designed to discharge seven-eighths of the increment storm flow or about 355 cubic feet per second, and the amount carried on will be about 317 cubic feet per second or about six times the ultimate dry weather flow.

The contract for rebuilding the sewers, etc., in Tinton Avenue, between East 156th Street and East 165th Street; and in East 160th Street, between Tinton Avenue and Forest Avenue; and in East 163th Street, between Tinton Avenue and Forest Avenue; in Forest Avenue, between East 166th Street and Home Street, was let during the year to the John J. Hart Contracting Company and the contract price thereof was \$59,620.30. Work on this contract progressed vigorously and the contract was practically completed during the year 1913.

There is submitted also with this report a copy of a report of the investigation made in the matter of rainfall and run-off on the Tinton Avenue Watershed which was completed during the year 1913.

Drainage Plans.

The following drainage plans have been prepared by the Bureau of Sewers and adopted by the Board of Estimate and Apportionment during the year 1913.

Sewerage District No. 43-S, adopted by the Board of Estimate and Apportionment, May 1, 1913. This provides for sewers in the territory bounded approximately by Bronx and Pelham Parkway, N. Y., N. H. & H. R. R., Chesham Avenue and Munroe Avenue, and contains about 296 acres.

Sewerage District No. 43-U, adopted by the Board of Estimate and Apportionment, April 17, 1913, provides a system of separate sewers and drains for the district bounded approximately by Burke Avenue, Hutchinson River, Bushnell Avenue and Gunther Avenue, and the area affected contains about 279 acres.

Modified plan for Sewerage District No. 43-K-3, adopted by the Board of Estimate and Apportionment, December 4, 1913. This plan affects the sewers in the vicinity of Sacket Avenue and Bogart Avenue and relates to about 174 acres.

Modified plan for Sewerage District 43-E-3, adopted by the Board of Estimate and Apportionment, November 6, 1913. This plan modifies the sewers in Williamsbridge Road, between West Farms Road and Eastchester Road and affects about 6 acres.

Modified plan for Sewerage District No. 43-B-5, adopted by the Board of Estimate and Apportionment, September 25, 1913, and provides for a receiving basin at Westchester Avenue and Overing Street.

Modified plan for Sewerage District No. 43-G-1, adopted by the Board of Estimate and Apportionment, January 23, 1913. This plan provides high level sewer in Metcalf Avenue, between Beacon Avenue and East 177th Street.

Modified plan for Sewerage 43-G-3, adopted by the Board of Estimate and Apportionment, October 9, 1913. The plan modifies the sewers in the vicinity of 174th Street and Stratford Avenue and affects about 30 acres.

Robertson Street, adopted by the Board of Estimate and Apportionment, November 6, 1913. This plan provides a storm water drain in Robertson Place, between 242nd Street and East 243rd Street, and affects 8 acres.

Modified plan for Sewerage District No. 33-G-5, adopted by the Board of Estimate and Apportionment, December 4, 1913, and modifies the sewer in Kinderman Place, between Webster Avenue and Brook Avenue, and affects 2 acres.

Modified plan for Sewerage District 33-E-5, adopted by the Board of Estimate and Apportionment, May 15, 1913. This plan modifies the sewer in Monterey Avenue, between 178th Street and 179th Street, and affects about 2 acres.

Modified plan for Sewerage District No. 39-D-2, adopted by the Board of Estimate and Apportionment, July 10, 1913. This plan modifies the sewers in the area bounded approximately by Fieldston Road, West 244th Street, Waldo Avenue and West 238th Street and contains 16 acres.

Modified plan for Sewerage District 42-J-2, adopted by the Board of Estimate and Apportionment, November 20, 1913, establishes a receiving basin at East 179th Street and Belmont Avenue.

Modified plan for Sewerage District No. 36-D-2, adopted by the Board of Estimate and Apportionment, May 15, 1913. This plan provides for the exten-

sion of the Tiffany Street Trunk Sewer to the United States Pierhead Line and affects about 915 acres.

Sewerage District No. 43-T, fixing the sewers in the territory bounded by the City of Mt. Vernon, Hutchinson River, Hammersley Avenue, Palmer Avenue, Tillotson Avenue, Hunter Avenue, Hollers Avenue, Varian Avenue, and Harper Avenue, and comprises an area of about 346 acres.

Modified plan for Sewerage District No. 43-4, which provides for the extension of the White Plains Avenue Trunk Sewer, from the Bulkhead Line to the new U. S. Pierhead Line, and affects a drainage area of about 7,500 acres.

Modified plan for Sewerage District No. 43-F-2. This re-locates the storm water overflow in the Bronx River at Lacombe Avenue, and the area affected is about 1,585 acres.

Modified plan for Sewerage District No. 36-C-2. This provides a sewer to carry the dry weather flow from the existing sewer in Truxton Street, from the bulkhead line to the new U. S. Pierhead Line, and affects an area of about 225 acres.

Modified plan for Drainage Sewerage District No. 39-C-2. This modifies the sewer in West 254th Street, between Valles Avenue and Fieldston Road, and affects an area of about 6 acres.

Modified plan for Sewerage District No. 39-B-2. This modifies the sewer in West 238th Street, between Broadway and Putnam Avenue, and affects an area of about 8 acres.

Modified plan for Sewerage District No. 42-I-2. This modifies the sewers in Lowell Street, between Whitlock Avenue and Longfellow Avenue, and affects an area of about 2 acres.

Modified plan for Sewerage District No. 43-G-1. This provides for high level sewers in Metcalf Avenue, between Beacon Avenue and East 177th Street.

Modified plan for Sewerage District No. 43-I-1. This establishes receiving basins at the intersection of Bear Swamp Road and Neill Avenue.

Modified plan for Sewerage District No. 39-A-2. This establishes a receiving basin at the intersection of Bailey Avenue and West 231st Street.

Modified plan for Sewerage District No. 43-C-2. This establishes a receiving basin at the intersection of Wood Avenue and Theriot Avenue.

Modified plan for Sewerage District No. 39-S. This affects the sewers in the territory bounded approximately by Van Cortlandt Park, Mosholu Parkway South, Sedgwick Avenue, West 238th Street and Broadway, and comprises an area of about 90 acres.

Modified plan for Sewerage District No. 37-J-2. This affects the sewers in the territory bounded approximately by Jerome Avenue, Evelyn Place, Aqueduct Avenue, and West 184th Street and covers an area containing about 7 acres.

Modified plan for Sewerage District No. 33-D-5. This affects the sewers in the territory bounded approximately by Gun Hill Road, Bainbridge Avenue, 210th Street and DeKalb Avenue, comprising an area of about 4 acres.

The following drainage plans have been forwarded to the Board of Estimate and Apportionment for approval and adoption, but have not been as yet adopted by said Board.

Sewerage District No. 43-V. This plan provides a lateral system of sewers for the territory bounded approximately by Westchester Avenue, Westchester Creek, Lafayette Avenue and Zerega Avenue, and contains about 94 acres.

Modified plan for Sewerage District No. 43-H-1. This plan provides for the continuation on the sewer in Adams Street, between Bronx Park Avenue and Morris Park Avenue, and affects 15 acres.

Modified plan for Sewerage District No. 43-I-2, provides for the rearrangement of the sewers in Boston Road, between Bronx and Pelham Parkway and Arnow Avenue, and affects 48 acres.

Modified plan for Sewerage District No. 43-A, modifies the sewers in the vicinity of Herschell and Halsey Streets, and the area affected is about 8 acres.

Modified plan for Sewerage District No. 43-G-2, modifies the sewers in the vicinity of Devoe Avenue and Wyatt Avenue and affects about 24 acres.

Modified plan for Sewerage District No. 43-J-1, rearranges the sewers in Boston Road, between Arnow Avenue and Burke Avenue, and affects about 35 acres.

Modified plan for Sewerage District No. 43-L-1, rearranges the sewers in Boston Road and vicinity, between Burke Avenue and Corsa Avenues, and affects 418 acres.

Modified plan for Sewerage District No. 43-P-1, rearranges the sewers in Boston Road, between Corsa and Boller Avenues, and affects 109 acres.

Modified plan for Sewerage District No. 43-J-2, modifies the sewers in the area bounded approximately by Burke Avenue, Boston Road, Radcliff Avenue and White Plains Road, and affects about 107 acres.

Modified plan for Sewerage Districts Nos. 31-D-2 and 33-I-5, modifies the sewers in McClelland Street, between Morris Avenue and Findlay Avenues, and affects 2 acres.

Modified plan for Sewerage Districts Nos. 33-H-5 and 38-V, establishes receiving basins in the vicinity of Creston Avenue and East 197th Street.

Modified plan for Sewerage District No. 32-H, modifies the sewer system in the area bounded approximately by East 141st Street, Willis Avenue, N. Y., N. H. & H. R. R. R. Yards and Third Avenue, and which contains about 113 acres.

Modified plan for Sewerage District No. 36-F-2, establishes a receiving basin at Intervale Avenue and Chisholm Street.

Modified plan for Sewerage District No. 33-J-5. This plan modifies the sewer in East 185th Street, between Washington Avenue and Third Avenue.

Modified plan for Sewerage District No. 33-K-5, establishes receiving basins in the vicinity of Jerome Avenue and East 204th Street.

Modified plan for Sewerage Districts Nos. 33-F-5 and 34-K. This plan modifies the sewers in the vicinity of East 149th Street and Trinity Avenue, and affects an area of about 39 acres.

Modified plan for Sewerage District No. 39-E-2, modifies the sewers in the territory bounded approximately by Tyndall Avenue, West 261st Street, Broadway and West 259th Street, and affects 17 acres.

Modified plan for Sewerage District No. 42-M-2. This plan modifies sewers in the vicinity of Bryant Avenue and East 167th Street, and affects about 4 acres.

Woodlawn Heights Sanitary Outlet Sewer plan provides intercepting sewer which discharges into the Bronx Valley Sewer and drains about 366 acres.

-Cement Laboratory.

During the year 1913 there were 5,850 tests made for tensile strength for work under construction. This represented samples taken from 220,378 bags of cement.

There were also 762 long time tests made for tensile strength. There are submitted with this report charts showing graphical illustrations of the result of some of the long time tests made on various brands of cement. These charts show a continuation of the chart which was submitted for the year 1912, together with some tests that were started in 1911 and 1913.

Maintenance of Sewers, Receiving Basins, Drains, etc.

The work of maintenance of Sewers, Receiving Basins, Drains, Culverts, etc., in the Borough of The Bronx, has been carried on continuously and diligently during the year 1913.

There have been 660 complaints received during the year of the stopping of sewers, drains, culverts, and open ditches, or the overflowing of receiving basins, and all of these complaints have been promptly attended to and the sewers, basins, etc., relieved where such necessity arose.

In addition to caring for the complaints received, the regular work of cleaning receiving basins and sewers has been carried on steadily, and also the maintaining of the open drains, ditches, culverts, etc., in the districts not provided with permanent sewers.

During the year, there have been 805,959 linear feet of pipe sewer of various sizes cleaned in the Borough of The Bronx, at an average cost of 1.7 cents per linear foot. This is a slight reduction from the cost of last year, which was 1.9 cents per linear foot. I would call attention to the fact that during the year 1912 there were 577,448 linear feet of pipe sewers cleaned. Attention is therefore called to the fact that during the year 1913 the amount of Pipe Sewers cleaned exceeded the amount cleaned during the previous year by 228,511 linear feet.

There have been 42,231 linear feet of Concrete Sewer cleaned during the year, at an average cost of 21 cents per linear foot. During the year 1912 there were only 36,181 linear feet of Concrete Sewers cleaned, at an average cost of 13 cents per linear foot. The increased cost is due to the fact that larger sewers have been cleaned.

There were 10,385 linear feet of Pipe Drains or Culverts cleaned during the year, at an average cost of 11 cents per linear foot. The average cost of cleaning Pipe Drains or Culverts during the year 1912 was 10 cents per foot, and only 6,219 linear feet were cleaned in 1912.

There were 36,577 linear feet of Stone Drains or Culverts cleaned during the year, at an average cost of 14 cents per linear foot, and during the year 1912 there were 48,063 linear feet of Stone Drains or Culverts cleaned, at an average cost of 11 cents per linear foot.

There have been 4,607 linear feet of Box Drains or Culverts cleaned during the year, at an average of 9 cents per linear foot, while during the year 1912 there were 5,793 linear feet of Box Drains or Culverts cleaned, at an average cost of 10 cents per linear foot.

There have been 109,180 linear feet of Open Drains or Ditches cleaned and opened during the year, at an average cost of 2.7 cents per linear foot, while during the year 1912 there were 120,818 linear feet of Open Drains or Ditches cleaned, at an average cost of 3 cents per linear foot.

There have been cleaned in the Borough of The Bronx, during the year 1913, 10,111 Receiving Basins, at an average cost of \$2.67 for each cleaning, and during the year 1912 there were only 9,567 receiving basins cleaned, at an average cost of \$2.71 per basin. This shows a material increase in the number of receiving basins cleaned during the year, and a reduction of the cost of cleaning the same.

In this connection, I would like to call attention to the fact that during the year 1910, there were 7,525 receiving basins cleaned, at an average cost of \$3.57 per basin; and more especially would I call attention to the fact that during the year 1909 there were only 3,571 receiving basins cleaned, at an average cost of \$4.60 per basin.

I would like to compare, therefore, the number of basins cleaned during the year 1909, and the average cost of each, with the number of basins cleaned during the year 1913 and the average cost of each:

Basins cleaned during the year 1909—3,571; at an average cost of \$4.60 per basin.

Basins cleaned during the year 1913—10,111; at an average cost of \$2.67 per basin.

The effect of this has been to obviate almost entirely the complaints of receiving basins overflowing, and it is unusual now in this Bureau to have basins blocked or obstructed, and I have been able to clean 10,111 receiving basins at an average cost of \$2.67, or a total cost of \$26,977.97; whereas, during the year 1909 the cleaning of 3,571 receiving basins, at an average cost of \$4.60, meant the expenditure of \$16,426.60. Thus, for the expenditure of about two-thirds more, we have been able to clean practically three times as many basins.

There were in existence at the end of the year 1913, 3,735 receiving basins in The Borough of The Bronx. We have cleaned during the year, as I have stated, 10,111 basins, which means that each basin has been cleaned on the average about two and one-half times. This does not hold absolutely, for the reason that some basins will require cleaning many times, whereas other basins require cleaning very seldom during the year.

Respectfully submitted,

JOSIAH H. FITCH,

New York, December 31, 1913.

Engineer of Sewers.

