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DEPARTMENT OF PUBLIC WORKS.

Report for the Year and Quarter ending December 31, 1888.

DEPARTMENT OF PUBLIC WORKS—COMMISSIONER'S OFFICE,
NO. 31 CHAMBERS STREET,
NEW YORK, January 1, 1889.

Hon. HUGH J. GRANT, Mayor:

SIR—In compliance with section 49 of the New York City Consolidation Act of 1882, I have the honor to submit herewith my report of the transactions of the Department of Public Works for the quarter ending December 31, 1888, with a brief review of the operations of the Department for the past year, and reports of the heads of bureaux, and other documents containing detailed information:

SUMMARY OF EXPENDITURES FOR THE QUARTER.

(Being amount of requisitions drawn on the Comptroller.)

On account of appropriations raised by taxation.....	\$870,302 76
On account of Local Improvements.....	306,630 22
On account of Funded Debt, for improvement and extension of water supply.....	90,093 23
On account of Revenue Bonds, in anticipation of collection of charges for water-meters.....	6,117 01
On account of Special Fund, for restoring pavements over street openings.....	10,446 12
On account of Gansevoort Market Building Fund.....	71,061 83
Total.....	\$1,354,651 17

SUMMARY STATEMENT OF CONTRACTS.

Contracts Entered Into during the Quarter.

22 sewer contracts, estimated cost.....	\$129,364 12
13 regulating and grading contracts, estimated cost.....	76,250 76
11 paving contracts, estimated cost.....	154,202 75
2 contracts for water-mains, estimated cost.....	36,192 00
2 gas contracts, estimated cost.....	36,000 00
3 miscellaneous contracts, estimated cost.....	31,591 20
45 contracts, under \$1,000 each.....	16,437 47
98 contracts, total estimated cost.....	\$480,038 30

Contracts Completed during the Quarter.

31 sewer contracts, cost.....	\$202,105 65
11 regulating and grading contracts, cost.....	27,590 42
21 paving contracts, cost.....	233,348 71
6 contracts for relaying pavements, cost.....	52,923 57
4 contracts for water-mains, cost.....	54,570 70
7 miscellaneous contracts, cost.....	522,900 25
33 contracts, under \$1,000 each, cost.....	12,235 75
113 contracts, total cost.....	\$1,105,675 05

BUREAU OF CHIEF ENGINEER OF THE CROTON AQUEDUCT.

With an abundance of rainfall, the natural flow of the Croton river has furnished all the water which the Croton Aqueduct is capable of delivering, and the storage reservoirs in the Croton-basin are filled to high-water mark.

The rainfall at the several stations where rain-gauges are kept by the Department, was as follows:

LOCATIONS.	OCTOBER. INCHES.	NOVEMBER. INCHES.	DECEMBER. INCHES.	TOTAL. INCHES.
Boyd's Corners Reservoir.....	4.80	4.49	6.13	15.42
South East Reservoir.....	4.89	4.20	5.89	14.98
Croton Dam.....	4.47	3.33	5.59	13.39
Kensico Reservoir on Bronx river.....	5.35	3.43	4.91	13.69
Central Park Reservoir.....	4.29	3.59	3.19	11.07

The usual work required in the care, repairs and maintenance of the aqueduct, storage reservoirs and lakes, distributing reservoirs, and the operation of the high-service pumping works, have received due attention. In addition to this, the construction of the retaining-wall near Quaker Bridge has been continued and additional retaining-walls have been built on the Third, Fifth and Sixth Divisions of the Aqueduct. The Eighth Division includes the distributing reservoirs in Central Park, and at Fifth avenue and Forty-second street. On the old Central Park Reservoir, the work of excavating rock and earth to deepen it and increase its capacity, has been continued.

In improving the distribution of water and extending it into new streets, 5,486 lineal feet of twelve-inch pipe and 33,412 lineal feet of six-inch pipe have been laid, and 64 stop-cocks and 86 fire-hydrants placed.

The water-service of the city includes the supply of the charitable and correctional institutions on the islands in the East river and the Long Island Sound, under the charge of the Department of Charities and Correction and the Health Department. The water-mains heretofore laid to Blackwell's Island, and to North Brother Island, have become inadequate or ineffective, and, in order to provide an adequate supply, a six-inch cast-iron pipe, with flexible joints, has been laid to convey water to each of those islands. At the same time, boring examinations have been made on both islands for a water-supply by artesian wells. The boring on North Brother Island has been carried to a depth of 608 feet, and tested by four-inch pipe and pump, when a supply of 12 gallons of water per minute was obtained, which was salt water impregnated with iron, and other deleterious substances, showing that, in the gneiss rock formation in this city and vicinity, potable water cannot be obtained at any reasonable depth.

The principal means upon which the Department has to depend for the suppression of waste of water is the use of water-meters to the full extent allowed by law, and the authority vested in the Department in this respect has been employed by placing 379 additional water-meters during the quarter, making 18,211 water-meters in use at the close of the year.

BUREAU OF WATER PURVEYOR.

This Bureau has charge of laying and repairing pavements and repairs of water-mains. During the quarter 12 contracts for pavements on new streets, payable by assessment on adjacent property, covering 64,633 square yards, have been completed; 59,235 square yards of new pavements have been laid under the annual repavement appropriation; 91,759 square yards of pavement have been relaid by the repair gangs employed by the Department, and 96,035 square yards pavements have been relaid under contracts. Up to the beginning of the winter season, the average force employed on pavement repairs was 547 pavers, rammers and laborers, with 113 carts and 6 teams, and was then reduced to 109 men, with 14 carts and 2 teams.

During the quarter there were issued through this Bureau 34 permits for the construction of street vaults; 33 permits for repairing vaults; 107 permits to erect guy-posts; 88 permits to build fires in the streets for heating tar and other roofing material, and 23 permits to repair pavements at the expense of citizens.

OFFICE OF THE ENGINEER IN CHARGE OF SEWERS.

In the extension and improvement of the sewerage system on Manhattan Island, 13,219 lineal feet of new sewers and 14 receiving-basins have been built during the quarter. The streets and locations where the sewers and receiving-basins have been built are enumerated in the report of the Engineer in charge of Sewers, hereto annexed. Thirty-two contracts for the construction of sewers and receiving-basins were completed during the quarter, and, at the close of the year, work was in progress on 38 contracts.

The principal items of work done in the care and repairs of the sewerage system are:

- 919 receiving-basins and culverts cleaned.
- 20,623 lineal feet of sewers cleaned.
- 79 lineal feet of sewers rebuilt.
- 165 lineal feet of culverts rebuilt.
- 142 lineal feet of sewers repaired.
- 72 lineal feet of new pipe-sewer built.
- 120 lineal feet of spur-pipe laid.
- 171 lineal feet of new culvert built.
- 526 lineal feet of tile-bottom laid.
- 63 receiving-basins repaired.
- 285 manholes repaired.
- 1,628 cubic yards earth excavated and refilled.
- 2,614 cart-loads of sewer deposits removed.