MAP

SUMMARY OF AMOUNT AND UNIT COST OF WORK DONE UNDER MAINTENANCE

ITEMS	CLASS OF WORK	QUARTER ENDING MARCH 31 ST 1913						QUARTER ENDING JUNE 30 TH 1913						QUARTER ENDING SEPTEMBER 30 TH 1913						QUARTER ENDING DECEMBER 31 ST 1913						SUMMARY OF FOUR QUARTERS 1913..						
		LINEAR FT. OR N°	PERSONAL SERVICE	CARTS	MATERIALS	TOTAL COST	UNIT COST	LINEAR FT. OR N°	PERSONAL SERVICE	CARTS	MATERIALS	TOTAL COST	UNIT COST	LINEAR FT. OR N°	PERSONAL SERVICE	CARTS	MATERIALS	TOTAL COST	UNIT COST	LINEAR FT. OR N°	PERSONAL SERVICE	CARTS	MATERIALS	TOTAL COST	UNIT COST	LINEAR FT. OR N°	PERSONAL SERVICE	CARTS	MATERIALS	TOTAL COST	UNIT COST	
PIPE SEWERS LINEAR FEET	EXAMINATION	101724	120.77	50.40		189.17	.0017	142281	203.77	91.26		295.03	.0021	133828	163.15	70.49		233.64	.0017	31766	92.24	40.48		132.72	.0042	409599	579.93	261.63		841.56	.0021	
	CLEANING	200840	2431.77	1119.82		3551.59	.0176	188724	1922.34	1135.83		3058.17	.0162	207550	2277.77	1196.73	6.00	3480.50	.0167	208839	2469.36	1259.34		3728.70	.0178	805959	9101.24	4711.72	6.00	13818.96	.0171	
	REPAIRING	145	320.99	77.64	51.66	450.29	3.11	27	79.47	18.37	11.69	109.53	4.06	60	106.25	33.00	23.34	162.59	2.71	109	480.89	115.24	54.23	650.36	5.97	341	987.60	244.25	140.92	1372.77	4.03	
	BUILDING							36	52.16	13.88	18.77		84.81	2.36							14	6.12	1.50		7.82	.5443	50	58.28	16.38	18.77	92.43	1.85
BRICK OR CONCRETE SEWERS LINEAR FEET	EXAMINATION	4430	6.06	1.82		7.88	.0018	9410	13.19	5.11		18.30	.0019	20500	20.66	10.83		31.49	.0015	4340	14.06	6.91		20.97	.0049	38680	5397	24.67		78.64	.0020	
	CLEANING	10780	2203.79	503.68		2707.47	.2512	11320	2080.57	423.50		2504.07	.2212	9445	1354.30	351.00	1.83	1707.13	.1807	10686	1433.99	377.66		1811.65	.1635	42231	7072.65	1655.84	1.83	8730.32	.2087	
	REPAIRING																															
	BUILDING	25	306.28	73.69	21.06	401.03	16.00							6	12.10	3.00	5.04	20.14	3.36	26	146.00	29.25	16.32	191.57	7.37	57	464.38	105.94	42.42	612.74	10.75	
PIPE DRAINS OR CULVERTS LINEAR FEET	EXAMINATION							12	38.34	3.38		41.72	3.48													12	38.34	3.38		41.72	3.48	
	CLEANING	2101	248.05	43.86		291.91	.1389	3786	329.53	57.92		387.45	.1023	2488	247.50	32.81		280.31	.1127	2010	186.00	29.37		215.37	.1071	10385	1011.08	163.96		1175.04	.1131	
	REPAIRING	49	57.19	10.87	5.76	73.82	1.51	3	11.25	3.00		14.25	4.75	92	289.63	55.49	40.66	385.78	4.19	10	.84	.38		1.22	.1220	154	358.91	69.74	46.42	475.07	3.09	
	BUILDING													38	49.50	18.00		67.50	1.78	45	86.62	7.50	19.07	53.18	1.18	83	76.12	25.50	19.07	120.69	1.46	
STONE DRAINS OR CULVERTS LINEAR FEET	EXAMINATION	75	1.00			1.00	.0133	90	2.00			2.00	.0222							4	8.19	.75		8.94	2.24	169	11.19	.75		11.94	.0706	
	CLEANING	7273	896.38	150.42		1046.80	.1431	10618	1003.38	144.71		1148.08	.1081	8853	1061.14	216.32		1277.46	.1444	9833	1520.60	244.15		1764.75	.1795	36577	4481.50	755.60		5237.10	.1432	
	REPAIRING	2901	1239.22	206.08	134.11	1579.41	.5444	4120	1605.96	288.39	164.18	2058.47	.4996	2389	1043.46	251.98	104.25	1399.69	.5860	2412	945.88	204.20	257.13	1407.21	.5834	11822	4834.62	850.59	659.67	6444.78	.5451	
	BUILDING	86	100.87	13.88	3.60	118.35	1.37	29	54.00	9.75	7.96	71.71	2.47	125	205.56	43.89	9.49	258.94	2.07	53	50.91	20.44		71.35	1.35	293	411.34	87.96	21.05	520.35	1.78	
BOX DRAINS OR CULVERTS LINEAR FEET	EXAMINATION													35	1.00			.2860								35	1.00			1.00	.0286	
	CLEANING	1016	77.38	9.36		86.74	.0853	1548	127.90	22.29		150.19	.0970	671	61.87	18.25		80.12	.1200	1372	106.41	15.98		122.39	.0892	4607	373.56	65.88		439.44	.0953	
	REPAIRING	208	41.90	10.75	30.84	83.49	.4014	455	110.67	23.69	82.71	217.07	.4771	622	205.56	68.43	102.46	376.45	.6052	709	178.59	37.56	76.30	292.45	.4125	1994	536.72	140.43	292.31	969.48	.4862	
	BUILDING	174	46.45	10.87	46.60	103.92	.5971	272	135.49	22.50	106.00	263.99	.9691	64	49.87	9.80	30.60	89.47	1.40	121	53.85	12.07	62.89	128.81	1.06	631	285.26	54.44	246.09	585.79	.9293	
OPEN DRAINS OR DITCHES LINEAR FEET	EXAMINATION																															
	CLEANING	27502	664.03	77.28		741.31	.0269	31496	749.47	98.17		847.64	.0269	13962	428.01	72.56	1.50	502.07	.0360	36220	780.41	86.83		867.24	.0239	109180	2621.92	334.84	1.50	2958.26	.0271	
	REPAIRING																															
	BUILDING													30	7.25	3.00		10.25	.3420							30	7.25	3.00		10.25	.3416	
RECEIVING OR CATCH BASINS NUMBER	EXAMINATION	67	8.87	1.64		10.51	.1567	47	5.21	.82		6.03	.1282	6	4.11	.286		6.97	.116	2	1.89	.88		2.77	.139	122	22.08	6.20		28.28	.2154	
	CLEANING	2323	2335.45	3882.28		6217.73	2.67	2588	2719.87	4200.28		6920.15	2.67	2503	2587.30	4118.94		6706.24	2.67	2697	2706.10	4427.75		7133.85	2.65	10111	10348.72	16629.25		26977.97	2.67	
	REPAIRING	12	48.67	5.57	14.92	69.16	5.76	19	39.07	10.00	24.78	73.85	3.89	22	102.98	17.25	26.09	146.32	6.65	22	166.46	37.75	14.76	218.97	9.95	75	357.18	70.57	80.55	508.30	6.77	
	BUILDING	1	50.75	10.12	22.05	82.92	.0706														2	12.54	3.00		15.54	7.77	3	63.29	13.12	22.05	98.46	32.82
MANHOLES NUMBER	EXAMINATION	319	22.50			22.50	.0706													256	25.63	1.75		27.38	.1069	575	48.13	1.75		49.88	.0867	
	CLEANING	32	55.95	15.00		70.95	2.22	790	854.00	8.25		93.65	.1185	33	28.01	2.25		30.26	.9170	629	119.92	27.00		146.92	.2334	1484	209.28	52.50		341.78	.2303	
	REPAIRING	22	157.56	32.06	56.54	246.16	11.19	73	384.43	65.07	102.65	559.15	7.66	107	238.35	39.75	57.56	335.66	3.14	55	205.34	55.24	72.77	333.35	6.06	257	985.68	192.12	296.52	1474.32	5.73	
	BUILDING	1	310.09	35.25	138.83	484.17	484.17							2	91.36	13.12	45.85	150.33	75.17	1	30.31	9.00	7.94	46.85	46.85	4	431.76	57.37	192.22	681.35	170.36	
FLUSH TANKS NUMBER	EXAMINATION																															
	CLEANING	4	6.51	2.25		8.76	2.19	4	6.50	.75		7.25	1.81	4	7.50	3.00		10.50	2.63							12	20.51	6.00		26.51	2.21	
	REPAIRING																															
	BUILDING																															
MISCELLANEOUS			566.64	239.38		806.02			1118.33	248.77		1367.10			2008.17	231.21		2239.38			707.31	289.29		996.60			4400.45	1008.65		5409.10		
OVERHEAD CHARGES			653.23			653.23			450.00			450.00			450.00			450.00			450.00			450.00			2678.23			2678.23		
TOTAL FIELD COST			12978.35	6592.97	525.97	2097.29		13552.90	6695.69	525.74	2097.427			13327.36	6883.16	454.67	20665.19			13151.46	7341.27	581.01	21073.74			53010.07	27713.03	208739	82810.49			
OVERHEAD CHARGES	MAINTENANCE OF YARD								2699.49						2791.25			2791.25			2875.76			2875.76			11011.46			11011.46		
	STORES LIVE STOCK		2644.90	1415.67					1453.36						1606.49			1606.49			1446.12			1446.12								

L. H. KELLEY - DEL.

ENGINEER OF SEWERS

BUREAU OF SEWERS

BOROUGH OF THE BRONX

STUDY OF THE RAINFALL AND RUNOFF—TINTON AVENUE DRAINAGE AREA

1911 to 1913

GENERAL DESCRIPTION.

The sewer in which the runoff was measured is of the combined type and situated in Tinton Ave., between E. 160th and E. 161st Sts., Borough of The Bronx. It was constructed in 1892 and is egg-shaped, 38 inches by 44 inches, built of brick, and in excellent condition.

At several points above and below where the sewer gauge was located careful measurements were taken of the interior dimensions of the sewer, and the results so closely agreed with the Bronx Standard Sewer Section, shown on Sheet No. 3, that the mean hydraulic radius of this section was used in the computations.

For a distance of 140 feet above and 156 feet below the point where the sewer gauge is located, the invert gradient or slope of the sewer is .67 foot per hundred.

In the computations of the capacity of the sewer, a frictional coefficient of .015 was assumed. The average depth of the dry weather flow was found to be .6 foot.

From April 10th, 1911, to July 19th, 1911, the float of the sewer gauge was .97 foot above the invert of the sewer, and from July 19th, 1911, to the end of the season, the float was .89 foot above the invert. During the year 1912 the float was .79 foot above the sewer invert, and in 1913 the float was lowered so that the dry weather could be measured. The sewer gauge was placed in a chamber built under the sidewalk at the curbline, 17 feet from the sewer. The chamber is connected with the sewer by means of a 12-inch vitrified pipe, which enters the sewer at right angles to the center line, and from the 12-inch pipe, which connects the chamber with the sewer, a 12-inch vitrified pipe riser was carried up vertically to a height of 9 feet 4 inches above the sewer invert. Directly over this 12-inch riser the register was placed in such a manner that the float and counter-balance hung freely in the pipe and the float, in its upward movement, would pass the counter-balance.

The length of the tape or wire connecting the register and float was so arranged that the counter-balance was always above the water level, except during such time as the sewer was surcharged 1.5 feet or over. Provision was also made for cleaning the connecting pipe and chamber. For details of chamber, see Sheet No. 3.

A stick gauge, shown on Sheet No. 4, for measuring the maximum water depth in the sewer, was placed vertically in a manhole on the line of the sewer, about 10 feet away from the pipe which connects the chamber with the sewer, for the purpose of comparing the greatest depth recorded by the register with that recorded by the stick gauge.

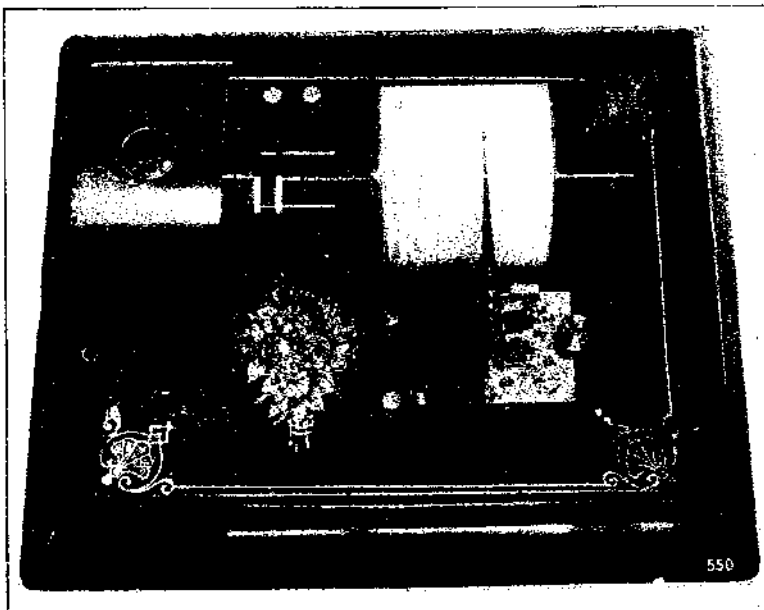
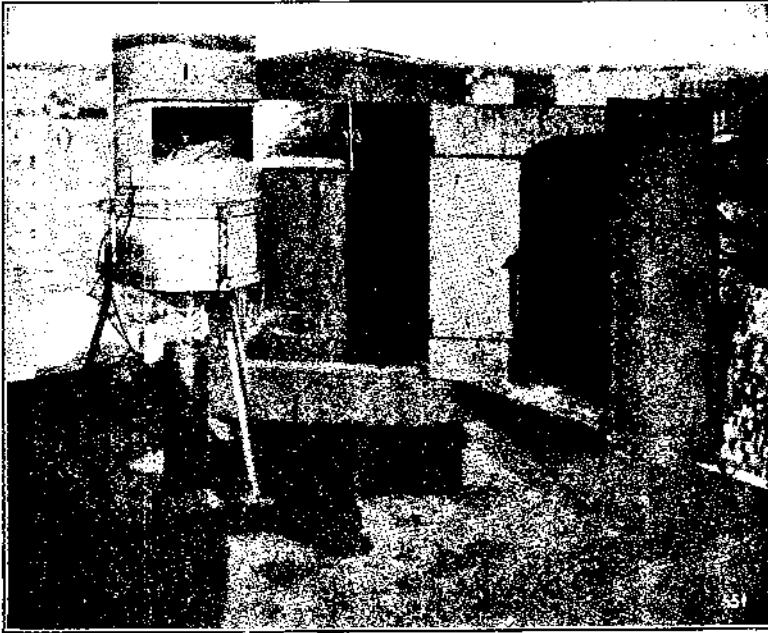
The drainage area tributary to the Tinton Ave. sewer contains 56.29 acres, of which 68.3 per cent. is impervious area, and 31.7 per cent. pervious.

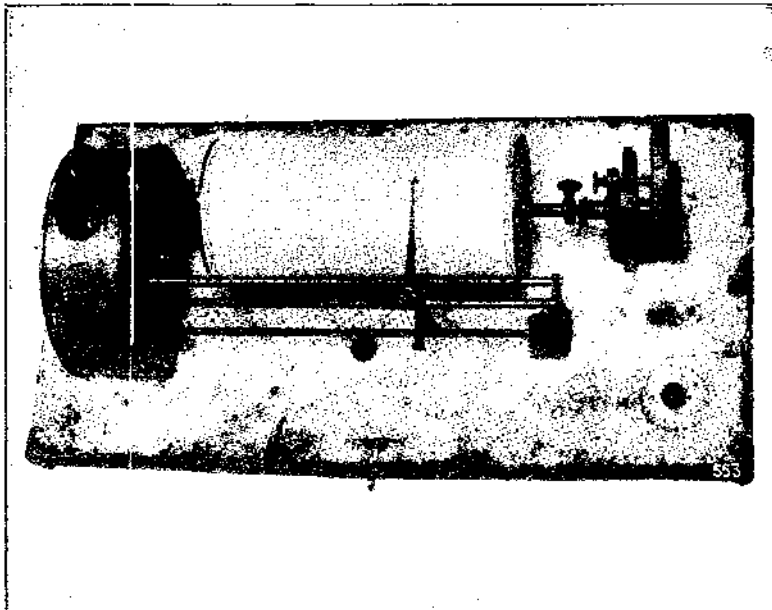
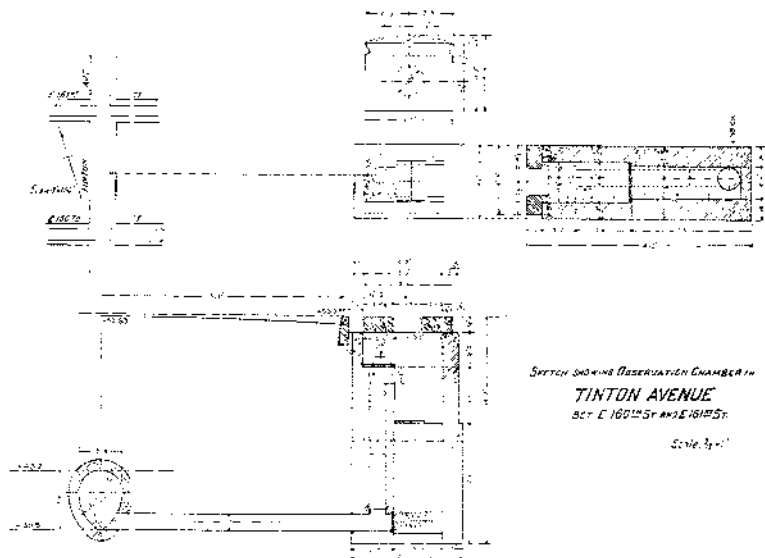
The tributary sewers, grades and slopes, boundary of the drainage area, the street system and surface grades are shown on Sheet No. 2. There are two public buildings within the drainage area which are suitably situated for rain-gauge stations, but permission to enter these buildings every day could not be obtained; therefore, the rain-gauge was installed on the roof of the building occu-

pied by Hook and Ladder Co. No. 19, which is located on the east side of Forest Ave., 150 feet north of E. 161st St., and is, consequently, situated without the southwest boundary line of the drainage area.

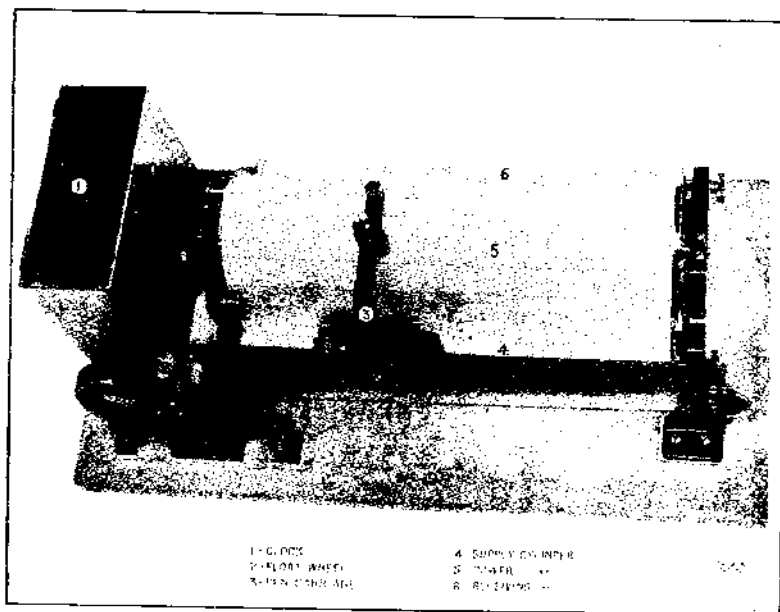
The rain-gauge was placed in the center of the roof and 45 feet above the street; it is not obstructed by any tall buildings or trees which would produce eddies of wind.

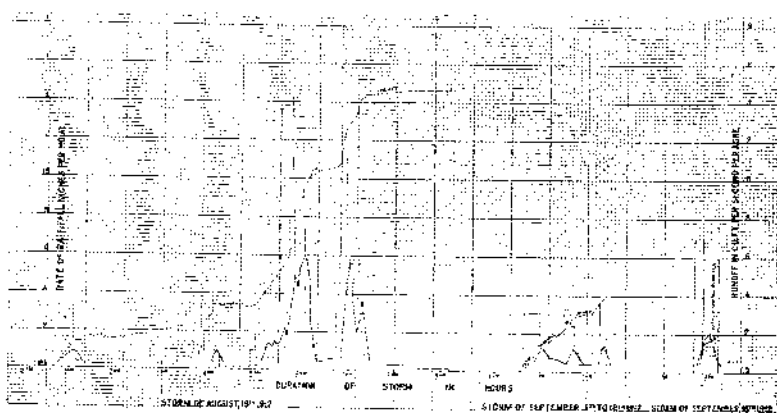
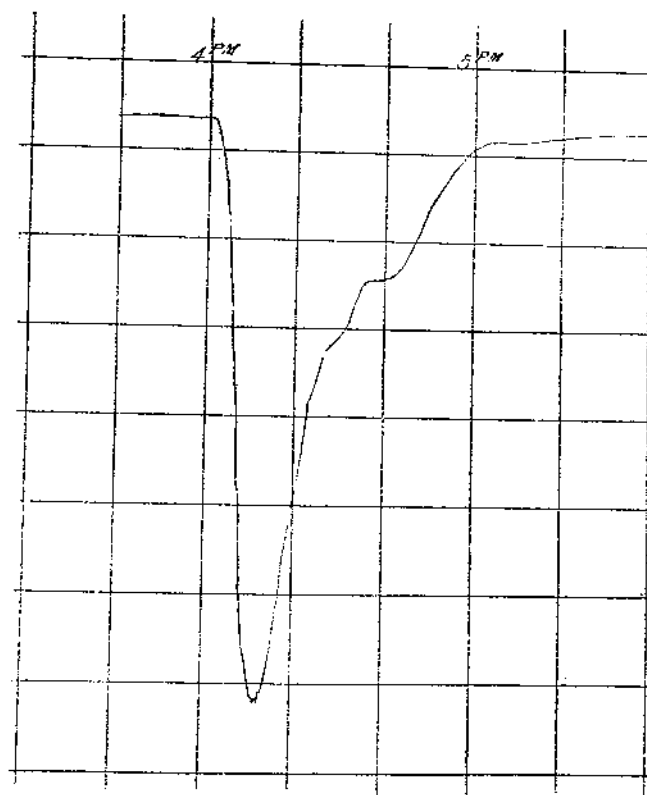
On the following sheets will be found a map showing the drainage area in detail, pictures of the instruments used in the study of the rainfall and runoff, record sheets of the same, also diagrams of severe storms, maximum intensity curves, and a chronological arrangement of storms and runoff diagrams.

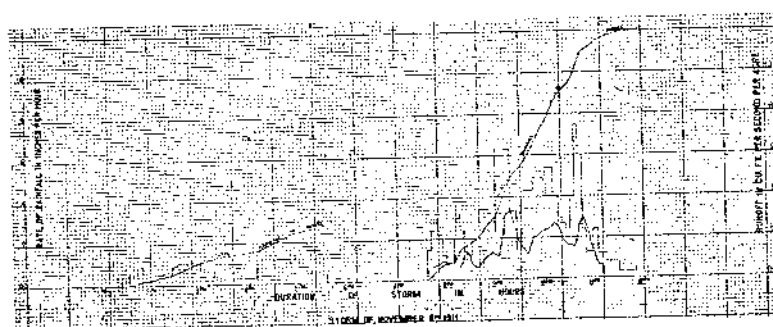
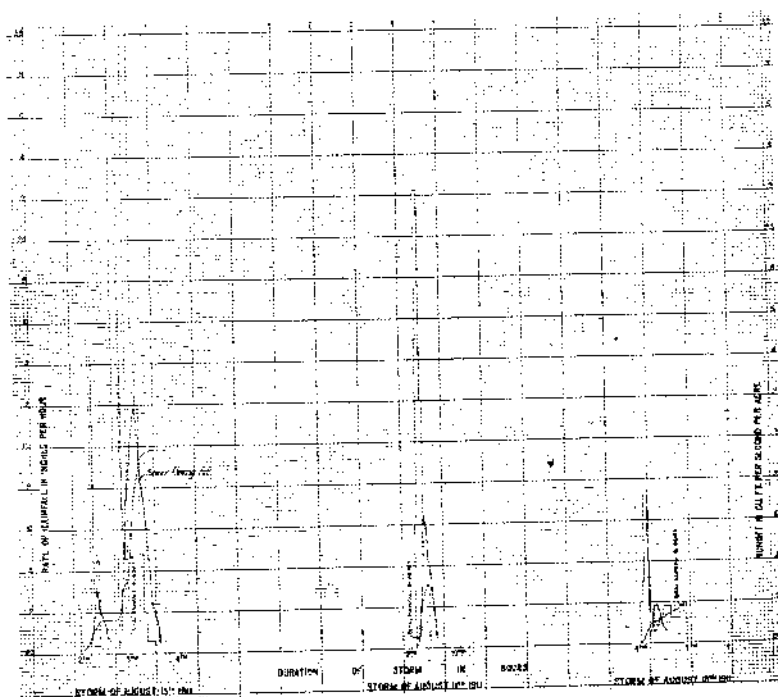


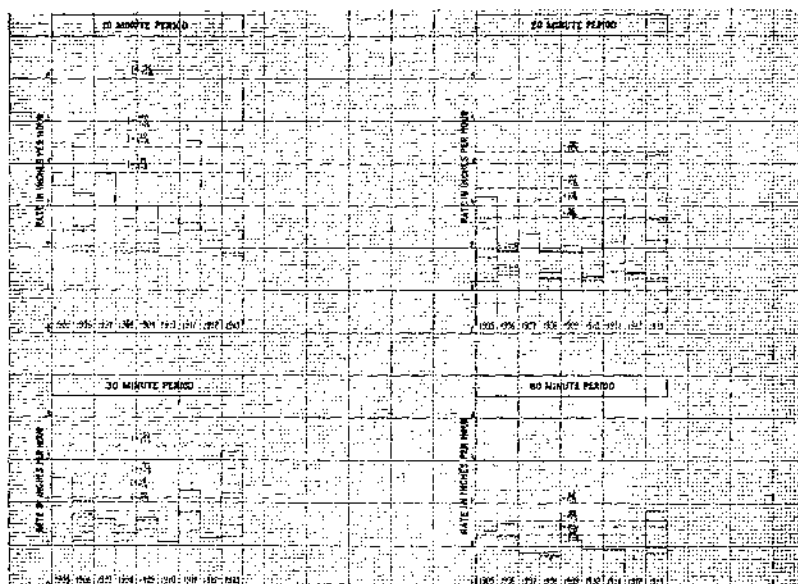
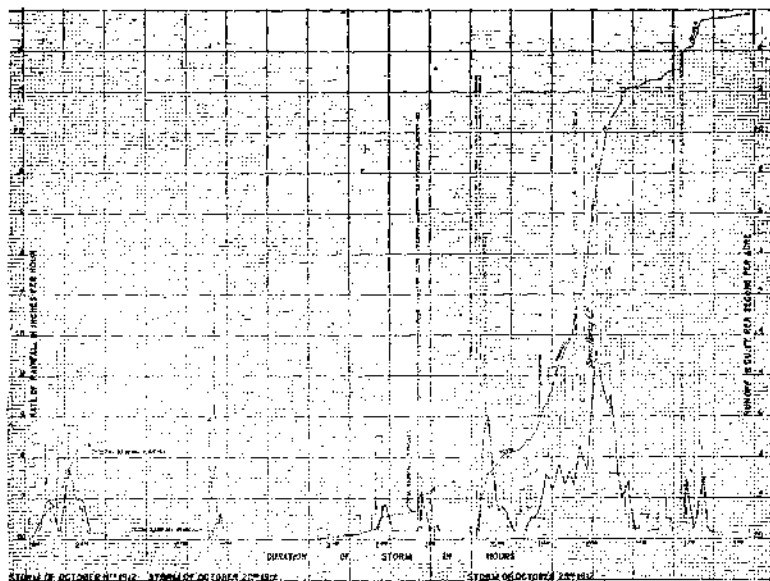


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ANNUAL REPORT BUREAU OF DESIGN—1913.

January 22, 1914.

Mr. R. H. Gillespie.

Chief Engineer of Sewers and Highways.

Sir:

I submit herewith a report of the operations of the Bureau of Design during the year 1913.

From the tables hereto annexed it will be noted that during the year 151 contracts, estimated to cost \$2,138,462, were prepared for letting, whereas during the preceding year 131 contracts, estimated to cost \$2,500,000 were prepared. Assessment lists for expenditures amounting to approximately \$2,394,000 were prepared during 1913, as compared with \$1,260,000 during 1912.

The records of the Bureau show that the cost of preparation of the contracts, exclusive of work done prior to preliminary authorization, was 0.55 per cent. of the estimated cost of the work to be done, and the cost of preparation of the assessment lists was 0.41 per cent. of the amount expended on the contracts for which the lists were made.

During the year plans and specifications were prepared for a number of important contracts. Some of the interesting features of this work are described below.

SPIUYTEN DUYVIL OUTLET SEWER.—This sewer is located in the former right of way of the New York Central and Hudson River Railroad, from 230th Street to Harlem River. It will serve to drain an area of about 300 acres, and will be the outlet for about 10 miles of main and lateral sewers. It will cost approximately \$90,000. The work to be done under this contract includes about 2,300 linear feet of reinforced concrete sewer from 7 feet 9 inches by 7 feet 0 inches to 8 feet 6 inches by 7 feet 0 inches interior dimensions. One section of the sewer under the tracks of the New York Central and Hudson River Railroad involved special features of design. The foundation conditions at the Harlem River are unusual. The soundings indicate rock with a sloping surface at a depth of 60 feet, this being overlaid with 8 to 10 feet of clay and sand, superimposed upon which is about 30 feet of mud. These conditions necessitated special longitudinal and lateral bracing of the piles used for the foundation.

Sewer in **LAFAYETTE AVENUE**, from Bronx River to Damis Avenue; and in **DAMIS AVENUE**, from Bronx River Avenue to Westchester Avenue.—This sewer is a portion of the system of which the recently completed White Plains Avenue sewer will be the main outlet. It will take the drainage of about 195 acres, which will contain about 8 miles of main and lateral sewers. It will cost approximately \$95,000. The sections of the sewer range from 54 inches by 68 inches egg-shape to a double sewer, each barrel of which is 5 feet by 7 feet in interior dimensions, and the soundings indicate that for about half its length the sewer will require pile foundation. The length of the work included in this

contract is about 3,800 linear feet, and while the drainage plans require only six different sizes of sewer, the physical conditions in the street were such that it was found necessary for reasons of economy to design fifteen sections. The sewer is designed to have a storm water overflow into the Bronx River at Lafayette Avenue. This overflow will also be used as a temporary outlet pending the construction of the sewer in Bronx River Avenue.

WEBSTER AVENUE RELIEF SEWER.—This contract provides for an extension of the sewer which was built a few years ago for the purpose of relieving the old Webster Avenue and Brook Avenue sewers which had become surcharged to a dangerous extent. The first portion of the relief sewer built, extended from Webster Avenue, at Wendover Avenue to the Harlem River, at a point north of High Bridge. It was constructed almost entirely in tunnel and cost nearly \$1,000,000. The contract in preparation at the present time will extend the relief sewer north in Webster Avenue, from Wendover Avenue to a point about 200 feet north of Tremont Avenue, and will afford additional relief to an area of about 2,200 acres, containing about 82 miles of sewers of various sizes. The portion to be constructed will be about 3,350 feet long and is estimated to cost about \$275,000. The sewer is designed to be of reinforced concrete and includes two sections, the interior dimensions of which are 13 feet by 8 feet 6 inches and 12 feet 6 inches by 8 feet 6 inches. Unusual conditions of roof loading and restricted headroom at several places necessitated careful study of the roof design, and the type finally determined to be most economical consists of I-beams spaced at varying intervals and supporting reinforced concrete slabs. The connection with the end of the existing relief sewer is to be made by means of a reducer 51 feet long, 18 feet 3 inches wide at the large end and 13 feet wide at the other. At intervals along the line the new and old sewers are to be connected by means of galleries.

Outlet Sewer in **PENNYFIELD AVENUE**, from East River to Chaffee Avenue; and in **CHAFFEE AVENUE**, from Pennyfield Avenue to Throgs Neck Boulevard; and in **THROGS NECK BOULEVARD**, from Chaffee Avenue to Barkley Avenue.—This sewer will be about 12,000 feet long and its interior dimensions will vary from 5 feet 6 inches by 6 feet 6 inches to 11 feet 3 inches by 6 feet 6 inches. The soundings indicate that pile foundation will be required for about 4,500 feet. This work is estimated to cost about \$480,000. When completed it will take the drainage of about 1,250 acres which will contain about 76 miles of main and lateral sewers. It will be provided with two storm water overflows, one discharging into Weir Creek at Dewey Avenue and the other discharging into East River at Chaffee Avenue.

Regulating, Grading, etc., **EAST 222ND STREET**, from Bronxwood Avenue to Arnow Avenue. This contract was let during the year and is notable chiefly on account of the amount of work involved. The street affected is about 1.7 miles long and requires the excavation of about 115,000 cubic yards of material and the furnishing of about 150,000 cubic yards of filling. The cutting in some places is 19 feet deep and the embankment in others is 20 feet high. The cost of this work, which does not include the furnishing of curb or flagging, will be about \$110,000.

A contract for constructing steps in **EAST 168TH STREET**, between Clay Avenue and Teller Avenue, has just been let. The difference in grade between the two avenues is 58 feet and the length of the block is only 161 feet. It would therefore be impossible to build a street for vehicular traffic, and a strip of land 30 feet wide was acquired for the purpose of constructing a flight of steps to

accommodate pedestrians. At the request of the owners of property in the vicinity an attempt has been made to design a rather ornamental structure of random range stone work, with granite steps and copings. The structure covers the plot for its entire width, and the steps start at the lower level near Clay Avenue and terminate in a roofed pavilion at Teller Avenue.

The revision of the Standard Details of Construction, which was begun late in 1912, was completed in 1913, and the third edition was issued early in the year. The book has been enlarged from 16 to 28 pages, the additions being mainly new types of receiving basins and inlets.

The contracts for street improvements are now so drawn that the standard details of construction are made a part thereof. The details are intended to be used in conjunction with the contract drawings, and are to be used in all cases where they are applicable, provided other details are not shown on the plan.

The standard details of construction are published in book form about 8½ inches by 11 inches, and consist of 28 pages of lithographs, made to scale. They are prepared and used in this form for the following reasons:

- 1.—It is intended to standardize the more common details of construction by making the details here shown a part of all contracts for regulating, grading, paving and sewer improvements. Only special or unusual details will hereafter be shown on the contract plans.

- 2.—The time and cost of the preparation of the plans will be materially reduced by avoiding the frequent repetition of the ordinary details. The cost of construction will also be reduced by reason of the fact that the ordinary structures are standard and uniform, and that contractors and manufacturers may prepare and keep in stock patterns, forms and templates for the various parts shown in the standard structures, and thereby save the expense of preparing new patterns, forms and templates for each particular contract.

- 3.—The chances of error in reproducing the details on each plan are reduced to a minimum and the draftsman's efficiency is materially increased because he is required to concentrate his attention only on the special features of the work in hand.

- 4.—By eliminating the drawings of the ordinary structures, the plans are rendered clear and easily legible. Furthermore, the attention of prospective bidders is immediately directed to the special or unusual features of the work.

- 5.—It is intended that copies of this book shall be placed in the hands of contractors, manufacturers, engineers and inspectors, so that all concerned in the construction of public improvements may have in concise and convenient form the information most frequently required.

So far as this bureau is concerned the results anticipated from the use of the standards have been fully realized; and it is believed that with regard to their use by engineers, inspectors, contractors and manufacturers, they have had a considerable measure of success.

The form of contract and specifications for sewers, which was prepared last year by a committee of engineers representing all the boroughs of the City, has been used for sewer contracts in this borough during the past year. New contracts and specifications for regulating and grading, and for paving with

sheet asphalt, asphalt blocks, granite blocks and bituminous concrete, have been prepared during the year, and for the sake of uniformity, as much of the matter in the sewer contract and specifications as was applicable has been used in the same or slightly modified language. Some of them are now in use and others are being printed.

A summary of the work done in connection with the preparation of contracts follows:

Field books for preliminary surveys	167
Preliminary working drawings, sketches, etc.	133
Tracings of construction details	21
Data for report to Local Boards forwarded—contracts	198
Contract plans and specifications:	
No of contracts	109
No. of tracings	131
No. of copies of specifications	1,211
No. of copies of bid sheets	2,305
Contracts forwarded for letting	151
Construction field books	114
Inspectors' books	166
Lithograph prints for Record Maps forwarded	172
Progress profiles	60
Working drawings (studies) of standard details	19
Tracings of standard details	18
Assessment Lists:	
No. of contracts	147
No. of maps prepared in duplicate	471
Frontage represented (linear feet)	1,242,227.25
No. of lots	14,023
No. of sketches for temporary connections	23
Total estimated cost (including engineering and inspection) of:	
Contracts forwarded for letting	\$2,138,452.00
Total cost of contracts (including engineering and inspection) for	
which assessments lists were forwarded	\$2,393,663.00

Details of the work summarized above will be found in Table I, II, III, IV and V.

Appended hereto are reproductions of a number of the contract plans prepared in the Bureau of Design. They are reproduced for the purpose of illustrating some of the more interesting engineering problems which are met in this borough, and the methods of meeting them, and also the character, quality and style of work done in the drafting room.

MAP

MAP

Subsurface Records.

The amount of work completed during the year by the division of subsurface records was noticeably more than that completed during the preceding year, as is shown by the following tabulation:

Kind of Work	1913	1912	Increase
Sheets for which surveys were made	101	93	8
Sheets on which surveys were plotted	105	62	43
Sheets for which subsurface examinations were made ..	141	73	68
Sheets on which examinations were plotted	51	35	16
Sheets completed to date and colored	10	4	6

In addition to the data actually recorded on the maps, a vast amount of data has been gathered from examinations of street openings, and filed. This information will be placed on new maps as rapidly as they are made.

The large amount of work done during the year is due partly to the increased efficiency of the men and partly to improvement in the subdivision and method of handling the work.