BUREAU OF STREET IMPROVEMENTS.

In the work of regulating and grading streets, curbing and flagging sidewalks, fencing vacant lots, and repairing sidewalks in front of City property, which is under the charge of this Bureau, the following work has been done:

- 17,752 cubic yards earth excavated.
- 19,398 cubic yards rock excavated.
- 162,010 cubic yards filling placed in embankments.
- 7,387 lineal feet curb-stone set.
- 1,801 lineal feet curb-stone reset.
- 48,695 square feet flagging laid.
- 8,778 square feet flagging relaid.
- 3,166 lineal feet picket fence built.
- 420 lineal feet culverts built.
- 235 lineal feet drain-pipe laid.
- 4,031 cubic yards stone masonry built.
- 667 shade trees planted.

Twenty-two contracts have been completed during the quarter, and at the close of the year work was in progress on twenty-four contracts.

BUREAU OF STREETS AND ROADS.

The maintenance and repairs of the macadam roadways, the unpaved streets, and country roads in the upper part of the city, which are under the charge of this Bureau, have been properly attended to to the extent of the means appropriated for the purpose. Further reference to these roads and streets is made in the part of this report which gives a review of the operations of the Department for the year 1888.

BUREAU OF LAMPS AND GAS.

In the extension and rearrangement of public lights in the streets, 376 new gas-lamps were erected and lighted; 19 new electric-lamps were lighted; 100 gas-lamps, heretofore discontinued, were relighted; and 171 gas-lamps were discontinued. At the close of the quarter and year, there were 22,732 gas-lamps; 1,328 electric-lights, and 120 naphtha-lamps in use on the streets, parks, docks and bridges of the city.

BUREAU OF REPAIRS AND SUPPLIES.

The principal items of work done under the direction of this Bureau, which has charge of public buildings and offices, and the public baths, are as follows:

City Hall.

Making repairs and improvements in the offices of the Third Police Precinct, and on the dome and tower of the building.

Brown-stone Court-house.

Repairing the steam boiler; the roof of the building, the walls and ceilings in rooms occupied by the Court of General Sessions, and lining the walls of the prison-pen with galvanized iron.

Third District Court-house.

Repairing the slate-roof, gutters, leaders and ventilators, and making improvements on the passenger elevator.

Second District Civil Court.

Repairing and painting walls and ceilings; painting and graining the woodwork; putting up a storm-door at the entrance to the Clerk's office; completing the plumbing and gas fixtures; laying carpets and linoleum in the several rooms, and furnishing desks, chairs and other office furniture.

Public Markets.

Repairing the roof of Washington Market, and the iron awning on the Washington and West street sides of the building; repairing the planking on Vesey street Pier, West Washington Market; repairing the roof of Fulton Market; repairing the roof of Centre Market; laying a new floor on a portion of Clinton Market.

The ten buildings constituting what is now known, under resolution of the Common Council, as West Washington Market, on the Fort Gansevoort property, have been completed, and are ready for occupation by the stand-holders. A description of the buildings will be found in the report of the Superintendent of Repairs and Supplies hereto annexed.

BUREAU OF INCUMBRANCES.

The following is a summary of the work of this Bureau for the quarter:

- 1,330 complaints of obstructions received and attended to.
- 701 seizures and removals of obstructions made.
- 1,648 permits issued to place building material on streets.
- 5 permits issued to cut down shade-trees.
- 182 miscellaneous permits issued.
- 350 notices issued to repair defective sidewalks.
- 4 notices issued to repair defective vault covers.
- 2,435 cart-loads of dirt and refuse material removed.
- 180 decayed and dangerous shade-trees removed.
- 200 telegraph-poles, and 540,000 lineal feet of telegraph wires removed.

The sum of \$437.90 was received for the redemption of articles seized and removed to the Corporation Yard, and \$305.97 from the public auction sale of unredeemed articles.

BUREAU OF WATER REGISTER.

The following is the amount of revenue received from the water-service and paid into the City Treasury during the quarter:

For water rents	\$401,440 76
For penalties on water rents.....	5,644 05
For permits to tap water pipes	3,063 00
Total	\$410,147 81

MISCELLANEOUS REVENUE.

The Department collected and paid into the City Treasury the following amounts received from various sources:

For sewer permits	\$6,026 22
For vault permits.....	12,946 73
For redemption and sale of street obstructions.....	437 90
For use of road rollers and sprinklers.....	79 00
For work done and materials furnished citizens	735 61
For articles sold at public auction.....	305 07
Total	\$20,530 23

*REVIEW OF THE OPERATIONS OF THE DEPARTMENT FOR THE YEAR 1888.**SUMMARY OF EXPENDITURES.*

On appropriation account for 1888.....	\$2,569,287 72
On Fund for Local Improvements	1,300,970 11
On Croton-water Fund.....	201,072 40
On Revenue Bonds for water-meters	14,925 74
On Special Fund for restoring pavements over street openings	37,196 84
On Gansevoort Market Building Fund.....	293,045 65
Total	\$4,416,498 46

*SUMMARY STATEMENT OF CONTRACTS FOR THE YEAR 1888.**Contracts Entered Into.*

73 sewer contracts, estimated cost	\$284,485 15
39 regulating and grading contracts, estimated cost.....	202,139 41
43 paving contracts, estimated cost	533,608 65
18 repaving contracts, estimated cost	245,219 60
11 contracts for relaying pavements, estimated cost.....	102,905 70
7 contracts for water-mains, estimated cost	109,330 10
9 gas contracts, estimated cost	488,750 00
23 miscellaneous contracts, estimated cost.....	220,245 90
134 contracts, under \$1,000 each, estimated cost	46,906 20
357 contracts, total estimated cost	\$2,233,590 71

Contracts Completed.

76 sewer contracts, cost.....	\$459,694 92
40 regulating and grading contracts, cost.....	382,295 60
48 paving contracts, cost	484,574 44
21 repaving contracts, cost.....	231,791 07
8 contracts for relaying pavements, cost.....	67,500 31
4 contracts for water-mains, cost.....	54,570 70
1 contract for planting shade trees, cost.....	21,649 39
20 miscellaneous contracts, cost	737,039 10
82 contracts, under \$1,000 each.....	32,462 09
300 contracts, total cost.....	\$2,471,577 62

THE WATER SUPPLY.

In the report of the Chief Engineer of the Croton Aqueduct, hereto annexed, will be found a tabular statement, giving the rainfall at the Boyd's Corners Storage Reservoir on the east branch of the Croton river, for each month and year, from 1866 to 1888 inclusive, which shows that the rainfall for 1888, 63.51 inches, exceeds that of any previous year by 1.83 inches. There were only 53 days during the year when the natural flow of the Croton river was not sufficient to supply the aqueduct

to its full capacity, and it was necessary to supplement the deficiency by drafts on the storage reservoirs and lakes in the Croton basin. The quantities of stored water thus drawn are as follows:

From Boyd's Corners Reservoir.....	350,000,000 gallons.
From South East Reservoir	570,000,000 "
From Lake Kirk	200,000,000 "
From Barrett Pond.....	55,000,000 "
From Croton Lake.....	600,000,000 "

Total..... 1,775,000,000 gallons.