Attention is again directed to the importance of hastening as much as possible the work of preparing the subsurface record maps. Additional force could be effectively employed with the same overhead charges, and the advantages to be gained from the use of the maps at an early date cannot be overestimated.

The details of the year's work to the extent that the same can be stated in figures, are shown in the following summary:

Description	Number			Linear Ft.
	Located	Measured	Examined	Measured
Transit points	684	.....	.....	.....
Angles .....	.....	2,605	.....	.....
Transit and offset lines .....	.....	.....	.....	551,850
Sewers .....	.....	.....	.....	.....
Sewer manholes	1,403	.....	1,937	.....
Receiving basins	413	.....	515	.....
Water gate chambers .....	.....	7	.....	.....
Water gate boxes	938	.....	827	.....
Hydrants	625	.....	.....	.....
Drips—gas	119	.....	.....	.....
Poles	296	.....	.....	.....
Elevated columns	219	.....	.....	.....
E. C. S. Co. manholes and boxes ...	123	40	.....	.....
C. T. and E. S. Co. manholes and boxes	351	441	.....	.....
N. Y. F. D. boxes .....	.....	14	.....	.....
Street and curb lines .....	.....	.....	.....	270,380
Trolley tracks .....	.....	.....	.....	118,840
Railroad tracks .....	.....	.....	.....	.....
Kiosks .....	.....	.....	.....	.....
N. Y. C. manholes	14	.....	.....	.....
R. T. boxes	6	.....	.....	.....
Retaining walls .....	.....	64	.....	.....
Col. foundations .....	.....	.....	.....	.....
Road boxes	16	.....	.....	.....
U. R. R. boxes	21	.....	.....	.....

Description	Number			Linear Ft. Measured
	Located	Measured	Examined	
Fences	61	....	....	....
Bridges	9	....	....	....
Newells	2	....	....	....
N. Y. Police Dept. boxes .....	....	....	....	....
Tunnel walls .....	....	....	....	....
Investigations of Open Cuts.				
Open cuts .....	....	....	8,377	....
Water mains	2,528	....	....	....
Gas mains	3,005	....	....	....
Duct mains	800	....	....	....
Special sections—gas .....	....	1	....	....
Miscellaneous pipes	58	....	....	....
Vaults .....	....	4	....	....

The work of the year was conducted in some respects under adverse conditions. An unusual amount of time was lost on account of sickness. Much of the work was done under great pressure, because it was considered important to have the authorization or letting of certain contracts expedited. An unusual number of temporary employees was appointed with the consequent loss of time and effort while they were familiarizing themselves with their work. Notwithstanding these handicaps the amount of work done during the year compares more than favorably with that of preceding years, and the contracts have been let more expeditiously than ever. This result is largely due to the continued and faithful co-operation of the employees of the bureau.

Respectfully,

CHARLES GARTENSTEIG,
Engineer of Design.

TABLE I.

Estimate of Quantities and Data for Report to Local Board Forwarded.
Sewers and Appurtenances.

COLLEGE AVENUE, between E. 167th Street and E. 168th Street.
PAULDING AVENUE, between Walker Avenue and N. Y., N. H. & H. R. R.
STORROW STREET, between Benedict Avenue and McGraw Avenue; and in
McGRAW AVENUE, between Storrow Street and Pugsley Avenue.
LAFAYETTE AVENUE, between Longwood Avenue and Tiffany Street.
TAYLOR AVENUE, between Wood Avenue and Walker Avenue; and in
ARCHER AVENUE, between Theriot Avenue and Beach Avenue; and in
GUERLAIN PLACE, between Leland Avenue and Beach Avenue; and in
WALKER AVENUE, (both sides), between Taylor Avenue and Leland
Avenue, and in THERIOT AVENUE, between Walker Avenue and the
summit south of Guerlain Place.
MONTEREY AVENUE, between E. 178th Street and E. 179th Street.
MARMION AVENUE, between E. 176th Street and E. 175th Street.
MONTEREY AVENUE, between E. 178th Street and E. 179th Street.

ST. LAWRENCE AVENUE, between Gleason Avenue and the summit southerly therefrom.

EASTCHESTER ROAD, between Blondell Avenue and Williamsbridge Road; and in WILLIAMSBRIDGE ROAD, between Eastchester Road (Silver Street), and the property of the N. Y., N. H. & H. R. R.

WILLIAMSBRIDGE ROAD (both sides), between Walker Avenue and Silver Street.

ST. RAYMOND AVENUE, between Zerega Avenue and St. Peter's Avenue.

POWELL AVENUE, between Pugsley Avenue and Virginia Avenue; and in VIRGINIA AVENUE, between Powell Avenue and Virginia Avenue; and in GLEASON AVENUE, between Pugsley Avenue and Virginia Avenue; and in ELLIS AVENUE, between Pugsley Avenue and Virginia Avenue; and in NEWBOLD AVENUE, between Tremont Avenue and Virginia Avenue.

RHINELANDER AVENUE, between Muliner Avenue and Bear Swamp Road; and in BEAR SWAMP ROAD, between Rhineland Avenue to a point about 300 feet southerly therefrom.

BLACKROCK AVENUE, between Pugsley Avenue and Virginia Avenue; and in VIRGINIA AVENUE, between Watson Avenue and Blackrock Avenue.

ST. RAYMOND AVENUE, between St. Peter's Avenue and Overing Street.

VAN CORTLANDT PARK SOUTH, between Broadway and Albany Road.

CASTLEHILL AVENUE, between Westchester Avenue and Parker Avenue.

BAILEY AVENUE, between W. 238th Street and a point about 220 feet northerly therefrom.

HERSCHELL STREET, between Westchester Avenue and Wellington Avenue.

OLMSTEAD AVENUE, between Hermany Avenue and Turnbull Avenue.

HAVILAND AVENUE, between Pugsley Avenue and Virginia Avenue; and in VIRGINIA AVENUE, between Watson Avenue and Powell Avenue.

WILLIAMSBRIDGE ROAD (both sides), between Walker Avenue and Silver Street.

NEWTON AVENUE, between W. 253rd Street and W. 260th Street.

E. 207TH STREET, between Woodlawn Road and Perry Avenue.

BRONXDALE AVENUE, between West Farms Road and Castlehill Avenue.

BRITTON (SHERIDAN) STREET, between the easterly line of Bronx Park to White Plains Road.

E. 172ND STREET, between Seabury Place and Boston Road.

STORY AVENUE, between Metcalf Avenue and Manor Avenue; and in STRATFORD AVENUE, between Story Avenue and the summit north of Lafayette Avenue.

PARK STREET, between E. 149th Street and Westchester Avenue.

GLOVER STREET, between Lyon Avenue and St. Raymond Avenue.

DORSEY STREET, between Zerega Avenue and Seddon Street.

MACLAY AVENUE, between Seddon Street and St. Peter's Avenue.

WOOD AVENUE, between White Plains Road and Storrow Street; and in GRAY STREET, between McGraw Avenue and Archer Street.

THROG'S NECK BOULEVARD, between Barclay Avenue and Eastern Boulevard; and in EASTERN BOULEVARD, between Throg's Neck Boulevard and Westchester Avenue; and in WESTCHESTER AVENUE, between Eastern Boulevard and Morris Park Avenue.

WEST 236TH STREET, between Spuyten Duyvil Road and Corlear Avenue, etc.

WEST 236TH STREET, between Kingsbridge Avenue and Corlear Avenue, etc.

DAVIDSON AVENUE, from the existing sewer south of West 184th Street to Evelyn Place, etc.

WHITE PLAINS AVENUE, from a point 100 feet north of the bulkhead line to the pierhead line of the East River.

ALBANY CRESCENT, between 231st Street and Bailey Avenue.

W. 260TH STREET, between Broadway and Fieldston Road.

West side of AQUEDUCT AVENUE, between W. 176th Street and W. 174th Street.

McGRAW AVENUE, between White Plains Road and Gray St.

STARLING AVENUE, between Olmstead Avenue and Hoguet Avenue; and in HOGUET AVENUE, between Starling Avenue and McGraw Avenue; and in McGRAW AVENUE, between Hoguet Avenue and Pugsley Ave.

RHINELANDER AVENUE, between Cruger Avenue and Wallace Avenue; and in WALLACE AVENUE, between Rhinelander Avenue and Bear Swamp Road; and in BEAR SWAMP ROAD, between Wallace Avenue and Bronx Park East; and in BRONX PARK EAST, between Bear Swamp Road and the summit north of Mace Avenue; and in PELHAM PARKWAY NORTH, between Bronx Park East and Olinville Avenue; and in OLINVILLE AVENUE, between Pelham Parkway North and Waring Avenue; and in WARING AVENUE, between Olinville Avenue and the east side of White Plains Road; and in WHITE PLAINS ROAD (west side), between Waring Avenue and the summit north of Mace Avenue.

BRONX and PELHAM PARKWAY, between Pelham Parkway South and the north side of Pelham Parkway, at Matthews Avenue; and in BRONX and PELHAM PARKWAY NORTH, between Matthews Avenue and Bronxwood Avenue; and in BRONXWOOD AVENUE, between Pelham Parkway North and Allerton Avenue.

Storm Water Sewer and Appurtenances.

EAST 233RD STREET, between Hutchinson River and Provost Avenue.

Rebuilding Sewers and Appurtenances.

E. 135TH STREET, between Walnut Avenue and Willow Avenue.

THIRD AVENUE, between E. 138th Street and E. 140th Street.

Receiving Basins and Appurtenances.

Northwest corner of LONGFELLOW AVENUE and Seneca Avenue.

Southwest corner of LONGFELLOW AVENUE and Seneca Avenue.

East and west sides of EXTERIOR STREET, south of W. 230th Street.

Northeast corner of AQUEDUCT AVENUE and E. 181st Street.

Southeast corner of St. Ann's Avenue and E. 161st Street.

East side of BAILEY AVENUE, opposite W. 233rd Street.

Northeast and southeast corners GARRISON AVENUE and Barretto Street.

North side of E. 180TH STREET, opposite Bronx Park Avenue.

Northeast corner of BROADWAY and W. 230th Street.

Northeast corner of STEBBINS AVENUE and E. 169th Street.

Northeast corner of MORRIS AVENUE and McClellan Street.

Northeast corner of BASSFORD AVENUE and E. 185th Street.

Northeast corner of W. 169TH STREET and Inwood Avenue.

Northeast corner of JEROME AVENUE and E. 198th Street.

Southwest corner of CHISHOLM STREET and Intervale Avenue.

Southwest and southeast corners of W. 231ST STREET and Albany Crescent.

Southeast corner of W. 233RD STREET and Albany Crescent.

West side of JEROME AVENUE, opposite E. 204th Street.
 Northwest corner of JEROME AVENUE and W. 196th Street.
 Northwest corner of BELMONT AVENUE and E. 179th Street.

Drains.

ROBERTSON STREET, between E. 242nd Street and E. 243rd Street.

Catch Basin and Appurtenances.

PALISADE PLACE, about 110 feet east of Sedgwick Avenue.

TABLE II.

Approximate Assessed Valuations Forwarded for Report to Local Board.

Regulating, Grading, etc.

VIRGINIA AVENUE, from Public Place at intersection of Westchester Avenue to Ludlow Avenue.
 PUGSLEY AVENUE, from McGraw Avenue to Tremont Avenue.
 MEAD STREET, from Garfield Street to Unionport Road.
 BAKER STREET, from Garfield Street to Unionport Road.
 WHITTIER STREET, from Seneca Avenue to Lafayette Avenue.
 W. 254TH STREET, from Broadway to Fieldston Road.
 COSTER STREET, from Randall Avenue to Edgewater Road.
 ADAMS STREET, from Morris Park Avenue to N. Y., N. H. & H. R. R.
 DYRE AVENUE, from Boston Road to City Line.
 PARK STREET, from E. 149th Street to Westchester Avenue.
 BEACH AVENUE, from Walker Avenue to Tremont Avenue.
 STORROW STREET, from Public Place at 177th Street and Westchester Avenue to Unionport Road.
 FORT SCHUYLER ROAD, from West Farms Road to Morris Avenue.
 TAYLOR AVENUE, from Westchester Avenue to 250 feet north of Wood Avenue; and in WEST 234TH STREET, from Kingsbridge Avenue to 150 feet west of Tibbett's Avenue.
 NORTH STREET, from Walton Avenue to Morris Avenue.
 E. 190TH STREET, from Jerome Avenue to Creston Avenue.
 ST. RAYMOND AVENUE, from Hoguet Avenue to Williamsbridge Road.
 TAYLOR AVENUE, from Westchester Avenue to E. 177th Street.
 FORDHAM ROAD, from Harlem River terrace to Webster Avenue.
 NORTH STREET, from Aqueduct Avenue East to Jerome Avenue.
 TIER STREET, from City Island Avenue to North Street.
 AMETHYST STREET, from Morris Park Avenue to Rhinelander Avenue.
 BARNES AVENUE, from N. Y., N. H. & H. R. R. to Rhinelander Avenue.
 CRUGER AVENUE, from N. Y., N. H. & H. R. R. to Bronx and Pelham Parkway.
 E. 164TH STREET, from Sheridan Avenue to Jerome Avenue.
 E. 174TH STREET, from Boone Street to Bronx Avenue.
 AUSTIN PLACE, from E. 144th Street to E. 149th Street.
 WALLACE AVENUE, from N. Y., N. H. & H. R. R. to Bronx and Pelham Parkway.
 VICTOR STREET, from Van Nest Avenue (Columbus Avenue) to Rhinelander Avenue.
 UNNAMED STREET, from Rogers Place and E. 165th Street West to E. 165th Street.

BARNES AVENUE, from N. Y., N. H. & H. R. R. to (Bronxdale Avenue)
 Bear Swamp Road.
 ALLERTON AVENUE, from Bronx Boulevard to Eastchester Road.
 RHINELANDER AVENUE, from Unionport Road to White Plains Road.
 MORRIS PARK AVENUE, from Williamsbridge Road to Eastchester Road.
 BLACKROCK AVENUE, from Virginia Avenue to Westchester Creek.
 CHATTERTON AVENUE, from Virginia Avenue to a point 265 feet east of
 Zerega Avenue.
 E. 217TH STREET, from White Plains Avenue to Oakland Avenue.
 HOLLAND AVENUE, from N. Y., N. H. & H. R. R. to the Bronx and Pel-
 ham Parkway.
 162ND STREET, from Grand Boulevard and Concourse to Sherman Avenue.
 MERRILL STREET, from Rosedale Avenue to Beach Avenue.
 BLACKROCK AVENUE, from Virginia Avenue to Havemeyer Avenue.
 ST. PETER'S AVENUE, from Westchester Avenue to Walker Avenue.
 PARKER STREET, from Castlehill Avenue to Lyon Avenue.
 RHINELANDER AVENUE, from White Plains Road to Unionport Road.
 BENSON STREET, from Lane Avenue to Walker Avenue.
 FRISBY AVENUE, from Walker Avenue to Zerega Avenue.
 ALLERTON AVENUE, from Bronx Boulevard to Eastchester Road, excepting
 portion between White Plains Road and Boston Road.
 PIERCE AVENUE, from Bear Swamp Road to Paulding Avenue; and PAULD-
 ING AVENUE, from Pierce Avenue to N. Y., N. H. & H. R. R.
 COTTAGE PLACE, from Crotona Park South to E. 170th Street.
 WALLACE AVENUE, from N. Y., N. H. & H. R. R. to Bronxdale Avenue.
 WEST 254TH STREET, from Broadway to about 235 feet west of north house-
 line of Valles Avenue.
 EAST 141ST STREET, from Park Avenue to Rider Avenue.
 PUGSLEY AVENUE, from Tremont Avenue to Powell Avenue.
 GLEASON AVENUE, from White Plains Avenue to Zerega Avenue.
 ADEE AVENUE, from White Plains Road to Boston Road.
 WEST 260TH STREET, from Fieldston Road to Broadway.
 NEWBOLD AVENUE, from Virginia Avenue to Zerega Avenue.
 CRUGER AVENUE, from Baker Avenue to Morris Park Avenue.
 SEDGWICK AVENUE, from Depot Place to W. 171st Street.
 ALLERTON AVENUE, from Bronx Park East to White Plains Road.
 RANDALL AVENUE, from the pier and bulkhead line of Bronx River to White
 Plains Road.
 PUGSLEY AVENUE, from Tremont Avenue to Ludlow Avenue.
 DAVIDSON AVENUE, from the northerly line of the property of the Jerome
 Avenue Realty Company to W. 181st Street; GRAND AVENUE, from the
 northerly line of the property of the Jerome Avenue Realty Company to
 W. 181st Street; HARRISON AVENUE, from the northerly line of the
 property of the Jerome Avenue Realty Company to W. 181st Street.
 WEST 236TH STREET, from Corlear Avenue to Broadway.
 SPUYTEN DUYVIL PARKWAY, from Fieldston Road to Broadway.

Regulating, Grading and Paving with Granite Blocks.

SENECA AVENUE, from Hunt's Point Avenue to 100 feet east of Edgewater
 Road.
 GUN HILL ROAD, from Webster Avenue to White Plains Road.

Regulating, Grading and Paving with Sheet Asphalt.

DAVIDSON AVENUE, from Evelyn Place to Fordham Road.

DAVIDSON AVENUE, from Evelyn Place to a point 453 feet north of W. 180th Street.

The portion of PROSPECT AVENUE, now occupied by a center plot, from East 152nd Street to a line 80 feet northerly therefrom.

Regulating, Grading and Steps.

UNNAMED STREET, from Fordham Road, near Hampden Place to Sedgwick Avenue.

Paving with Asphalt Blocks.

VYSE AVENUE, from 173rd Street to Boston Road.

E. 165TH STREET, from Union Avenue to Stebbins Avenue.

HOE AVENUE, from E. 167th Street to West Farms Road.

MACLAY AVENUE, from Walker Avenue to St. Peter's Avenue.

E. 165TH STREET, from Grant Avenue to Morris Avenue.

Paving with Sheet Asphalt.

BECK STREET, 10 feet north of Leggett Avenue to 35 feet north of Leggett Avenue.

BATHGATE AVENUE, from 188th Street to Fordham Road.

W. 230TH STREET, from Broadway to Corlear Avenue.

E. 180TH STREET, from Devoe Avenue to Morris Park Avenue.

ZEREGA AVENUE, from Westchester Avenue to St. Raymond Avenue.

E. 132ND STREET, from St. Ann's Avenue to Locust Avenue.

CONCORD AVENUE, from E. 142nd Street to E. 149th Street.

KELLY STREET, from Intervale Avenue to E. 163rd Street.

JACKSON AVENUE, from E. 141st Street to E. 149th Street.

E. 181ST STREET, from Maps Avenue to Southern Boulevard.

FAILE STREET, from bridge over N. Y., N. H. & H. R. R. to Garrison Avenue.

Paving with Granite Blocks.

E. 179TH STREET, from Park Avenue to Third Avenue.

E. 178TH STREET, from Park Avenue to Third Avenue.

GERMAN PLACE, from Westchester Avenue to Roe Street.

E. 170TH STREET, from Bristow Street to Wilkins Avenue.

PARK AVENUE EAST, from 144th Street to Morris Avenue.

CROMWELL AVENUE, from E. 150th Street to the existing pavement about 495 feet northerly therefrom.

Paving with Sheet Asphalt and Asphalt Blocks.

UNIVERSITY AVENUE (Aqueduct), from Washington Bridge to south crosswalk at Burnside Avenue (west of University Avenue).

Paving with Bituminous Pavement.

CLASON POINT ROAD, from Westchester Avenue to East River.

NELSON AVENUE, from Boscobel Avenue to Macomb's Road.

VYSE AVENUE, from E. 173rd Street to Tremont Avenue.

NELSON AVENUE, from Featherbed Lane to Macomb's Road.

Paving with Bituminous Concrete.

INWOOD AVENUE, from Cromwell Avenue to Macomb's Road; and in W.

170TH STREET, from Boscobel Avenue to Jerome Avenue.

WALTON AVENUE, from 175th Street to 177th Street.

GARRISON AVENUE, from Tiffany Street to Hunt's Point Avenue.

HOE AVENUE, from 173rd Street to Boston Road.

BRANDT PLACE, from University Avenue to Nelson Avenue; and W. 174TH STREET (175th Street) from Nelson Avenue to Macomb's Road.
 WALTON AVENUE, from 175th Street to 176th Street.
 MACLAY AVENUE, from Zerega Avenue to Walker Avenue.
 TREMONT AVENUE, from Westchester Avenue to west side Rosedale Avenue.
 GLEBE AVENUE, from Westchester Avenue to Overing Street.
 MACLAY AVENUE, from Zerega Avenue to Walker Avenue.
 KINGSBRIDGE AVENUE, from 230th Street to 234th Street.
 E. 174TH STREET, from Southern Boulevard to Bryant Avenue.
 E. 151ST STREET, from Prospect Avenue to Jackson Avenue.

Guard Rail.

Northwest corner E. 182ND STREET and Webster Avenue.
 Northeast corner of BROADWAY and 236th Street.
 In front of Premises Nos. 985 and 987 Intervale Avenue.
 CHARLOTTE STREET, 110 feet north of Seabury Place.
 Block No. 2744, which is bounded by Hoe Avenue, 167th Street and West Farms Road and about 72 feet of flagging.
 HOE AVENUE, 167th Street and West Farms Road.
 Southeast corner of 178TH STREET and Prospect Avenue.

Filling in Sidewalk, Laying and Relaying Flagging.

WHITLOCK AVENUE, from Lafayette Avenue (east side), northerly, about 125 feet.

Filling in Sunken Lots.

Easterly and westerly sides of BROADWAY, from 233rd Street to a point midway between 236th Street and 237th Street.

Fencing Vacant Lots.

PARK AVENUE, northwest corner, 184th Street to about 217 feet north.

Repairing Sidewalks.

Northwest corner THIRD AVENUE and St. Pauls Place.
 At the northwest corner of THIRD AVENUE and ST. PAUL'S PLACE.
 BEACH AVENUE, from Gleason Avenue to Watson Avenue.

Flagging.

E. 205TH STREET, in front of Lots 9, 10, 12, 30, 88, 89—Block 3341.
 Southwest corner of THIRD AVENUE and E. 149th Street.

Flagging and Reflagging Sidewalk.

Southerly side of GUN HILL ROAD, from about 46.5 feet east of Kingsbridge Avenue southerly for a distance of about 142 feet.

TABLE III.

Contract Plans and Specifications Prepared.

Sewers and Appurtenances.

PUGSLEY AVENUE, between Westchester Avenue and McGraw Avenue.
 W. 236TH STREET, between Broadway and Kingsbridge Avenue; and in W. 238TH STREET, between Broadway and Kingsbridge Avenue; and in KINGSBRIDGE AVENUE, between W. 234th Street and W. 238th Street.

WATSON AVENUE, between Pugsley Avenue and Theriot Avenue; and in
 THERIOT AVENUE, between Watson Avenue and Westchester Avenue.
 MONTEREY AVENUE, between E. 178th Street and E. 179th Street.
 ST. RAYMOND AVENUE, between Parker Street and Odell Street; and in
 Purdy Street, between Parker Street and Westchester Avenue; and in WEST-
 CHESTER AVENUE (both sides), between Olmstead Avenue and Castlehill
 Avenue; and in GLOVER STREET, between St. Raymond Avenue and Cas-
 tlehill Avenue.
 MARMION AVENUE, between E. 176th Street and E. 175th Street.
 COLLEGE AVENUE, between E. 167th Street and E. 168th Street.
 GLEASON AVENUE, between Metcalf Avenue and St. Lawrence Avenue.
 ST. LAWRENCE AVENUE, between Gleason Avenue and the summit south-
 erly therefrom.
 BEACH AVENUE, between Wood Avenue and Mansion Street.
 ST. RAYMOND AVENUE, between Zerega Avenue and St. Peter's Avenue.
 S. RAYMOND AVENUE, between St. Peter's Avenue and Overing Street.
 Across the property of the N. Y. C. & H. R. R. Co., from the U. S. Pier
 and Bulkhead line of the Harlem River Ship Canal, at a point about 25 feet
 west of the West Bulkhead line of former Spuyten Duyvil Creek to the
 former right-of-way of the N. Y. C. & H. R. R. Co., etc.
 PENNYFIELD AVENUE, between the East River to Chaffee Avenue, etc.
 TAYLOR AVENUE, between Wood Avenue and Walker Avenue.
 BLACKROCK AVENUE, between Pugsley Avenue and Virginia Avenue.
 OLMSTEAD AVENUE, between Hermany Avenue and Turnbull Avenue;
 POWELL AVENUE, between Pugsley Avenue and Virginia Avenue; and
 in VIRGINIA AVENUE, between Powell Avenue and Westchester Avenue;
 and in GLEASON AVENUE, between Pugsley Avenue and Virginia Ave-
 nue; and in ELLIS AVENUE, between Pugsley Avenue and Virginia Ave-
 nue; and in NEWBOLD AVENUE, between Tremont Avenue and Virginia
 Avenue.
 LAFAYETTE AVENUE, between Bronx River and Damis Avenue; and in
 DAMIS AVENUE, between Bronx River Avenue and Westchester Avenue.
 WALDO AVENUE, between W. 242nd Street and W. 236th Street; and in W.
 236TH STREET, between Waldo Avenue and Riverdale Avenue; and in
 RIVERDALE AVENUE, between W. 236th Street and W. 238th Street;
 and in GREYSTONE AVENUE, between W. 236th Street and a point 500
 feet north of W. 238th Street; and in W. 238TH STREET, between Waldo
 Avenue and Riverdale Avenue.
 E. 207TH STREET, between Bainbridge Avenue and Perry Avenue.
 CASTLEHILL AVENUE, between Westchester Avenue and Parker Street.
 E. 172ND STREET, between Scabury Place and Boston Road.
 RANDALL AVENUE, between Metcalf Avenue and Bronx River.

Rebuilding Sewers and Appurtenances.

TINTON AVENUE, between E. 156th Street and E. 165th Street.
 E. 146TH STREET, between Brook Avenue and St. Ann's Avenue.
 E. 135TH STREET, between Walnut Avenue and Willow Avenue.

A Relief Sewer and Appurtenances.

WEBSTER AVENUE, from the existing Storm Relief Tunnel Sewer in Wen-
 dover Avenue to a point 200 feet north of Tremont Avenue.

Regulating, Grading, etc.

W. 179TH STREET, from Osborne Place to Aqueduct Avenue.
 W. 172ND STREET, from Inwood Avenue to Jerome Avenue.

E. 198TH STREET, from Creston Avenue to Jerome Avenue.
 TAYLOR AVENUE, from Westchester Avenue to Gleason Avenue.
 E. 222ND STREET, from Bronxwood Avenue to Arnow Avenue.
 VAN NEST AVENUE, from West Farms Road to Bear Swamp Road.
 GLEBE AVENUE, from Zerega Avenue to Overing Street.
 TYNDALL AVENUE, from Mosholu Avenue to about 73.12 feet north of W. 230th Street.
 E. 174TH STREET, from Southern Boulevard to Bronx River.
 E. 187TH STREET, from Valentine Avenue to Marion Avenue.
 RANDOLPH AVENUE, from St. Lawrence Avenue to Beach Avenue.
 W. 172ND STREET, from Aqueduct Avenue to Jessup Avenue.
 GRAY STREET, from Tremont Avenue to Unionport Road.
 BEACH AVENUE, from Gleason Avenue to 177th Street.
 PUGSLEY AVENUE, from Tremont Avenue to McGraw Avenue.
 FIELDSTON ROAD, from Mosholu Avenue to a point about 305 feet north of W. 250th Street.
 LIEBIG AVENUE, from Mosholu Avenue to the south line of the Foster property, near 260th Street.
 MORRIS AVENUE, from Fordham Road to E. 191st Street; and in E. 191st STREET, from Morris Avenue to Creston Avenue.
 WHITTIER STREET, from Seneca Avenue to Lafayette Avenue.
 E. 174TH STREET, from Southern Boulevard to Boone Street (80 feet in width).
 NEWTON AVENUE, from W. 253rd Street to W. 260th Street.
 NORTH STREET, from Aqueduct Avenue East to Jerome Avenue.
 SUMMIT PLACE, from Heath Avenue to Bailey Avenue.
 ST. RAYMOND AVENUE, from Hoguet Avenue to Williamsbridge Road.
 TAYLOR AVENUE, from Westchester Avenue to 250 feet north of Wood Avenue.
 PARK STREET, from E. 149th Street to Westchester Avenue.
 UNIONPORT ROAD, from Morris Park Avenue to Walker Avenue.
 W. 234TH STREET, from Kingsbridge Avenue to 150 feet west of Tibbett Avenue.
 VIRGINIA AVENUE, from Public Place at Westchester Avenue to Ludlow Avenue.
 GUN HILL ROAD, from Webster Avenue to White Plains Avenue.
 FRISBY AVENUE, from Walker Avenue to Zerega Avenue.
 FORDHAM ROAD, from Harlem River Terrace to Webster Avenue.
 E. 164TH STREET, from Sheridan Avenue to Jerome Avenue.
 W. 254TH STREET, from Broadway to change of grade 235 feet west of Valles Avenue.
 COTTAGE PLACE, from 170th Street to Crotona Park South.
 FT. SCHUYLER ROAD, from West Farms Road to Morris Lane.
 BARNES AVENUE, from N. Y., N. H. & H. R. R. to Bear Swamp Road (Bronxdale Avenue).
 E. 217TH STREET, from White Plains Avenue to Oakley Avenue.
 MULINER AVENUE, from Morris Park Avenue to Bear Swamp Road.
 BENEDICT AVENUE, from Storrow Street to Olmstead Avenue.
 VAN CORTLANDT PARK SOUTH, from Mosholu Parkway to Broadway.
 ST. PETERS AVENUE, from Westchester Avenue to Walker Avenue.
 CHATTERTON AVENUE, from Virginia Avenue to a point 265 feet east of Zerega Avenue.
 WALLACE AVENUE, from N. Y., N. H. & H. R. R. to Bear Swamp Road.

- E. 141ST STREET, from Park Avenue to Rider Avenue.
E. 190TH STREET, from Jerome Avenue to Creston Avenue.

Regulating, Grading and Paving with Granite Blocks.

- EXTERIOR STREET, from University Heights to Fordham Road.
FORDHAM ROAD, from Exterior Street westerly to the Public Dock.
SENECA AVENUE, from Hunts Point Avenue to 100 feet east of Edgewater Road.

Regulating, Grading and Paving with Sheet Asphalt.

- E. 140TH STREET, from Park Avenue to Morris Avenue.

Paving with Granite Blocks.

- E. 170TH STREET, from Bristow Street to Wilkins Avenue.
GERMAN PLACE, from Westchester Avenue to Rae Street.
E. 179TH STREET, from Third Avenue to Park Avenue.
CEDAR AVENUE, from Sedgwick Avenue to W. 179th Street; and in W. 177TH STREET, from west of Cedar Avenue to railroad.

Paving with Sheet Asphalt.

- BATHGATE AVENUE, from 188th Street to Fordham Road.
BECK STREET, from 10 feet north of N. C. line of Leggett Avenue to about 85 feet north therefrom.
W. 230TH STREET, from Broadway to Corlear Avenue.
ZEREGA AVENUE, from Westchester Avenue to St. Raymond Avenue.
E. 180TH STREET, from Devoe Avenue to Morris Park Avenue.
HOE AVENUE, from 167th Street to West Farms Road.

Paving with Asphalt Blocks.

- E. 165TH STREET, from Union Avenue to Stebbins Avenue.
E. 165TH STREET, from Grant Avenue to Morris Avenue.

Paving with Bituminous Concrete.

- WALTON AVENUE, from E. 177th Street to Tremont Avenue.
OGDEN AVENUE, from W. 169th Street to Aqueduct Avenue.
MORRIS AVENUE, from E. 166th Street to 170th Street.
HOE AVENUE, from E. 173rd Street to Boston Road.
FINDLAY AVENUE, from E. 165th Street to 166th Street.
VYSE AVENUE, from E. 173rd Street to Tremont Avenue.
GARRISON AVENUE, from Tiffany Street to Hunt's Point Road.
NELSON AVENUE, from Featherbed Lane to Macomb's Road.
BAILEY AVENUE, from W. 238th Street to Kingsbridge Avenue.
BRANDT PLACE, from University Avenue to Nelson Avenue; and in WEST 174TH STREET, from Nelson Avenue to Macomb's Road.
KINGSBRIDGE AVENUE, from W. 230th Street to W. 234th Street.
TREMONT AVENUE, from Westchester Avenue to west side of Rosedale Avenue.
CLASON POINT ROAD, from Westchester Avenue to East River.

Paving with Sheet Asphalt and Asphalt Blocks.

- W. 231ST STREET, from Corlear Avenue to Bailey Avenue.
LONGWOOD AVENUE (where not already paved), from Westchester Avenue to Southern Boulevard.

Paving with Asphalt Block and Granite Block.

- BAILEY AVENUE, from Albany Road to Ft. Independence Street.

Curbing and Flagging.

BEACH AVENUE, from Gleason Avenue to Watson Avenue.

Filling in Sunken Lots.

W. 233RD STREET to a point 150 feet south of 236th Street, from west house line of Broadway to east house line of Putnam Avenue.

TABLE IV.

Contracts Forwarded for Letting.

Sewers and Appurtenances.

- ST. LAWRENCE AVENUE, between Tremont Avenue and Merrill Street; and in COMMONWEALTH AVENUE, between Tremont Avenue and Merrill Street.
- ST. LAWRENCE AVENUE, between Tremont Avenue and Randolph Avenue; and in BEACON AVENUE, between Tremont Avenue and Rosedale Avenue; and in COMMONWEALTH AVENUE, between Beacon Avenue and Tremont Avenue.
- ST. RAYMOND AVENUE, between Parker Street and Zerega Avenue; and in MACLAY AVENUE, between Parker Street and Zerega Avenue; and in ZEREGA AVENUE, between St. Raymond Avenue and Lyvere Street.
- PUGSLEY AVENUE, between Westchester Avenue and McGraw Avenue.
- LIEBIG AVENUE, between W. 259th Street and W. 260th Street; and a temporary connection at Liebig Avenue and W. 260th Street; and in W. 260TH STREET, between Liebig Avenue and Riverdale Avenue; and in RIVERDALE AVENUE, between W. 259th Street and W. 261st Street.
- MACLAY AVENUE, between Zerega Avenue and Seddon Street.
- W. 254TH STREET, between Broadway and Fieldston Road.
- GUN HILL ROAD, from the existing sewer in Olinville Avenue to Perry Avenue; and in WEBSTER AVENUE, between Gun Hill Road and E. 211th Street; and in DECATUR AVENUE, between Gun Hill Road and the summit 300 feet southerly therefrom; and in WEBSTER AVENUE (east side), between Gun Hill Road and E. 210th Street; and in WEBSTER AVENUE, from the east side to the west side, at E. 210th Street; and in WEBSTER AVENUE (west side), between E. 210th Street and Gun Hill Road; and in PARKSIDE PLACE, between E. 210th Street and the summit 200 feet north of E. 207th Street.
- W. 236TH STREET, between Broadway and Kingsbridge Avenue.
- WATSON AVENUE, between Pugsley Avenue and Theriot Avenue; and in THIÉRIOT AVENUE, between Watson Avenue and Westchester Avenue.
- MONTEREY AVENUE, between E. 178th Street and E. 179th Street.
- LAFAYETTE AVENUE, between Longwood Avenue and Tiffany Street.
- ST. RAYMOND AVENUE, between Parker Street and Odell Street.
- MARMION AVENUE, between E. 176th Street and E. 175th Street.
- LAFAYETTE AVENUE, between Longwood Avenue and Tiffany Street.
- ST. LAWRENCE AVENUE, between Gleason Avenue and the summit southerly therefrom.
- BEACH AVENUE, between Wood Avenue and Mansion Street; and in MERRILL STREET, between Beach Avenue and St. Lawrence Avenue.
- COLLEGE AVENUE, between E. 167th Street and E. 168th Street.