As above stated, all the storage reservoirs, lakes and ponds in the Croton basin, tributary to the city's water supply, are now filled to high-water mark.

Bronx River Supply.

The average daily supply received from the Bronx river during the past year is 17,370,000 gallons, which is at the rate of 1,303,000 gallons per day for each square mile of the water-shed tributary to the city's supply, while the supply received from the Croton water-shed, with the aqueduct running constantly at its full capacity, has been only 235,000 gallons per day for each square mile of water-shed. This is a practical illustration of the fact that, with sufficient storage and aqueduct, or conduit, capacity, a daily supply of nearly 500,000,000 gallons per day can be obtained from the Croton river, or about five times the quantity now received.

The interior of the Williamsbridge Reservoir, which is the receiving and distributing reservoir for the Bronx river supply, has been completed, and water was turned into it on December 4, since which time it is being filled at the rate of about one foot in depth per day. The supply through the Bronx river conduit was interrupted for 24 hours, when it became necessary to shut off the water to repair one of the joints of the iron conduit-pipe.

Negotiations have been, and are still in progress, for the acquisition of the necessary lands and water rights to divert the waters of the Byram river into the Bronx river conduit.

The total amount of water drawn from the Rye Ponds Reservoir, and the Kensico Reservoir, during the year, to supplement the deficiency in the natural flow of the Bronx river, is 1,160,000,000 gallons.

Croton Aqueduct.

The work of improving and strengthening the aqueduct and its embankment has been continued to the full extent which the means appropriated would admit, and the Chief Engineer reports that the structure is now in better condition than for many years past. The following are the principal items of work done in the improvement of the Aqueduct:

- 13,260 cubic yards earth excavated.
- 3,845 cubic yards stone quarried.
- 3,660 cubic yards dry masonry walls built.
- 6,484 cubic yards stone masonry built.
- 1,228 lineal feet brick arch reinforced.
- 29,737 lineal feet fences built.
- 1,790 square yards fences sodded.

Distribution of Water.

In improving the water service, and extending it into new streets, there were laid during the year 101,369 lineal feet of water-mains in connection with which 185 stop-cocks and 207 fire-hydrants were placed. The distributing system now comprises 638.26 miles of water-mains, with 6,587 stop-cocks, and 8,191 fire-hydrants. The locations in which water-mains, stop-cocks and hydrants have been placed are enumerated in the Chief Engineer's report.

The high-service pumping-works at High Bridge, and at Ninety-ninth street and Ninth avenue, to supply water to points in the city which are above the elevation at which water can be delivered from the ordinary service, have been taxed to their full capacity, and the demands upon this service are constantly and rapidly increasing. These locations are all in the upper and newer part of the city, where the increase in the number of buildings and population is greatest. The average quantity of water pumped and delivered per day is, from the High Bridge station, 6,027,000 gallons; and, from the Ninety-eighth street station, 8,821,000 gallons.

Greater progress has been made than in any preceding year in the necessary and important work of laying new water-mains and connections in streets contiguous to the water-front, where the old mains and connections have become corroded and unsafe from contact with salt water.

Waste of Water.

The necessity for stringent measures to suppress careless and willful waste of water becomes greater every year as the city grows in buildings and population, while the means of supplying water remain stationary. The abundance of rainfall for the past year has made it possible to draw from the Croton basin all the water which the aqueduct is capable of carrying, and from the Bronx river, more than the annual average which can be expected from that source. These conditions may not recur during the present year, 1889, at least so far as the Bronx river supply is concerned, the average supply from which, after careful investigation and calculations, was estimated at 13,000,000 gallons per day, while the city has received and used during the past year an average of 17,370,000 gallons per day. Even under these favorable conditions, the pressure of water in the distributing mains has been reduced an average of two feet. As it will take at least one year before an additional supply can be received through the new aqueduct, the City will have to depend in the meantime on the measure of supply now received, or less, if the conditions of weather and rainfall should be less favorable. The natural result will be a further reduction of pressures in delivering the water from the mains with proportionate increase of inconvenience and discomfort to the people, except to the extent that this can be prevented by further measures to prevent waste. The most effective measure, so far employed, and which, as I believe, can be devised, is the use of water-meters, because it compels consumers to pay for any excess of use or waste of water. In pursuance of this view, the Department has continued to use its authority and discretion to extend the use of water-meters. During the year, 1,659 additional meters have been placed, making 18,211 meters now in use. During the past year, the average quantity of water supplied through meters, and paid for by meter measurement, was 25,737,000 gallons, nearly one-fourth of all the water consumed in the city.

Work for the New Aqueduct.

Under the provisions of law relating to the new aqueduct, this department is required to furnish to the Aqueduct Commissioners the surveys, plans, estimates and the forms of contracts and specifications for the entire work, and to furnish new or modified plans if those originally submitted should be rejected. The following is a summary of the work done by the Department on account of the new aqueduct during the past year:

Making surveys of lands required on the Westchester section of the aqueduct, and for the Sodom Reservoir; making surveys of property in the Croton basin between Quaker Bridge and Sodom Dam; making maps of additional property required on Manhattan Island and for the Sodom Reservoir; making examinations of plans and specifications for reservoirs, dams and stop-cocks on the east branch of the Croton river, and for the gate-house at Central Park Reservoir. In addition to this, the Department has been under the expense of extra superintendence and inspection of work on Manhattan Island, and at the Croton Dam, where the new aqueduct work interferes with, or requires changes in the structures connected with the old aqueduct under the charge of this Department.

STREET PAVEMENTS.

In laying pavements on new streets, the cost of which is assessed on adjacent property, 152,011 square yards of granite-block pavement, 44,418 square yards of trap-block pavement, 27,592 square yards of macadam pavement and 6,993 square yards of asphalt pavement were laid, covering 9¾ miles of streets.

The important and necessary work of repaving streets to replace old and defective pavements has been obstructed and delayed through the tardy action and partial non-action of the Board of Aldermen on the certificates and recommendations of the Department. Under dates of February 13 and April 7, the Department certified to the Board the necessity for the repavement of 33 different streets, and the resolution to authorize these repavements was not passed and approved until June 6. Before the repavements were authorized by such resolution, the Department had no authority to incur any expense under the appropriation, and all the preliminary work of making surveys, preparing contracts and specifications, advertising and letting contracts had to be delayed until the authority was received. Under dates of July 30 and September 25, certificate was made to the Board for the repavement of 13 additional streets. The certificates of the Department were calculated to cover all the repavements which could be made under the appropriation of \$400,000, but the failure of the Board of Aldermen to authorize the repavement of a number of streets, certified to and recommended by the Department for repavement, as required by section 321 of the Consolidation Act, resulted in making \$162,000 of the appropriation unavailable for this work. This would have covered a large area of streets where repavement is urgently needed, and would have gone far toward the universally acknowledged necessity of improving the streets of the City. This unexpended balance may be made available for this year's work if the Board of Estimate and Apportionment will transfer it to this year's appropriation, and thus enable the Department to continue and carry out the repavements and improvement of the streets to the full extent of the means appropriated.

In the report of the Water Purveyor are enumerated 32 different streets which have been repaved during the year, covering 74,956 square yards of granite-block pavement, 23,670 square yards of trap-block pavement and 11,035 square yards of asphalt pavement.

In the general repairs of pavements throughout the City 333,451 square yards of pavement were relaid, 1,426 crosswalks repaired, and six new crosswalks laid. The Water Purveyor's report gives the names of 34 streets and avenues in which the pavement was relaid from curb to curb, and all the many locations where minor repairs were made. These minor repairs cover an area of over 561,000 square yards, about 8 per cent. of the entire paved area of streets.

SEWERAGE AND DRAINAGE.

This Department has charge of the sewerage and drainage system on Manhattan Island only, that of the Twenty-third and Twenty-fourth Wards, north of the Harlem river, being under the charge of the Department of Public Parks. The system on Manhattan Island has been extended by the construction of 29,945 lineal feet of new sewers, 1,981 lineal feet of culverts, and 81 receiving-basins. There are now on the island 429 miles of sewers. A large portion of this work has been done in the district north of Seventy-second street and west of Eighth avenue, which has recently grown so rapidly in buildings and population. Not much progress has yet been made in providing sewerage for the district north of One Hundred and Fifty-fifth street, and, after building a sewer in Tenth avenue, from One Hundred and Sixty-second to One Hundred and Seventy-third street, designed to drain all the area east of Audubon avenue, which requires an outlet at One Hundred and Sixty-seventh street to the Harlem river, the Department encountered a difficulty of having sufficient legal authority of acquiring private lands needed for this outlet. This difficulty has been obviated by an amendment of the law passed at the last session of the Legislature, and the Board of Street Opening and Improvement has been called upon to take measures for the acquisition of such land. A contract for a sewer in Eleventh avenue and Kingsbridge road, from One Hundred and Sixty-first to One Hundred and Sixty-ninth street, has been made, and plans for other sewers in that district are in preparation.

For some years past the Department has used all the means at its disposal to improve the sewerage in the lower part of the city, south of Canal street, especially along the water-front, where marginal or collective sewers are required to receive the drainage from the lateral sewers, with fewer outlets extending to the ends of the piers and the tidal currents, in place of the present numerous and imperfect outlets which empty in the slips or basins, and pollute the water and the atmosphere. In pursuance of this plan marginal sewers have been constructed during the past year in West street, between Murray and Jay streets, and in South street, between Roosevelt street and Peck Slip. These improvements will be continued as far as possible during the present year. The heavy rain-storms which have occurred during the year have severely taxed the capacity of some of the sewers, especially the older tide-locked sewers, causing in some instances the flooding of cellars. This is an old difficulty with which the Department has had to contend for years, and which can only be remedied by a complete examination and reconstruction of the old sewerage system. To aid the Department in making such examinations, and devising the needed improvements, my predecessor engaged the services of Mr. Rudolph Hering, an engineer of reputation in matters of sewerage and drainage, whose report on the matter, dated November 19, 1888, is hereto annexed.

REGULATING AND GRADING STREETS.

At the beginning of the year, work was in progress on 31 regulating and grading contracts, 83 new contracts were made during the year, 89 contracts were completed, leaving 25 unfinished contracts at the close of the year.

The following are the quantities of work done under the several contracts :

- 42,622 cubic yards earth excavated.
- 93,998 cubic yards rock excavated.
- 162,010 cubic yards of filling placed in embankments.
- 37,393 lineal feet curb-stone set.
- 10,132 lineal feet curb-stones reset.
- 238,162 square feet flagging laid.
- 36,719 square feet flagging relaid.
- 15,425 lineal feet picket fence built.
- 2,862 feet of culverts and drains built.
- 12,462 cubic yards masonry built.
- 667 shade trees planted.

The most important works completed during the year are the construction of a retaining-wall in Forty-third street, between First avenue and Prospect place; regrading and paving Gansevoort street, between Washington and Thirteenth streets; grading Sixty-third street, between Tenth and Eleventh avenues; Ninety-first street, between Tenth avenue and Riverside Drive; One Hundred and Second street, between Ninth avenue and Riverside Drive; One Hundred and Seventh street, between Eighth and Ninth avenues; One Hundred and Eighth street, between Ninth avenue and the Boulevard; One Hundred and Fifteenth street, between Eighth and Ninth avenues; One Hundred and Eighteenth street, between Eighth and Ninth avenues; One Hundred and Thirty-eighth street, between Tenth avenue and the Boulevard; One Hundred and Forty-eighth street, between Seventh and Eighth avenues; One Hundred and Sixty-first street, between Tenth and Eleventh avenues; Hamilton place, between the Boulevard and Tenth avenue; Manhattan avenue, between One Hundred and One Hundred and Fifth streets; Fort Washington Ridge road.

MACADAM ROADWAYS.

While the condition of the macadam roadways in the upper part of the city has been considerably improved during the past year, there are still many defects for the correction of which the means appropriated are not adequate. These roadways, most of which were constructed more than fifteen years ago, were designed for suburban drives, and light wagon traffic. The conditions have been radically changed by the growth of the city in buildings and population, and the roads are used for heavy business traffic, which causes such wear and tear that larger appropriations and expenditures are needed, to keep them in perfect condition. It would be for the interest of the public, both as to convenience and economy, to have some of these macadam roads repaved with stone blocks, but the necessity for repavements in the business portion of the city absorbs all the means appropriated for the purpose. In cases such as the Western Boulevard, where only a small portion of the cost of the construction of the roadway was assessed upon the adjacent property, it would

seem just that the property-owners should bear a portion of the cost of repavement, so that the entire cost should not be thrown upon the taxpayers at large. A bill was prepared and introduced at the last session of the Legislature to repave the Western Boulevard with granite-blocks, from Fifty-ninth street to One Hundred and Tenth street, and to assess a reasonable portion of the cost on the adjacent property, but it failed to pass. If no other provision for the repavement of this and other Macadam roads, which need repavement, is made than the annual appropriations for repavement and for the maintenance of the roads, it will be impossible to make much improvement in their condition.

LIGHTING THE CITY.

At the beginning of the year there were 24,719 gas-lamps, 828 electric-lights, and 120 naphtha-lamps in use on the streets, avenues, parks, docks and bridges of the City. The changes made during the year are as follows :

- 821 new gas-lamps erected and lighted.
- 496 new electric-lamps placed and lighted.
- 305 gas-lamps relighted.
- 7 electric-lamps relighted.
- 2,916 gas-lamps discontinued on account of introduction of electric light.
- 197 gas-lamps discontinued for other causes.
- 3 electric-lights discontinued.

With these changes there are now 22,732 gas-lamps, 1,328 electric-lights, and 120 naphtha-lamps in use in the City.