GLEASON AVENUE, between Metcalf Avenue and St. Lawrence Avenue; and in ST. LAWRENCE AVENUE, between Gleason Avenue and Westchester Avenue; and in WESTCHESTER AVENUE (south side), between St. Lawrence Avenue and Taylor Avenue.

ST. RAYMOND AVENUE, between St. Peter's Avenue and Overing Street.

ST. RAYMOND AVENUE, between Zerega Avenue and St. Peter's Avenue.

BLACKROCK AVENUE, between Pugsley Avenue and Virginia Avenue.

TAYLOR AVENUE, between Wood Avenue and Walker Avenue; and in ARCHER AVENUE, between Theriot Avenue and Beach Avenue; and in GUERLAIN STREET, between Leland Avenue and Beach Avenue; and in WALKER AVENUE (both sides), between Taylor Avenue and Leland Avenue; and in THERIOT AVENUE, between Walker Avenue and the summit south of Guerlain Street.

SPUYTEN DUYVIL OUTLET SEWER, from Harlem River ship canal to former right-of-way of the N. Y. C. & H. R. R. R. and in said right-of-way to W. 230th Street.

POWELL AVENUE, between Pugsley Avenue and Virginia Avenue; and in VIRGINIA AVENUE, between Powell Avenue and Westchester Avenue. and in GLEASON AVENUE, between Pugsley Avenue and Virginia Avenue; and in ELLIS AVENUE, between Pugsley Avenue and Virginia Avenue; and in NEWBOLD AVENUE, between Tremont Avenue and Virginia Avenue.

OLMSTEAD AVENUE, between Hermany Avenue and Turnbull Avenue.

E. 207TH STREET, between Bainbridge Avenue and Perry Avenue.

WALDO AVENUE, between W. 242nd Street and W. 236th Street; and in W. 236TH STREET, between Waldo Avenue and Riverdale Avenue; RIVERDALE AVENUE, between W. 236th Street and W. 238th Street; Greystone AVENUE, between W. 236th Street and a point 500 feet north of W. 238th Street; W. 238TH STREET, between Waldo Avenue and Riverdale Avenue.

CASTLE HILL AVENUE, between Westchester Avenue and Parker Street.

LAFAYETTE AVENUE, between Bronx River and Damis Avenue; and in

DAMIS AVENUE, between Bronx River Avenue and Westchester Avenue.

Rebuilding Sewers and Appurtenances.

TINTON AVENUE, between E. 156th Street and E. 165th Street; and in E. 160TH STREET, between Tinton Avenue and Forest Avenue; in E. 165TH STREET, between Tinton Avenue and Forest Avenue; in FOREST AVENUE, between E. 166th Street and Home Street.

E. 146TH STREET, between Brook Avenue and St. Ann's Avenue; and in ST. ANN'S AVENUE, between E. 146th Street and E. 147th Street.

Receiving Basins and Appurtenances.

Northeast, northwest, southeast and southwest corners of LONGFELLOW AVENUE and Seneca Avenue.

Southwest corner of ST. ANN'S AVENUE and E. 161st Street.

Northeast corner of AQUEDUCT AVENUE and W. 181st Street.

Northeast and southeast corners of GARRISON AVENUE and Barretto Street.

East side of BAILEY AVENUE, opposite West 231st Street; and northwest and southwest corners of W. 236TH STREET and Bailey Avenue; and on east side of Bailey Avenue, opposite West 236th Street.

Northeast corner of BROADWAY and W. 230th Street.

North Side of E. 180TH STREET, opposite Bronx Park Avenue.

Northeast corner of STEBBINS AVENUE and E. 169th Street.

Southeast and southwest corners of WEST 231ST STREET and Albany Crescent.

Northeast corner of MORRIS AVENUE and McClellan Street.
 Northeast corner of JEROME AVENUE and East 198th Street; on southwest corner of GRAND BOULEVARD and CONCOURSE and E. 198th Street; and on west side of Creston Avenue, opposite E. 197th Street.
 Southwest corner of CHISHOLM STREET and Intervale Avenue.
 Northeast corner of W. 169TH STREET and Inwood Avenue; and at the southeast corner of Inwood Avenue and Cromwell Avenue.

Catch Basins and Appurtenances.

PALISADE PLACE, about 110 feet east of Sedgwick Avenue.

Regulating, Grading, etc.

SPUYTEN DUYVIL ROAD, from Johnson Avenue to north side of W. 230th Street.

MACLAY AVENUE, from Zerega Avenue to Walker Avenue.

TREMONT AVENUE, from the present terminus at Ludlow Avenue to Ft. Schuyler Road.

W. 179TH STREET, from Osborne Place to Aqueduct Avenue.

BEACH AVENUE, from Bronx River Avenue to Gleason Avenue.

W. 172ND STREET, from Jerome Avenue to Inwood Avenue.

TAYLOR AVENUE, from Gleason Avenue to Westchester Avenue.

E. 198TH STREET, from Jerome Avenue to Creston Avenue.

GLEBE AVENUE, from Zerega Avenue to Overing Street.

RANDOLPH AVENUE, from St. Lawrence Avenue to Beach Avenue.

W. 172ND STREET, from Aqueduct Avenue to Jessup Avenue.

E. 222ND STREET, from Bronxwood Avenue to Arnow Street.

VAN NEST AVENUE, from West Farms Road to Bear Swamp Road.

STORROW STREET, from Public Place at 177th Street and Westchester Avenue to Unionport Road.

GRAY STREET, from Tremont Avenue to Unionport Road.

BEACH AVENUE, from Gleason Avenue to Walker Avenue.

E. 187TH STREET, from Valentine Avenue to Marion Avenue; and Building Steps and appurtenances where necessary.

PUGSLEY AVENUE, from McGraw Avenue to Tremont Avenue.

ST. LAWRENCE AVENUE, from Randolph Avenue to Westchester Avenue.

FIELDSTON AVENUE, from Mosholu Avenue to a point about 303 feet north of W. 250th Street.

WHITTIER STREET, from Seneca Avenue to Lafayette Avenue.

MORRIS AVENUE, from Fordham Road to E. 191st Street; and in E. 191ST STREET, from Morris Avenue to Creston Avenue.

NEWTON AVENUE, from W. 253rd Street to W. 260th Street.

E. 174TH STREET, from Southern Boulevard to the easterly side of Boone Avenue.

NORTH STREET, from Aqueduct Avenue East to Jerome Avenue.

PARK STREET, from E. 149th Street to Westchester Avenue.

TAYLOR AVENUE, from Westchester Avenue to 250 feet north of Wood Avenue.

UNIONPORT ROAD, from Morris Park Avenue to Walker Avenue.

W. 234TH STREET, from Kingsbridge Avenue to a point 150 feet west of Tibbett Avenue.

E. 190TH STREET, from Jerome Avenue to Creston Avenue.

VIRGINIA AVENUE, from Public Place at intersection of Westchester Avenue and 177th Street to Ludlow Avenue.

W. 234TH STREET, from Kingsbridge Avenue to a point 150 feet west of Tibbett Avenue.

FRISBY AVENUE, from Walker Avenue to Zerega Avenue.
E. 190TH STREET, from Jerome Avenue to Creston Avenue.
FORDHAM ROAD, from Harlem River Terrace to Webster Avenue.
E. 164TH STREET, from Sheridan Avenue to Jerome Avenue.
W. 254TH STREET, from Broadway and grade plus 57.2, about 235 feet west
of the westerly house line of Valles Avenue.
WHITE PLAINS AVENUE, from Walker Avenue to Westchester Avenue.

Regulating, Grading and Steps.

SUMMIT PLACE, from Heath Avenue to Bailey Avenue.
E. 168TH STREET, from Clay Avenue to Morris Avenue.

Regulating, Grading and Paving with Granite Blocks.

EXTERIOR STREET, from University Heights Bridge to Fordham Road; and
FORDHAM ROAD, from Exterior Street, westerly to the Public Dock.

Paving with Sheet Asphalt.

W. 230TH STREET, from Broadway to Corlear Avenue.
E. 180TH STREET, from Devoe Avenue to Morris Park Avenue.
E. 140TH STREET, from Park Avenue to Morris Avenue.
ZEREKA AVENUE, from Westchester Avenue to St. Raymond Avenue.

Repaving with Sheet Asphalt.

WALTON AVENUE, from E. 149th Street to E. 151st Street.
BOSTON ROAD, from E. 165th Street to Jefferson Street; and E. 169TH
STREET, from Boston Road to Franklin Avenue.
BOSTON ROAD, from Prospect Avenue to the Southern Boulevard.
BECK STREET, from Leggett Avenue to Longwood Avenue; and in KELLY
STREET, from E. 156th Street to Longwood Avenue; and in E. 156TH
STREET, from Kelly Street to Beck Street.
JACKSON AVENUE, from E. 149th Street to Westchester Avenue.
SUMMIT AVENUE, from W. 165th Street to W. 166th Street.

Paving with Asphalt Blocks.

BATHGATE AVENUE, from E. 188th Street to Fordham Road.
LONGFELLOW AVENUE, from Lafayette Avenue to the N. Y., N. H. and
H. R. R. R.
E. 163TH STREET, from Union Avenue to Stebbins Avenue.
E. 165TH STREET, from Grant Avenue to Morris Avenue.

Repaving with Asphalt Blocks.

MORRIS AVENUE, from E. 156th Street to E. 161st Street.

Paving with Sheet Asphalt and Asphalt Blocks.

W. 231ST STREET, from Corlear Avenue to Bailey Avenue.

Repaving with Sheet Asphalt and Asphalt Blocks.

FOX STREET, from 165th Street northerly to Intervale Avenue.
CAULDWELL AVENUE, from Westchester Avenue to E. 161st Street.
LONGWOOD AVENUE, from Southern Boulevard to Westchester Avenue.

Paving with Bituminous Concrete.

LIND AVENUE, from the 23rd and 24th Ward line to Aqueduct Avenue; and
AQUEDUCT AVENUE, from Lind Avenue to Washington Bridge.
E. 203ND STREET, from Webster Avenue to the N. Y. & H. R. R.
WALTON AVENUE, from E. 177th Street to Tremont Avenue.
W. 236TH STREET, from Broadway and Kingsbridge Avenue; and in W. 238th
Street, between Broadway and Kingsbridge Avenue; and in Kingsbridge Ave-
nue, between W. 234th Street and W. 238th Street.

OGDEN AVENUE, from W. 169th Street to Aqueduct Avenue.
 MORRIS AVENUE, from E. 166th Street to E. 170th Street.
 HOE AVENUE, from E. 173rd Street to E. Boston Road.
 VYSE AVENUE, from E. 173rd Street to E. 177th Street.
 FINDLAY AVENUE, from E. 165th Street to E. 166th Street.
 NELSON AVENUE, from Featherbed Lane to Macomb's Road.
 BRANDT PLACE, from University Avenue to Nelson Avenue; and WEST
 174TH STREET, from Nelson Avenue to Macomb's Road.
 GARRISON AVENUE, from Tiffany Street to Hunt's Point Avenue.
 BAILEY AVENUE, from W. 238th Street to Kingsbridge Road.
 KINGSBRIDGE AVENUE, from 230th Street to 234th Street.
 MORRIS AVENUE, from E. 166th Street to E. 170th Street.
 CLASON POINT ROAD, from Westchester Avenue to the East River.

Repaving with Bituminous Concrete.

BOSTON ROAD (a strip 16 feet wide), from White Plains Road to the City Line.

Paving with Granite Blocks.

RIVER AVENUE, from E. 149th Street to a point about 451 feet south of E.
 151st Street.
 GERMAN PLACE, from Westchester Avenue to Rae Street.
 CEDAR AVENUE, from Sedgwick Avenue to W. 179th Street; and W. 177TH
 Street, from Cedar Avenue to N. Y. & P. R. R.
 E. 179TH STREET, from Park Avenue to Third Avenue.
 E. 170TH STREET, from Bristow Street to Wilkins Place.

Repaving with Granite Blocks.

BROOK AVENUE, from E. 156th Street to Third Avenue.
 E. 150TH STREET, from Third Avenue to Melrose Avenue.
 E. 151ST STREET, from Third Avenue to Melrose Avenue.
 E. 155TH STREET, from Third Avenue to Elton Avenue.
 ELTON AVENUE, from Third Avenue to E. 155th Street.
 WEBSTER AVENUE, from E. 178th Street to E. 187th Street.
 WESTCHESTER AVENUE, from Southern Boulevard to Ward Avenue.
 TREMONT AVENUE, from Third Avenue to Boston Road.
 E. 156TH STREET, from Cauldwell Avenue to Dawson Street.
 WEBSTER AVENUE, from Gun Hill Road to the north side of 233rd Street.
 E. 169TH STREET, from Boston Road to E. 167th Street; and in E. 167TH
 STREET, from E. 169th Street to Southern Boulevard.

Repaving with Redressed Granite Blocks.

TREMONT AVENUE, from Webster Avenue to easterly side of Third Avenue.

Paving with Granite Blocks and Asphalt Blocks.

BAILEY AVENUE, from Albany Road at W. 234th Street to Ft. Independence Street.

Guard Rail.

Northeast corner of BROADWAY and W. 236th Street.
 Northwest corner of E. 182ND STREET and Webster Avenue.
 Sunken lots Nos. 985 and 987 Intervale Avenue.
 West side of PARK AVENUE, from the northwest corner of 184th Street to
 a point about 217 feet northerly therefrom.
 Block No. 2744 bounded by Hoe Avenue, 167th Street and West Farms Road.
 Northerly side of E. 169TH STREET, between Hughes Avenue and Belmont
 Avenue.
 Southeast corner of 178TH STREET and Prospect Avenue.

ST. LAWRENCE AVENUE, between Gleason Avenue to the summit southerly therefrom.

BLACKROCK AVENUE, between Pugsley Avenue and Virginia Avenue, etc.

Receiving Basins and Appurtenances.

Southeast corner of ALEXANDER AVENUE and E. 135th Street; and at the southeast corner of LINCOLN AVENUE and E. 135th Street.

Southeast and southwest corners of CANNON PLACE and W. 238th Street; and on the east and west side of Cannon Place, between Giles Place and W. 238th Street.

Southwest corner of FOX STREET and Inwood Avenue.

Northeast, northwest, southeast and southwest corners of LONGFELLOW AVENUE and Seneca Avenue.

Southwest corner of ST. ANN'S AVENUE and E. 161st Street.

North side of E. 180TH STREET, opposite Bronx Park Avenue.

Northeast corner of AQUEDUCT AVENUE and W. 181st Street.

Northeast corner of BROADWAY and W. 230th Street.

Northeast corner of STEBBINS AVENUE and E. 169th Street.

East side of BAILEY AVENUE, opposite West 233rd Street; northwest and southwest corner of WEST 236TH STREET and Bailey Avenue; east side of BAILEY AVENUE, opposite W. 236th Street.

Northeast and southeast corners of GARRISON AVENUE and Barretto Street.

Regulating, Grading, etc.

PALISADE PLACE, from Popham Avenue to the change of grade about 100 feet east of Sedgwick Avenue.

WHITE PLAINS AVENUE, from Morris Park Avenue to Walker Avenue.

WESTCHESTER AVENUE, from Main Street (West Farms Road) to the Eastern Boulevard at Pelham Bay Park, except at Westchester Creek.

BRONXWOOD AVENUE, from Gun Hill Road to Burke Avenue.

W. 165TH STREET, from Woodycrest Avenue to Anderson Avenue.

RANDALL AVENUE, from Leggett Avenue to the Bronx River.

TIEBOUT AVENUE, from Ford Street to E. 183rd Street.

AQUEDUCT AVENUE EAST, from E. 180th Street to E. 184th Street.

THERIOT AVENUE, from Wood Avenue to Gleason Avenue.

JEROME AVENUE, from 190th Street to point 600 feet north of Van Cortlandt Avenue.

242ND STREET, from the easterly side of Katonah Avenue to the northerly boundary line of the City of New York.

GARFIELD STREET, from Morris Park Avenue to the N. Y., N. H. & H. R. R.

PAULDING AVENUE, from E. 222nd Street to E. 233rd Street.

WEST FARMS ROAD, from Morris Park Avenue to the intersection of Westchester Avenue and former Main Street.

E. 149TH STREET, from the Southern Boulevard to the East River.

W. 230TH STREET, from Bailey Avenue to Riverdale Avenue; and in W. 231ST STREET, from Bailey Avenue to Riverdale Avenue.

SPUYTEN DUYVIL ROAD, from Johnson Avenue to the northerly side of W. 230th Street.

DORSEY STREET, from Zerega Avenue to Seddon Street.

PARKER STREET, from Westchester Avenue to Lyon Avenue.

E. 193RD STREET, from Bainbridge Avenue to Webster Avenue.

FULLER STREET, from Seddon Street to Zerega Avenue.

E. 223RD STREET, from Bronxwood Avenue to Laconia Avenue; and in E.

224TH STREET, from Bronxwood Avenue to Laconia Avenue; and in E.

225TH STREET, from Bronxwood Avenue to Laconia Avenue.

Cleaning and Painting.

The steel and iron work of the bridges over the New York Central and Hudson River Railroad tracks at Gerard and River Avenues.

Repairing Bridge.

EAGLE AVENUE, and E. 161st Street.

Repairing Sidewalk.