STREET OBSTRUCTIONS.

With the increased appropriation given by the Board of Estimate and Apportionment the work of the Bureau of Incumbrances, which has charge of the removal of obstructions, has been much extended and rendered more effective. The best corrective measure for violations of the law in relation to obstructions is the prompt seizure and removal of the structures, merchandise, or other articles constituting the obstructions when offenders against the law do not comply with the notices issued from the Department. Prior to the past year the means appropriated to the Department have not been adequate to enforce removals or make seizures as frequently or as promptly as necessary, but with the increased appropriation there has been great improvement in the appearance of the streets in respect to encumbrances and obstructions, and more prompt compliance with the notices issued from the Department for the removal of obstructions.

The operations of the Bureau of Incumbrances for the year are summarized as follows :

- 6,281 complaints of obstructions received and attended to.
- 2,588 seizures and removals of obstructions made.
- 4,505 cart-loads of dirt and refuse removed.
- 778 decayed and dangerous shade trees removed.
- 411 telegraph-poles and 809,810 lineal feet of telegraph wires removed.
- 7,772 permits issued to place building material on streets.
- 1,002 miscellaneous permits issued.
- 1,089 notices issued to repair defective sidewalks.
- 53 notices issued to repair defective vault covers.

SURVEYS FOR LAYING OUT AND OPENING NEW STREETS.

The law requires this Department to furnish to the Board of Street Opening and Improvement all surveys, maps and technical descriptions for the closing, altering, establishing, or opening new streets, and from the report of the Assistant Engineer, who has charge of the work, it will be seen that the matter involves considerable labor and expense. In the report referred to are enumerated 25 streets and avenues for which surveys, maps and descriptions, preparatory to measures for opening them, were made and furnished. In addition to this, plans giving lines and grades in the district bounded by Dyckman street, the Harlem river, Two Hundred and Sixteenth street and Prescott avenue, for 25 new streets to be placed on the map of the City, have been furnished; surveys and maps have been supplied for closing streets, regulating and changing grades of streets, and maps of damage and benefit required by Commissioners of Estimate and Assessment on the opening of 11 streets.

CITY REVENUE.

The revenue derived by the City from the water service for 1888 is as follows :

Amounts Collected and Paid into the City Treasury.

For regular water rates and penalties.....	\$1,461,460 30
For water supplied through meters.....	937,655 92
For water supplied for building purposes.....	38,516 44
For penalties for unlawful use of water.....	330 00
For permits to tap water-pipes.....	10,788 50

Total amount collected.....	\$2,448,751 16
Amount of uncollected charges returned in arrears, being liens on property.....	154,043 30

Total revenue.....	\$2,602,794 46
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The Chief Engineer of the Croton Aqueduct and the Water Register, in their respective reports, recommend a reduction in the charge for water supplied through meters, which recommendation will receive due consideration.

In addition to the revenue from the water-service, the Department collected and paid into the City Treasury—

For sewer permits.....	\$25,444 62
For vault permits.....	65,041 92
For redemption and sale of street obstructions.....	2,659 70
For use of road-roller and sprinkler.....	260 50
For work and material furnished citizens.....	1,911 35
For sales of property at public auction.....	1,660 32

Total.....	\$96,978 41
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The following documents, appended to this report, contain further detailed information of the transactions of the Department :

- Document A—Statement of appropriations and expenditures.
- Document B—Detailed statement of expenditures.
- Document C—Statement of contracts made and contracts completed.
- Document D—Report of Chief Engineer of the Croton Aqueduct.
- Document E—Report of the Water Purveyor.
- Document F—Report of the Engineer in Charge of Sewers, with report of Consulting Engineer.
- Document G—Report of the Superintendent of Street Improvements.
- Document H—Report of the Superintendent of Streets.
- Document I—Report of the Superintendent of Lamps and Gas.
- Document K—Report of the Superintendent of Repairs and Supplies.
- Document L—Report of the Superintendent of Incumbrances.
- Document M—Report of the Water Register.

Very respectfully,

D. LOWBER SMITH, Commissioner of Public Works.

Document "A."

Showing Titles of Appropriations; Balances of 1887 on October 1, 1888; Requisitions on 1887 in Fourth Quarter of 1888, together with Transfers; Balances of 1887 on December 31, 1888; Appropriations, including Transfers, of 1888; Requisitions, First Nine Months of 1888; Requisitions, Fourth Quarter of 1888; Total Requisitions of 1888; Balances on December 31, 1888; and the Titles and Conditions of the Trust and Special Accounts.

TITLES OF APPROPRIATIONS.	BALANCES OF 1887, ON OCTOBER 1, 1888.	REQUISITIONS AND TRANSFERS OF 1887, FOURTH QUARTER, 1888.	BALANCES OF 1887, ON DECEMBER 31, 1888.	APPROPRIATIONS, INCLUDING TRANSFERS, OF 1888.	REQUISITIONS, FIRST NINE MONTHS, 1888.	REQUISITIONS, FOURTH QUARTER, 1888.	TOTAL REQUISITIONS, 1888.	BALANCES ON DECEMBER 31, 1888.
Aqueduct—Repairs, Maintenance and Strengthening.....	\$9,112 53	\$8,256 28	\$836 25	\$232,833 33	\$147,016 70	\$53,665 45	\$200,682 15	\$32,151 18
Aqueduct—Repairs, Maintenance and Strengthening—Salaries.....	490 41	490 41	.....	27,166 00	19,477 86	6,593 17	26,071 03	1,094 97
Boring Examinations for Grading and Sewer Contracts.....	587 20	587 20	.....	4,000 00	2,373 50	1,170 00	3,543 50	456 50
Boulevards, Roads and Avenues, Maintenance of.....	250 79	250 79	.....	100,000 00	64,116 19	29,547 49	93,663 68	6,336 32
Boulevards, Roads and Avenues, Maintenance of—Salaries.....	.....	.....	.....	3,000 00	2,333 25	624 98	2,958 23	41 77
Bronx River Works—Maintenance and Repairs.....	269 76	269 76	.....	21,103 00	15,241 00	5,589 94	20,830 94	269 06
Bronx River Works—Maintenance and Repairs—Salaries.....	.....	.....	.....	3,900 00	2,925 00	975 00	3,900 00	.....
Contingencies—Department of Public Works.....	24 27	24 27	.....	4,000 00	2,352 00	1,268 15	3,621 09	378 91
Flagging Sidewalks and Fencing Vacant Lots, etc.....	28	28	.....	14,000 00	4,604 97	4,377 00	8,981 97	5,018 03
For Brown-stone Building, Additions to.....	75 00	75 00	.....	.....	.....	.....	.....	.....
For Repairs to Seventh Regiment Armory Building.....	99 53	2 25	97 28	.....	.....	.....	.....	.....
For Repairing Water-main Leading to North Brother Island.....	954 25	954 25	.....	.....	.....	.....	.....	.....
For New Water-main and Testing for Water Supply, North Brother Island.....	.....	.....	.....	24,000 00	.....	15,597 73	15,597 73	8,402 27
Free Floating Baths.....	1,998 75	1,998 75	.....	35,708 00	25,178 14	2,848 49	28,026 63	7,681 37
Free Floating Baths—Salaries.....	379 50	379 50	.....	23,600 00	19,149 50	4,248 00	23,397 50	202 50
Lamps and Gas and Electric Lighting.....	25 57	25 57	.....	684,000 00	398,248 82	143,638 85	541,887 67	142,112 33
Lamps and Gas and Electric Lighting—Salaries.....	73 04	73 04	.....	6,500 00	4,924 85	1,519 95	6,474 80	25 20
Laying Croton Pipes.....	6,922 30	6,922 30	.....	216,000 00	65,010 38	73,759 08	138,769 46	77,230 54
Laying Croton Pipes—Salaries.....	08	08	.....	18,491 67	11,240 44	3,939 14	15,179 58	3,312 09
Public Buildings—Construction and Repairs.....	127 60	127 60	.....	95,500 00	66,469 75	22,880 59	89,350 34	6,149 66
Public Drinking-hydrants.....	56 08	56 08	.....	3,800 00	1,762 09	725 95	2,488 04	1,311 96
Public Drinking-hydrants—Salaries.....	04	04	.....	1,200 00	800 00	400 00	1,200 00	.....
Removing Obstructions in Streets and Avenues.....	1 35	1 35	.....	22,000 00	9,665 58	7,661 13	17,326 71	4,673 29
Removing Obstructions in Streets and Avenues—Salaries.....	70	70	.....	7,500 00	5,112 94	1,924 98	7,037 92	462 08
Repairing and Renewal of Pipes, Stop-cocks, etc.....	7,964 07	7,964 07	.....	200,000 00	122,273 02	52,153 92	174,426 94	25,573 06
Repairing and Renewal of Pipes, Stop-cocks, etc—Salaries.....	16 89	16 89	.....	.....	.....	.....	.....	.....
Repairs and Renewal of Pavements and Regrading.....	3,441 58	3,441 58	.....	400,000 00	215,187 68	157,206 94	372,394 62	27,605 38
Repairs and Renewal of Pavements and Regrading—Salaries.....	54 16	54 16	.....	18,000 00	10,411 70	7,565 60	17,977 30	22 70
Repaving Streets and Avenues.....	5,593 43	5,593 43	.....	461,000 00	108,789 37	125,299 17	234,088 54	226,911 46
Repaving Streets and Avenues—Salaries.....	5,776 00	5,776 00	.....	18,000 00	7,664 47	5,617 50	13,281 97	4,718 03
Roads, Streets and Avenues Unpaved, Maintenance and Sprinkling.....	93 02	93 02	.....	25,000 00	16,532 34	8,113 93	24,646 27	353 73
Salaries—Department of Public Works.....	2,652 00	2,652 00	.....	106,000 00	74,737 48	26,400 80	101,138 28	4,861 72
Salaries of Engineer, Clerks, etc.—Bureau of Water Register, etc.....	.....	.....	.....	50,000 00	35,898 33	13,038 17	48,936 50	1,063 50
Sewers—Repairing and Cleaning.....	1,690 66	1,690 66	.....	161,000 00	106,990 89	37,594 49	144,601 73	16,398 27
Sewers—Repairing and Cleaning—Salaries.....	30 00	30 00	.....	10,000 00	7,334 64	2,489 98	9,824 62	175 38
Sewerage System—Salaries.....	27	27	.....	17,000 00	9,980 67	6,890 99	16,880 66	119 34
Street Improvements—For Surveying, Monumenting, etc.....	114 50	94 50	20 00	3,000 00	891 09	266 00	1,157 09	1,813 00
Supplies for and Cleaning Public Offices.....	815 71	815 71	.....	124,075 00	83,818 61	32,724 71	116,543 32	7,531 68
Supplies for and Cleaning Public Offices—Salaries.....	71 31	71 31	.....	20,000 00	14,572 11	5,239 87	19,811 98	188 02
Surveys, Maps, etc., for Street Openings and New Streets—Salaries.....	3,123 80	3,123 80	.....	6,300 00	4,158 47	2,075 00	6,233 47	66 53
Supplying Water to Shipping and for Building Purposes—Salaries.....	88 41	88 41	.....	9,960 00	7,261 95	2,493 99	9,755 94	204 06
Water Supply for the Twenty-fourth Ward.....	3,742 43	3,742 43	.....	7,800 00	3,238 93	1,821 28	5,060 21	2,739 79
Water Supply for the Twenty-fourth Ward—Salaries.....	25 02	25 02	.....	1,200 00	900 00	300 00	1,200 00	.....
Wells and Pumps—Repairing and Cleaning.....	174 43	174 43	.....	250 00	106 40	.....	106 40	143 60
Real Estate Expenses—Finance Department.....	.....	.....	.....	233 00	233 00	.....	233 00	.....
Totals.....	\$56,913 81	\$55,940 28	\$973 53	\$3,187,117 00	\$1,698,984 96	\$870,302 76	\$2,569,287 72	\$617,829 28

NOTE—Amount drawn on liabilities of 1886, during Fourth Quarter, 1888; Boulevards, Roads and Avenues—Maintenance, \$121.27.

TITLES OF TRUST ACCOUNTS.	BALANCES FROM 1887 AND RECEIPTS FIRST NINE MONTHS, 1888.	RECEIPTS, FOURTH QUARTER, 1888.	TOTAL BALANCES OF 1887 AND RECEIPTS FOR 1888.	REQUISITIONS, FIRST NINE MONTHS, 1888.	REQUISITIONS, FOURTH QUARTER, 1888.	TOTAL REQUISITIONS FOR 1888.	BALANCES, DECEMBER 31, 1888.
Croton Water Fund.....	.....	.....	.....	\$110,979 17	\$90,093 23	\$201,072 40	.....
Fund for Local Improvements.....	.....	.....	.....	994,339 69	306,630 22	1,300,970 11	.....
Restoring and Repaving—Special Fund—Department of Public Works.....	\$39,411 39	\$7,958 00	\$47,379 39	26,750 72	10,446 12	37,196 84	\$10,182 55
Water-meter Fund No. 2.....	24,712 39	4,101 79	28,814 18	8,808 73	6,117 01	14,925 74	13,888 44
Gansevoort Market Building Fund.....	.....	.....	.....	221,983 82	71,061 83	*293,045 65	.....

* Total amount drawn on this account to December 31, 1888, \$503,715.15.

Statement of General Bookkeeper, Department of Public Works, Showing all Revenues of the City Received through the Department of Public Works during the First Nine Months of 1888, during the Fourth Quarter of 1888, and the Total for the Year.