Northwest corner of THIRD AVENUE and St. Paul's Place.

Southwest corner of THIRD AVENUE and E. 149th Street.

East 205th Street, in front of Lots Numbered 9, 10, 11, 12, 30, 88 and 89 in Block No. 3341.

TABLE V.

Assessment Lists Forwarded.

Sewers and Appurtenances.

WESTCHESTER AVENUE, between Zerega Avenue and Castle Hill Avenue; and in GLOVER STREET, between Westchester Avenue and Lyon Avenue; and in DORIS STREET, between Westchester Avenue and summit north of Westchester Avenue; and in LUDLOW AVENUE, between Pugsley Avenue and Zerega Avenue; and in CASTLEHILL AVENUE, between Ludlow Avenue and Blackrock Avenue; and in E. 177TH STREET, between Ludlow Avenue and Havemeyer Avenue; and in WESTCHESTER AVENUE, between Pugsley Avenue and Olmstead Avenue.

AUSTIN PLACE, between E. 144th Street (St. Joseph's Street) and E. 147th Street.

WALKER AVENUE, between Westchester Square and Overing Street; and in BENSON AVENUE, between Westchester Square and Walker Avenue; and in OVERING STREET, between Westchester Square and Walker Avenue; and in ST. PETER'S AVENUE, between Westchester Avenue and Walker Avenue; and in ROWLAND STREET, between Westchester Avenue and St. Raymond Avenue; and in ZEREGA AVENUE, between Westchester Avenue and Glebe Avenue; and in TRATMAN AVENUE, between Zerega Avenue and Benson Avenue; and in FRISBY AVENUE, between Zerega Avenue and Walker Avenue; and in GLEBE AVENUE, between Rowland Street and Overing Street, and in MACLAY AVENUE, between St. Peter's Avenue and Benson Avenue.

WHITE PLAINS AVENUE (both sides), between E. 242nd Street and the City Line.

EDGEWATER ROAD, between Seneca Avenue and Garrison Avenue.

LURTING AVENUE, between Walker Avenue and property of N. Y., N. H. & H. R. R.

TIFFANY STREET, between Whitlock Avenue and Garrison Avenue.

CASTLEHILL AVENUE, between Parker Street and Walker Avenue.

ST. GEORGE'S CRESCENT, between 206th Street and Van Cortland Avenue.

TREMONT AVENUE, between Sedgwick Avenue and Aqueduct Avenue; and in AQUEDUCT AVENUE (west side), between Tremont Avenue and W. 176th Street; and in ANDREWS AVENUE, between Tremont Avenue and the first summit south therefrom.

HAVILAND AVENUE, between Zerega Avenue and summit west of Havemeyer Avenue; in **POWELL AVENUE**, between Zerega Avenue and summit west of Havemeyer Avenue; and in **GLEASON AVENUE**, between Zerega Avenue and summit west of Havemeyer Avenue; **ELLIS AVENUE**, between Zerega Avenue and summit west of Pugsley Avenue; and in **E. 177TH STREET** (north side), between Pugsley Avenue and summit west of Gleason Avenue; and in **E. 177TH STREET** (south side), between Ellis Avenue and Gleason Avenue; in **NEWBOLD AVENUE**, between Zerega Avenue and Havemeyer Avenue; and in **WATERBURY AVENUE**, between Zerega Avenue and Havemeyer Avenue; and in **NEWBOLD AVENUE**, between Pugsley Avenue and the summit east of Castlehill Avenue; in **OLMSTEAD AVENUE**, between Ellis Avenue and Westchester Avenue; and in **HAVEMEYER AVENUE**, between Watson Avenue and Waterbury Avenue; and in **CASTLEHILL AVENUE**, between Gleason Avenue and Westchester Avenue.

MCGRAW AVENUE, between Theriot Avenue and Taylor Avenue.

HAVEMEYER AVENUE, between Lafayette Avenue and Watson Avenue; and in **E. 177TH STREET**, between Havemeyer Avenue and summit east of Watson Avenue; in **TURNBULL AVENUE**, between Zerega Avenue and Havemeyer Avenue; and in **HERMANY AVENUE**, between Zerega Avenue and the summit west of Castlehill Avenue; in **STORY AVENUE**, between Zerega Avenue and the summit west of Castlehill Avenue; in **QUIMBY AVENUE**, between Zerega Avenue and Castlehill Avenue; and in **HOUGHTON AVENUE**, between Zerega Avenue and Castlehill Avenue; and in **CHATTERTON AVENUE**, between Zerega Avenue and Castlehill Avenue; and in **BLACKROCK AVENUE**, between Havemeyer Avenue and Castlehill Avenue; and in **E. 177TH STREET** (north side), between Blackrock Avenue and Watson Avenue; and in **WATSON AVENUE**, between Havemeyer Avenue and E. 177th Street; and in **CASTLEHILL AVENUE**, between Story Avenue and Turnbull Avenue.

BEACH AVENUE, between Wood Avenue and Randolph Avenue.

COLLEGE AVENUE, between E. 167th Street and E. 168th Street.

PARKER STREET, between Westchester Avenue and Castlehill Avenue.

PERRY AVENUE, between Gun Hill Road and E. 211th Street; and in **E. 211TH STREET**, between Perry Avenue and Woodlawn Road; and in **WOODLAWN ROAD**, between Gun Hill Road and E. 212th Street; and in **E. 212TH STREET**, between Woodlawn Road and Jerome Avenue; and in **ROCHAMBEAU AVENUE**, between E. 212th Street and Gun Hill Road; and in **DE KALB AVENUE**, between E. 212th Street and Gun Hill Road; and in **JEROME AVENUE**, between E. 212th Street and summit south.

E. 170TH STREET, between Morris Avenue and the Grand Boulevard and Concourse; and in **THE GRAND BOULEVARD AND CONCOURSE** (east side), between E. 167th Street and E. 172nd Street.

W. 236TH STREET, between Broadway and Kingsbridge Avenue; and in **W. 238TH STREET**, between Broadway and Kingsbridge Avenue; and in **KINGSBRIDGE AVENUE**, between W. 234th Street and W. 238th Street.

PUGSLEY AVENUE, between Westchester Avenue and McGraw Avenue.

MARMION AVENUE, between E. 176th Street and E. 175th Street.

HERMANY AVENUE, between Pugsley Avenue and summit east of Olmstead Ave.; and in **STORY AVENUE**, between Pugsley Avenue and summit east of Olmstead Avenue.

ST. LAWRENCE AVENUE, between Tremont Avenue and Merrill Street.

SEDGWICK AVENUE, from Van Cortlandt Avenue to change of grade about 430 feet westerly therefrom.

MACLAY AVENUE, from Zerega Avenue to Walker Avenue.

KINGSBRIDGE ROAD, from Bailey Avenue to the boundary line between the Borough of The Bronx and the Borough of Manhattan.

GRAND AVENUE, from W. 181st Street to W. 184th Street.

VAN CORTLANDT AVENUE, from Sedgwick Avenue to Albany Road.

E. 198TH STREET, from Jerome Avenue to Creston Avenue.

GLEBE AVENUE, from Zerega Avenue to Overing Street.

W. 235TH STREET, from Spuyten Duyvil Parkway to Riverdale Avenue.

198TH STREET, from Jerome Avenue to Creston Avenue.

W. 233RD STREET, from Broadway to Albany Road.

RANDOLPH AVENUE, from St. Lawrence Avenue to Beach Avenue.

W. 172ND STREET, from Jerome Avenue to Inwood Avenue.

ALBANY ROAD, from Van Cortlandt Park South to Bailey Avenue.

ST. LAWRENCE AVENUE, from West Farms Road to Westchester Avenue.

ROSEDALE AVENUE, from Walker Avenue to Tremont Avenue.

LELAND AVENUE, from Walker Avenue to Westchester Avenue.

TAYLOR AVENUE, from Gleason Avenue to Westchester Avenue.

E. 236TH STREET, from White Plains Road to Barnes Avenue.

GLEBE AVENUE, from Westchester Avenue to Zerega Avenue.

PUGSLEY AVENUE, from McGraw Avenue to Tremont Avenue.

E. 165TH STREET, from about 122 feet west of Grant Avenue to about 76 feet west of Walton Avenue.

CORLEAR AVENUE, from 230th Street to 240th Street.

WHITTIER STREET, from Seneca Avenue to Lafayette Avenue.

ALBANY ROAD, from Bailey Avenue north of 230th Street to Bailey Avenue, north of 233rd Street.

GLEBE AVENUE, from Zerega Avenue to Overing Street.

Regulating and Flagging.

Westerly side of **GARRISON AVENUE**, from Hunt's Point Avenue to Faile Street.

Northerly side of **E. 139TH STREET**, about 200 feet east of **ST. ANN'S AVENUE**, running easterly about 70 feet.

Regulating, Grading and Paving with Granite Blocks.

GARRISON AVENUE, from Whittier Street to the Bulkhead Line of the Bronx River.

TIFFANY STREET, from the northerly side of former Edgewater Road to the Dock recently constructed at the foot of said Tiffany Street.

Regulating, Regrading and Paving with Asphalt Blocks.

TIFFANY STREET, from Southern Boulevard to Lafayette Avenue.

Regulating, Grading and Paving with Bituminous Concrete.

E. 202ND STREET, from Webster Avenue to the N. Y. and Harlem Railroad.

Regulating, Regrading and Paving with Bituminous Concrete.

MANIDA STREET, from Lafayette Avenue to Oak Point Avenue.

Regulating, Grading and Paving with Asphalt Blocks.

BARRETTO STREET, from Southern Boulevard to Whitlock Avenue.

Paving with Asphalt Blocks.

E. 133RD STREET, from Cypress Avenue to Southern Boulevard.

HOE AVENUE, from E. 172nd Street to E. 173rd Street.

BELMONT AVENUE, from E. 175th Street to E. 177th Street.

BRYANT AVENUE, from E. 172nd Street to E. 174th Street.

TELLER AVENUE, from E. 154th Street to E. 167th Street.
MOSHOLU PARKWAY SOUTH, from Briggs Avenue to Van Cortlandt Avenue.

HEATH AVENUE, from Bailey Avenue to Boston Road.

E. 165TH STREET, from Intervale Avenue to Westchester Avenue.

WALKER AVENUE, from Morris Park Avenue to Unionport Road.

HEATH AVENUE, from Boston Avenue to Ft. Independence Street.

W. 231ST STREET, from Corlear Avenue to Bailey Avenue.

AQUEDUCT AVENUE, from the southerly crosswalk at Burnside Avenue to the northerly side of 181st Street.

LONGFELLOW AVENUE, from Lafayette Avenue to the N. Y., N. H. and H. R. R.

E. 165TH STREET, from Union Avenue to Stebbins Avenue.

WALKER AVENUE, from Morris Park Avenue to Unionport Road.

Paving with Sheet Asphalt.

BEAUMONT AVENUE, from Grote Street to E. 189th Street.

E. 179TH STREET, from Park Avenue West to Valentine Avenue.

E. 173RD STREET, from Minford Place to Southern Boulevard.

BECK STREET, from a point about 10 feet north to a point about 35 feet north of the north curb line of Leggett Avenue.

BATHGATE AVENUE, from E. 188th Street to Fordham Road.

Paving with Granite Blocks.

E. 167TH STREET, from Jerome Avenue to about 124 feet east of Gerard Avenue; and from 94 feet west of Sherman Avenue to the N. Y. & Harlem R. R.

RIVER AVENUE, from E. 149th Street to a point about 451 feet south of E. 151st Street.

E. 168TH STREET, from Clay Avenue to Webster Avenue.

Paving with Granite and Asphalt Blocks.

BAILEY AVENUE, from Albany Road at W. 234th Street to Ft. Independence Street.

Paving with Sheet Asphalt and Asphalt Block.

LONGWOOD AVENUE, from Southern Boulevard to Westchester Avenue.

Paving with Bituminous Concrete.

E. 236TH STREET, from Mount Vernon Avenue to Webster Avenue.

COSTER STREET, from Lafayette Avenue to Randall Avenue.

COMMONWEALTH AVENUE, from Walker Avenue to Merrill Street.

CITY ISLAND AVENUE, from approach to City Island Bridge to Long Island Sound.

ST. LAWRENCE AVENUE, from Walker Avenue to Merrill Street.

MARION AVENUE, from E. 189th Street to Fordham Road.

LIND AVENUE, from 23rd and 24th Ward line to Aqueduct Avenue; and

AQUEDUCT AVENUE, from Lind Avenue to Washington Bridge.

DEVOE TERRACE (Park View Place), from Webb Avenue to W. 190th Street.

MORRIS AVENUE, from E. 184th Street to Fordham Road.

WALTON AVENUE, from E. 177th Street to Tremont Avenue.

OGDEN AVENUE, from W. 169th Street to Aqueduct Avenue.

E. 173RD STREET, from Southern Boulevard to Bryant Avenue.

AQUEDUCT AVENUE, from Fordham Road to Kingsbridge Road.

ST. LAWRENCE AVENUE, from Walker Avenue to Merrill Street.

FINDLAY AVENUE, from E. 165th Street to E. 166th Street.

GARRISON AVENUE, from Tiffany Street to Hunt's Point Avenue.
HOE AVENUE, from E. 173rd Street to Boston Road.
W. 261ST STREET, from Riverdale Avenue to Broadway.
VYSE AVENUE, from E. 173rd Street to E. 177th Street.
VYSE AVENUE, from E. 172nd Street to E. 173rd Street.
NELSON AVENUE, from Featherbed Lane to Macomb's Road.

Paving with Bituminous Macadam.

WALTON AVENUE, from Fordham Road to Burnside Avenue.

Erecting Guard Rail.

Northwest corner of WHITE PLAINS AVENUE and 230th Street.

Sunken Lots Nos. 985 and 987 Intervale Avenue.

At the northwest corner of E. 182ND STREET and Webster Avenue.

Reflagging Sidewalks.

Southwest corner of THIRD AVENUE and E. 149th Street.

Repairing Sidewalk.

Northwest corner of THIRD AVENUE and St. Paul's Place.

Setting and Resetting Flagstones and Removing Boulder.

In front of No. 542 East 145th Street.

Fencing Vacant Lots.

West side of PARK AVENUE, from the northwest corner of 184th Street to a point about 217 feet northerly therefrom.

Filling in Sunken Lots.

East side of HUNT AVENUE, beginning 145 feet south of Bronxdale Avenue and extending 75 feet south.

Filling in Sunken Sidewalk.

In front of premises Nos. 525, 527 and 529 E. 134th Street.

New York, January 24, 1914.

TOPOGRAPHICAL BUREAU,
Office of the President of the Borough of The Bronx.

Mr. R. H. Gillespie,

Chief Engineer of Sewers and Highways.

Sir:

I beg to transmit herewith a general recapitulation of the work done in the Topographical Bureau during the year 1913.

The Topographical Bureau is charged with the following:

First: Topographical Survey of the Borough.

Second: Laying out of the Street System and Establishment of grades.

Third: Monumenting of the streets.

Fourth: Making maps in condemnation proceedings.

Fifth: Reports and affidavits concerning dedication.

Sixth: Keep historical record of streets, both public and private.

Seventh: Examine permits for buildings and opening streets to prevent house planting and disturbing of monuments.

Eighth: Numbering of houses.

Ninth: Examine all deeds offered for cession of streets.

Tenth: Furnish various 'bureaus with data regarding street systems, grades and changes thereof.

Eleventh: To keep in custody maps and records of the Topographical Bureau and the filed city map of the Borough.

Twelfth: Correspondence of the bureau.

In fact, the Topographical Bureau supplies the ground work on which all the improvements in the Borough are based.

The topographical survey and the triangulation of the Borough of The Bronx by the United States Coast and Geodetic Survey were completed during 1910 and additional surveying is constantly going on in connection with the monumenting, establishing of grades and street opening matters.

The whole map of the Borough, in sections, has been prepared and forwarded, with the exception of City and Hart's Islands.

Sections 55, 57, 58, 59 and 60 of the final maps were forwarded for adoption during the year.

Sections 56 and 59 were amended.

Three copies for filing of Sections 55, 56 and 61 were prepared and forwarded.

Sections 56 and 61 were filed in the Topographical Bureau.

The establishing of grades of streets and the changes on petitions by property owners require considerable study.

The monumenting of new streets, the referencing, the taking up and the resetting of old monuments in cases where they have been disturbed by the regulating, grading, paving and sewer construction, is being attended to.

The surveys, computations and maps relative to condemnation proceedings for acquiring title to streets have been promptly furnished when requested by Commissioners of Estimate and Assessment.

Twenty-three new proceedings for acquiring title to avenues and streets covering twenty-nine (29) streets were initiated by the Board of Estimate and Apportionment during 1913; and sixteen (16) proceedings previously initiated were amended during the year.

The examination of permits for crossing sidewalks and streets, for moving or altering old buildings and for erection of new ones, requiring very often surveys, is also assigned to the Topographical Bureau.

Over 1,220 communications were referred to the Topographical Bureau during 1913; the majority of them required maps, plans, studies and reports, which are enumerated in the resume of the work, as shown below.

Considerable time is consumed by the Topographical Engineer and his Assistants in giving information, explaining pending local board matters, etc., to outsiders who bring their grievances to this office.

The Topographical force on December 31, 1913, consisted of the following employees: 1 Assistant Engineer in Charge, 12 Assistant Engineers, 2 Transmitters, 2 Transmitters and Computers, 2 Computers, 25 Topographical Draughtsmen, 2 Levelers, 6 Chainmen and Rodmen, 4 Rodmen, 2 Axemen, 1 Stenographer and Typewriter, 3 Clerks, 1 Searcher, 3 Laborers and 1 Driver, making a total of 63 monthly employees and 4 Laborers.

RESUME OF OFFICE WORK AND FIELD WORK.

1. Topographical Survey of the Borough.

2. Laying Out of the Street System and Establishment of Grades.

Maps in seventy-three (73) cases were prepared and submitted for adoption during the year 1913.