SOURCE OF REVENUE.	FIRST NINE MONTHS, 1888.	FOURTH QUARTER, 1888.	TOTAL FOR 1888.	SOURCE OF REVENUE.	FIRST NINE MONTHS, 1888.	FOURTH QUARTER, 1888.	TOTAL FOR 1888.
Water rents.....	\$1,983,342 21	\$401,440 76	\$2,384,782 97	Water-meter Fund No. 1.....	.....	.....	\$20 15
Water penalties.....	8,850 65	5,644 05	14,494 70	.....	.....	.....	.....
Pipe tapping.....	7,725 50	3,063 00	10,788 50	.....	.....	.....	.....
Sewer permits.....	19,418 40	6,026 22	25,444 62	.....	.....	.....	.....
Vault permits.....	52,095 19	12,946 73	65,041 92	Return of Water-rents, etc., in Arrears—	.....	.....	.....
Redemption and sale of street obstructions.....	2,221 80	437 90	2,659 70	Regular Croton-water rents.....	.....	\$105,557 35	.....
Use of sprinkling wagons and road rollers.....	181 50	79 00	260 50	Water by meter measurement.....	.....	48,485 95	.....
Work done and material furnished citizens.....	1,175 74	735 61	1,911 35	Meters and meter setting.....	.....	4,465 31	.....
Sales at public auction.....	1,354 35	305 97	1,660 32	.....	.....	.....	.....
Totals.....	\$2,076,365 34	\$430,679 24	\$2,507,044 58	.....	.....	.....	\$158,508 61

C. T. McCLENACHAN, General Bookkeeper, D. P. W.

Document "B."

A Detailed Statement of Expenditures for which Requisitions were drawn on the Comptroller by the Commissioner of Public Works during the Quarter ending December 31, 1888.

APPROPRIATIONS.

Aqueduct—Repairs, Maintenance and Strengthening—	
Blacksmithing.....	\$560 11
Brick and cement.....	594 80
Bridge at Southeast Reservoir.....	2,700 00
Coal.....	5,834 60
Lumber.....	161 86
Pay-rolls.....	33,587 34
Removing dirt from Reservoir.....	3,162 40
Rent of office.....	106 25
Repairing pump and engines.....	2,008 43
Repairing stop-cocks.....	263 75
Repairing scales.....	95 02
Stone.....	1,727 60
Supplies.....	1,105 68
Taxes.....	1,693 16
Traveling expenses.....	64 45
Total.....	\$53,665 45
Boring Examinations for Grading and Sewer Contracts—	
Pay-rolls.....	\$1,170 00
Boulevards, Roads and Avenues, Maintenance of—	
Coal.....	\$108 25
Gravel and stone.....	7,043 14
Horse-hire.....	180 00
Lumber.....	42 89
Pay-rolls.....	20,081 11
Paints, etc.....	55 30
Planting trees.....	281 00
Rent of yard.....	900 00
Repairing retaining wall.....	539 60
Repairing sprinklers.....	29 45
Rolling roadway.....	220 50
Supplies.....	32 50
Telephone service.....	33 75
Total.....	\$29,547 49

Bronx River Works—Maintenance and Repairs—	
Pay-rolls.....	\$279 44
Taxes.....	5,310 50
Total.....	\$5,589 94
Contingencies—Department of Public Works—	
Horse-hire.....	\$270 00
Incidental expenses.....	300 00
Map.....	50 00
Postage.....	465 00
Traveling expenses.....	183 15
Total.....	\$1,268 15
Flagging Sidewalks and Fencing Vacant Lots, etc.—	
Fencing, filling, etc., One Hundred and Fifty-fourth and One Hundred and Fifty-fifth streets and Eighth avenue.....	\$4,000 00
Pay-rolls.....	77 00
Surveying.....	300 00
Total.....	\$4,377 00
For New Water-main, etc., to North Brother Island—	
Boring and testing for water.....	\$4,225 60
Laying pipes.....	11,372 13
Total.....	\$15,597 73
Free Floating Baths—	
Awning.....	\$230 00
Carpenter work.....	487 00
Coal and wood.....	24 75
Horse-hire.....	122 50
Recovering anchors.....	170 00
Supplies.....	204 24
Towing baths.....	535 00
Wharfage.....	1,075 00
Total.....	\$2,848 49

Lamps and Gas and Electric Lighting—

Crossheads.....	\$204 00
Gas examinations.....	510 50
Horse-hire.....	130 00
Lamp-brackets.....	100 00
Lamp-globes.....	840 00
Lamp-irons.....	120 00
Lamp-posts.....	2,509 96
Lamp-tops.....	243 75
Lamps.....	978 55
Pay-rolls.....	797 50
Rent of Photometrical rooms.....	240 00
Repairing lamps.....	90 00
Supplies.....	150 99
Street signs.....	975 55
Lighting Armory, First Battery.....	58 50
" " Second ".....	103 75
" " Seventh Regiment.....	604 88
" " Eighth ".....	210 00
" " Ninth ".....	144 50
" " Eleventh ".....	83 50
" " Twelfth ".....	462 25
" " Twenty-second Regiment.....	522 50
" " Sixty-ninth ".....	137 25
" " Seventy-first ".....	241 25
" " Brigade Headquarters.....	82 00
" " Bath, Battery.....	12 00
" " Duane street.....	23 76
" " Stanton ".....	13 50
" " Horatio ".....	10 87
" " Corlears ".....	16 63
" " Nineteenth street.....	15 01
" " Twenty-seventh street.....	25 99
" " Thirty-seventh ".....	10 74
" " Forty-sixth ".....	15 88
" " Fifty-first ".....	14 24
" " One Hundred and Twelfth street.....	25 50
" " One Hundred and Thirty-eighth street.....	21 76
" " Brown-stone Building.....	207 38
" " City Hall.....	392 50
" " CITY RECORD Bindery.....	3 87
" " County Jail.....	298 00
" " Court, Civil, First District.....	3 38
" " Fourth ".....	12 25
" " Fifth ".....	39 25
" " Sixth ".....	2 25
" " Eighth ".....	6 25
" " Ninth ".....	10 99
" " Tenth ".....	16
" " Court, Police, First.....	367 37
" " Second ".....	90 00
" " Third ".....	35 50
" " Fourth ".....	100 50
" " Fifth ".....	17 38
" " Court of Special Sessions.....	23 75
" " Court-house, Third District (clock).....	134 25
" " County.....	977 75
" " Department of Public Works.....	252 76
" " Taxes and Assessments.....	8 63
" " Dog Pound.....	2 38
" " Engine-house, Highbridge.....	93 76
" " Ninety-eighth street.....	148 49
" " Market, Catharine.....	68 62
" " Centre.....	105 51
" " Clinton.....	197 62
" " Essex.....	23 75
" " Fulton.....	886 12
" " Jefferson.....	159 25
" " Tompkins.....	109 00
" " Union.....	8 63
" " Washington.....	943 62
" " Office, Corporation Attorney.....	50 00
" " Corporation Counsel.....	21 00
" " Photometrical.....	7 25
" " Public Administrator.....	24
" " Register.....	76 87
" " Repair Shop, Thirtieth street.....	8 75
" " Eighty-seventh street.....	6 13
" " One Hundred and Twenty-fifth street.....	14 12
" " Rivington Street Yard.....	3 88
" " Sixteenth Street Yard.....	4 37
" " Twenty-fourth Street Yard.....	1 25
" " South Gate-house.....	47 75
" " Streets, Central Gas-light Co.....	17,977 61
" " Consolidated Gas Co.....	7,882 22
" " Equitable Gas-light Co.....	6,060 88
" " New York Mutual Gas-light Co.....	673 07
" " New York and New Jersey Globe Gas-light Co.....	758 88
" " Northern Gas-light Co.....	15,077 89
" " Yonkers Gas-light Co.....	3,239 66
" " East River Electric-light Co.....	12,008 50
" " United States Illuminating Co.....	252 00
Total.....	\$143,638 85