Maps in sixty-two (62) cases were prepared in triplicate and forwarded for filing during the year 1913.

3. Monumenting of the Streets.

During the year 1913, three hundred and fifty (350) orders were received for setting, resetting, testing and accurately referencing monuments and one hundred and forty-five (145) orders were brought over from 1912, making in all four hundred and ninety-five (495) orders.

Two hundred and eighty-eight (288) orders of 1913 were attended to and one hundred and twelve (112) orders brought over from 1912 were also attended to, making in all four hundred (400) orders.

The following is a tabulated statement of the office work and field work in relation to monumenting during the year 1913.

Office Work.

Traverses worked up, in feet	227,252
Monument instructions issued	533
Total length of final side and monument lines, in feet	644,818
Length of traversed courses, in feet	1,140,823
Monument co-ordinates calculated	830

Field Work.

Points set	553
Points reset	338
Accurately referenced	260
Accurately measured, in feet	668,133
Taped, in feet	271,146
Concrete monuments made	393
Monuments set	484
Monuments reset	135
Monuments set to grade	144
New monuments used	416
Old monuments used	288
Bolts used	58
Iron boxes set	8
Flags cut	35

4. Making Maps in Condemnation Proceedings.

This work consists of making (a) surveys for damage and profile maps, (b) rule maps, (c) draft damage maps, (d) profiles of avenues and streets, (e) reports as to erection of buildings shown on damage maps, (f) draft benefit maps, (g) final damage and benefit maps, and (h) inspection and testimony.

"a" Damage map surveys were made in forty-seven (47) streets.

The amount of work which was done and completed on the above survey is as follows:

247 houses, 310 fences and 201 stone walls were located; 84,444 linear feet of avenues chained, 243,690 feet taped in location and cross-section measurement and 1,483 angles turned.

Surveys for profile maps were made in sixteen (16) streets.

The amount of work which was done and completed on the above surveys is as follows:

1,885 levels were taken and 12,150 feet taped.

"b" Rule maps, in quadruplicate, were prepared and forwarded with technical descriptions, in triplicate, in thirty (30) street opening proceedings and three (3) amended proceedings for forty-nine (49) streets.

"c" Draft damage maps, in triplicate, were prepared and forwarded in thirty-three (33) proceedings, comprising 1,444 plots, covering 8,396,573.36 square feet or 3,558.633 city lots on forty-eight (48) streets or parts of streets.

"d" Profile maps, showing the physical elevation of the property on the side lines and centre of the street in those blocks only on which buildings have been erected, were made for fourteen (14) street opening proceedings covering twenty-five (25) streets.

"e" Examinations were made in the Bureau of Buildings, Borough of The Bronx, to determine the dates of erection of buildings on certain street opening proceedings, giving the building plan number, the dates of commencement and completion of buildings, and reports were made on twenty-eight (28) street opening proceedings.

"f" Draft benefit maps were prepared in twenty-seven (27) proceedings covering 12,380 benefit plots.

"g" Final copies of damage maps, in triplicate, and benefit maps, in quadruplicate, were forwarded in twenty-seven (27) proceedings comprising 1,619 maps covering 3,313 damage parcels.

"h" After a draft damage map of a street is completed and before forwarding the same, the street was inspected to be assured that no encroachments were omitted.

Testimony was given by various assistants when required by the Corporation Counsel before Commissioners in Condemnation and other proceedings.

5. Reports and Affidavits Concerning Dedication.

Affidavits as to dedication of streets were prepared for transmission to the Corporation Counsel. This required an accurate search of all records in the different city departments and examination and searching as to the physical condition of each street. These affidavits were prepared on ten (10) streets in order to prove dedication and thus avoid street opening proceedings where no additional land is required.

6. Keep Historical Record of Streets, Both Public and Private.

This record is necessary for the determination of the status of streets as to dedication, etc., and for use in condemnation proceedings.

7. Examine Permits for Buildings and Opening Streets to Prevent House Planting and Disturbing of Monuments.

Permits issued by the Department of Water Supply, Gas and Electricity and by the Superintendent of Highways for the opening of streets for water taps, gas and sewer connections and for crossing the sidewalks for excavating, laying new sidewalks and for openings for poles and trees, were examined in relation to their interference with the street monuments and in case this occurred, a \$25 bond was required.

1. Number of permits recorded and examined	6,447
2. Number of permits held for \$25 bond	123
3. Number of permits cancelled where bond had been exacted	28

Location plans of buildings submitted by the Bureau of Buildings were examined in relation to encroachments on land to be taken for street purposes.

1. Number of plans for new buildings	662
2. Number of plans for altering old buildings	668
3. Number of plans for new buildings disapproved on account of encroachments on land to be taken for street purposes	13

Location plans of buildings submitted by the Superintendent of Highways for moving of buildings to new locations were examined in relation to encroachments on land to be taken for street purposes.

1. New location of old buildings approved	86
2. New location of old buildings disapproved	7
3. Number of buildings moved through public highways	16

8. Numbering of Houses.

A complete system of house numbers was established in 1906. The occupants or owners of all the houses in the Borough have been notified of the new numbers of their houses.

A record of the new house numbers is kept in atlases on file in the Topographical Bureau.

New buildings are erected and requests for house numbers are made for same, new numbers being assigned. A record of all these assigned house numbers are also kept in atlases on file.

During the year 1913, 2,213 requests for new numbers were made.

9. Examine all Deeds Offered for Cession of Streets.

In following out the provisions of Section 992 of the Greater New York Charter in reference to ceding of streets, much time was consumed in looking over the deeds of cession and affidavits of title and comparing same with the Land Map of the City of New York. During the year 178 deeds were examined and reported on.

10. Furnish Various Bureaus with Data Regarding Street Systems, Grades and Changes Thereof.

Compilation of dates of filing grades and vesting of title to one hundred and sixteen (116) avenues and streets were furnished to the Bureau of Highways.

Compilation of grades of forty-six (46) streets were made for the Bureau of Designs.

11. To Keep in Custody Maps and Records of the Topographical Bureau and the Filed City Map of the Borough.

During the year 1913, ninety-eight (98) maps, which were ordered to be filed by the Board of Estimate and Apportionment, were deposited in the vault of the Topographical Bureau.

12. Correspondence of the Bureau.

During the year 1913, 1,229 communications were referred for report to the Topographical Bureau by the Chief Engineer of Sewers and Highways, and 1,136 reports and letters were required to be written on these subjects.

MISCELLANEOUS.

During the year, considerable time of the Searcher was occupied in examining and searching through reports, maps, etc., relative to awards for damage on street opening proceedings of the Borough of The Bronx.

Considerable time of the Searcher was occupied in transcribing the records of the Board of Trustees of the Villages of Williamsbridge and South Mount Vernon.

Searches were made in the offices of the County Clerk and Register of the Counties of New York, Kings, Richmond and Westchester in relation to the incorporation of Cemeteries and tabulated for the use of the President of the Borough of The Bronx.

During the year, eleven (11) index maps were prepared for the use of the Chief Engineer of Sewers and Highways and the Topographical Bureau.

Two maps, east and west of the Bronx River, respectively, were prepared showing legal, dedicated and streets in use.

Numerous deeds were copied during the year.

Atlases of the final maps of the Borough of The Bronx have been corrected from time to time as changes therein have been filed; such atlases being in the various offices of the President of the Borough of The Bronx.

Three sets of the final sections of the Borough (Topographical Bureau, Bureau of Design and Division of Street Openings), were brought up to date.

The maps in the vault of the Topographical Bureau are being indexed and cared for and the dates of the topographical surveys compiled and recorded on the topographical sheets.

Eleven (11) property maps, which were filed in the Register's office of New York County, were copied and compared.

The large wall index map (scale 600 feet to the inch) showing all legally acquired streets of the Borough and streets upon which proceedings are now pending were colored from time to time and kept up to date.

During the year 1913, 8,207 blueprints and blackprints were made for the Topographical Bureau, the Bureau of Sewers, Bureau of Highways, Bureau of Design and the Division of Subsurface Records.

The Board of Estimate and Apportionment on April 20, 1911, passed a resolution to authorize the Borough President to sell to the public copies of maps, other than those pertaining to street openings and records of sub-surface structures at certain prices and three hundred and four (304) requests were executed and \$526.73 were received by the General Bookkeeper for the same.

An office to give general information to the public having been established by the President of the Borough of The Bronx in the Municipal Building, many inquiries which come to this Bureau were attended to by the Topographical Bureau. An accurate account of the number of cases could not be kept.

During the year 1913, sixty-three (63) streets or portions of same were vested in the City of New York, (40 east of the Bronx River, a length of 66,104 feet and 23 west of the Bronx River, a length of 40,142 feet) covering a total length of 106,246 feet or 20.12 miles.

Portions of ten streets were declared dedicated to the use of the public.

Considerable amount of work is incurred in making out the monthly returns to the Corporation Counsel's office, as provided by Section 980 of the Greater New York Charter, Revised, as amended by Chapter 394 of the Laws of 1909, which section provides, that a monthly return be forwarded to the Corporation Counsel, verified by the Borough President, showing the names of persons employed, and the number of hours occupied by them in the preparation of maps relating to proceedings for acquiring title to avenues, streets, etc., and the dates of the days of each month so occupied, their respective salaries, and the amount of such salary apportioned to the expense thereof in each proceeding.

Charges were made to ninety-three (93) proceedings at a cost of \$42,708.83.

During 1913, the map of the Borough of The Bronx, east of the Bronx River, was completed and photo-lithographed and printed on a scale of 1,200 feet to the inch and on a scale of 600 feet to the inch.

Many maps, sketches, tracings, black prints and blue prints were made auxiliary to preparing maps for adoption and in connection with various other works under the jurisdiction of the Topographical Bureau; also a considerable amount of copying and searching of records in the different city departments and the Register's Office of New York City and Westchester County at White Plains. Among the more important items under this head are investigations and maps requested by other city departments.

The weekly payroll, in duplicate, of the laborers, etc., assigned to the Topographical Bureau, is prepared every week.

The payroll, in triplicate, of the engineers, draughtsmen, etc., is prepared at the end of each month and all the newly established service records of every employee have to be examined and compared with the weekly reports of work.

Respectfully,

JOHN C. HUME,

Assistant Engineer in Charge.

January 15, 1915.

Hon. Douglas Mathewson,
President, Borough of The Bronx.

Dear Sir:

I beg to transmit herewith a report of the building operations in the Bureau of Buildings, Borough of The Bronx, for the year 1913.

Yours very truly,

ROBERT J. MOOREHEAD,
Superintendent of Buildings, Borough of The Bronx.

BUREAU OF BUILDINGS, BOROUGH OF THE BRONX.

Report of Operations for the Year 1913.

Robert J. Moorehead, Superintendent.

Plans and Specifications for New Buildings Filed and Acted Upon During the Year 1913.

Classification.	No. of Plans.	No. of Bldgs.	Estimated Cost.
Dwelling houses, estimated cost over \$50,000.....	...	...	.....
Dwelling houses, estimated cost bet. \$20,000 and \$50,000.....	2	2	\$40,000
Dwelling houses, estimated cost less than \$20,000.....	76	97	638,975
Brick Tenements, estimated cost over \$15,000.....	202	324	14,907,351
Brick Tenements, estimated cost less than \$15,000.....	4	5	36,500
Frame Tenements	1	1	7,000
Hotels .....	...	...	.....
Stores, estimated cost over \$30,000.....	...	...	.....
Stores, estimated cost between \$30,000 and \$15,000....	2	2	35,000
Stores, estimated cost less than \$15,000.....	36	38	231,750
Office Buildings	11	11	88,225
Manufactories and Workshops	49	51	812,240
Schoolhouses	11	15	1,057,700
Churches	10	11	272,500
Public Buildings, Municipal, Etc.....	8	8	314,323
Public Buildings, Places of Amusement	45	47	982,100
Stables and Garages	49	49	155,000
Frame Dwellings	101	129	478,800
Other Structures	55	56	15,025
Totals	662	846	\$20,072,489

Plans and Specifications for Alterations to Buildings Filed and Acted Upon During Year 1913.

Classification.	No. of Plans.	No. of Bldgs.	Estimated Cost.
Brick Dwellings	36	45	\$67,450
Frame Dwellings	319	369	322,143
Brick Tenements	100	117	135,245
Frame Tenements	21	25	15,775
Hotels	14	15	56,050
Stores	47	49	49,600
Office Buildings	12	13	41,750
Manufactories and Workshops	45	47	200,700
Schools	8	9	122,100
Churches	8	8	76,900
Public Buildings	37	37	180,400
Stables and Garages	11	11	8,625
Miscellaneous	2,529	2,529	352,226
Totals	3,187	3,274	\$1,628,964

Other Applications Filed and Acted Upon During Year 1913.

Nature.	No.	Estimated Cost.
Construction Slips (including temporary structures or ordinary repairs)	1,487	\$232,913
Plumbing and Drainage Slips	895	100,525
"No Construction" Slips	137	16,958
Totals	2,519	\$350,396

New Buildings and Alterations Commenced, Completed, or In Progress During Year 1913.

	Com- menced.	Com- pleted.	In Progress, Dec. 31, 1913.
New Buildings	756	1,029	367
Alterations	655	598	252

Violations of the Law and Unsafe Building Cases Filed During Year 1913.

Nature.	Pending, Dec. 31st, 1912.	Received Since.	Total for Dis- position.	Removed Before Ac- tion by Courts.	Total for Final Disposition.	Pending Dec. 31st, 1913.	Forwarded for Prosecution.
Defective construction materials, etc..	344	1,321	1,665	1,479	1,479	186	174
Erecting, altering or removing with- out permit or after disapproval....	1,368	1,720	2,088	1,808	1,808	280	248
Insufficient means of escape, fire escapes, aisles obstructed, etc.....	1	..	1	..	..	1	..
Defective light and ventilation.....	..	2	2	2	2	..	..
Defective plumbing and drainage..	110	432	542	468	468	74	90
Unsafe Buildings	272	609	872	617	617	255	11
Totals	1,095	4,075	5,170	4,374	4,374	796	523

Notices Issued During Year 1913.

To place fire escapes on buildings.....	..
To remove violations of law	4,501
To repair passenger elevators	8
To remove unsafe buildings	1,218
Letters (including notices of disapproval of plans)....	9,465
Total	15,192

Total Number of Inspections, With Reports, Made by Inspectors During 1913.

By Construction Inspectors	138,649
By Iron and Steel Inspectors	71,294
By Elevator Inspectors	418
By Plumbing and Drainage Inspectors	36,098
By Plastering Inspectors	9,842
Total	256,301

Complaints Received and Investigated During Year 1913.

Nature.	Pending Dec. 31st, 1912.	Received Since.	Totals.	Unfounded.	Notices Issued.	Totals.	Pending Dec. 31st, 1913.
Defective flues	11	11	2	9	11	..
Defective construction materials, etc.	35	35	13	22	35	..
Defective leaders	19	19	7	12	19	..
Erecting and altering without permit	..	75	75	37	38	75	..
Frame structures erected or removed							
without permit	38	38	12	26	38	..
Defective plumbing and drainage.....	..	64	64	36	28	64	..
Insufficient means of escape, aisles ob-							
structed, etc.	4	4	4	..	4	..
Unsafe buildings	1,168	1,168	893	275	1,168	..
Fences over 10 feet high	3	3	2	1	3	..
Wood too near flues	11	11	2	9	11	..
Defective plastering and lathing.....	..	6	6	4	2	6	..
Totals	1,434	1,434	1,012	422	1,434	..

Pieces of Iron and Steel Inspected, with Reports Thereon, Made by Inspectors During the Year 1913.

Beams	41,781
Columns	3,718
Angles	1,164
Channels	10,435
Bases	709
Plates	186
Tees	45
Girders	7,417
Lintels	5,743
Trusses	96
Total	71,294

INSPECTION OF ELEVATORS FOR THE YEAR 1913

Number inspected	418
Found in good order and fit for use	410
Found not in compliance with the law	8

DISPOSITION OF CASES NOT IN COMPLIANCE WITH LAW.

Nature.	Pending last report.	Received since.	Total.	Law complied with.	Now pending.
Defective guide rails, posts and gibs	1	1	1	1	..
Doors and door locks out of repair	4	4	4	4	..
Fronts of cars unprotected	1	1	1	1	..
Run by persons under 18 years old	1	1	1	1	..
Safety attachments out of order	1	1	1	1	..
Gratings	1	..	1	1	..
Totals	1	8	9	9	..
Notices issued				8	
Forwarded for prosecution				1	

COMPARATIVE STATEMENT, YEARS 1912 AND 1913.

	1912.	1913.
Applications for new buildings	929	662
Estimated Cost	\$34,644,460	\$20,072,489
Applications for Alterations	573	3,187
Estimated Cost	\$1,170,777	\$1,628,964
Construction slips filed	1,185	1,487
Estimated Cost	\$141,570	\$232,913
P. & D. slips filed	659	895
Estimated Cost	\$81,323	\$100,525
"No Construction" slips filed	79	137
Estimated Cost	\$11,800	\$16,958
New buildings commenced	1,127	756
New buildings completed	1,460	1,029
Alterations commenced	545	655
Alterations completed	549	598
Violations filed by Inspectors	3,610	3,475
Unsafe building cases filed by Inspectors	719	600
Violations removed	3,839	3,757
Fire escape cases removed	67	..
Unsafe buildings made safe or taken down	659	617
Complaints received and investigated	1,092	1,434
Notices issued (including notices of disapproval of plans)	10,083	9,465
Inspections made by Contruction Inspectors	144,437	138,649
Inspections made by Plastering Inspectors	12,620	9,842
Inspections made by P. & D. Inspectors	32,247	36,098
Inspections made by Elevator Inspectors	421	418
Number of pieces of iron and steel inspected	79,515	71,294