Laying Croton Pipes—

Building house for storage of coal.....	\$7,450 00
Cast-iron pipe.....	25,343 00
Changing taps.....	329 50
Horse-hire.....	435 00
Pay-rolls.....	4,047 25
Placing hydrants.....	553 30
Platform and fenders.....	253 81
Protecting gas-mains.....	193 17
Stop-cocks, hydrants, etc.....	3,927 00
Traveling expenses.....	26 98
Laying pipe.....	31,200 07
Total.....	\$73,759 08

Laying Croton Pipes, 1887—

Laying pipe.....	\$1,237 59
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Public Buildings—Construction and Repairs—

Armory, Second Battery.....	\$73 01
" Seventh Regiment.....	885 11
" Ninth ".....	156 00
" Sixty-ninth ".....	180 41
Brown-stone Building.....	624 23
Bureau Repairs and Supplies.....	997 19
City Hall.....	2,549 86
" Prison.....	2,617 83
" Court, Civil, First District.....	6 35
" " Second ".....	4,008 06
" " Fourth ".....	9 00
" " Fifth ".....	28 29
Court-house, Third ".....	542 72
" Seventh ".....	106 75
" County.....	1,490 87
Dog-pound.....	46 70

Public Buildings—Construction and Repairs—

Hall of Records.....	\$194 66
County Jail.....	307 80
Market, Catharine.....	28 88
" Centre.....	414 38
" Clinton.....	547 92
" Fulton.....	534 68
" Jefferson.....	1,135 67
" Tompkins.....	97 93
" Washington.....	1,406 64
Pay-rolls.....	1,671 00
Repair Shop, Thirtieth street.....	60 38
No. 31 Chambers street.....	463 48
No. 49 Beekman street.....	125 52
Stewart Building.....	186 15
Staats Zeitung Building.....	43 90
Rivington Street Yard.....	1,276 66
Traveling expenses.....	31 55
Total.....	\$22,880 59

Public Drinking-hydrants—

Hydrants.....	\$367 50
Repairing hydrants.....	358 45
Total.....	\$725 95

Removing Obstructions in Streets and Avenues—

Pay-roll.....	\$491 38
Removing obstructions.....	5,991 55
Removing trees.....	970 50
Traveling expenses.....	207 70
Total.....	\$7,661 13

Repairing and Renewal of Pipes, Stop-cocks, etc.—

Boxing pipe.....	\$175 00
Cement.....	56 00
Changing taps.....	99 15
Laying and relaying pipes.....	738 05
Lumber.....	602 19
Pay-rolls.....	42,666 61
Pipe couplings.....	483 41
Placing pipe under wharf.....	1,791 24
Protecting gas-mains.....	15 85
Repairing hydrants.....	1,022 89
Resetting hydrants.....	634 40
Stop-cocks, hydrants, etc.....	3,082 02
Telephone service.....	170 05
Tools and supplies.....	1,041 63
Traveling expenses.....	175 43
Total.....	\$52,153 92

Repairing and Renewal of Pipes, Stop-cocks, etc., 1887—

Changing taps.....	\$754 13
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Repairs and Renewal of Pavements and Regrading—

Building fence.....	\$158 33
Cement and gravel.....	502 40
Horse-hire.....	586 00
Pay-rolls.....	98,027 48
Redressing paving blocks.....	800 00
Relaying and repairing pavement.....	46,238 53
Repairing tool-cuts.....	327 85
Repairing tools.....	561 95
Sand.....	5,833 20
Supplies.....	130 20
Stone.....	3,763 35
Traveling expenses.....	109 65
Wood and coke.....	168 00
Total.....	\$57,206 94

Repairs and Renewal of Pavements and Regrading, 1887—

Repairing pavement.....	\$1,736 45
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Repaving Streets and Avenues—

Cherry street, between Stanton and Houston streets.....	\$12,337 10
Dry Dock street, between Tenth and Eleventh streets, etc.....	11,672 41
Greene street, between Bleecker and Eighth streets.....	8,727 53
Monroe street, between Gouverneur and Jackson streets.....	12,208 88
Mott street, between Canal and Bleecker streets.....	19,444 22
Ridge street, between Stanton and Houston streets.....	6,210 27
York street, between West Broadway and St. John's lane, etc.....	14,145 44
Thirteenth street, between Gansevoort street and Ninth avenue.....	6,893 56
Twenty first street, between Eighth and Tenth avenues.....	11,661 47
Twenty-seventh street, between Ninth and Tenth avenues.....	11,710 26
Twenty-ninth street, between Ninth and Tenth avenues.....	10,888 03
Total.....	\$125,299 17

Repaving Streets and Avenues, 1887—

Crosby street, between Howard and Bleecker streets.....	\$690 90
Washington street, between Bank and Clarkson streets.....	685 47
Total.....	\$1,376 37

Roads, Streets and Avenues Unpaved, Maintenance, etc.—

Building fence.....	\$158 25
Horse-hire.....	90 00
Pay-rolls.....	7,850 18
Supplies.....	15 50
Total.....	\$8,113 93

Sewers—Repairing and Cleaning—

Brick, cement, etc.....	\$562 50
Basin-heads.....	765 00
Cleaning sewers.....	2,289 31
Horse hire.....	504 00
Lumber.....	107 10
Manhole-heads and covers.....	637 06
Pay-rolls.....	22,624 76
Removing basin-heads.....	129 65
Repairing sewers and basins.....	9,358 06
Repairing sidewalks.....	207 90
Repairing tools.....	12 50
Tools.....	15 00
Traveling expenses.....	398 00
Total.....	\$37,610 84

Sewers—Repairing and Cleaning, 1887—

Repairing sewers.....	\$317 00
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Street Improvements—For Surveying, Monumenting, etc.—

Pay-rolls.....	\$266 00
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Supplies for and Cleaning Public Offices—

Armory, Second Battery.....	\$190 86
Bureau of Repairs and Supplies.....	4,563 44
Civil Service Board.....	19 50
Court, Civil, Second District.....	1,571 92
" Eighth District.....	36 03
" Police, Third District.....	65 65
" Fifth District.....	14 00
" City.....	1,201 78
" General Sessions.....	63 00
" Special Sessions.....	107 11
" Supreme.....	8 00
Court-house, County.....	313 41
Department Public Works.....	165 03
" Taxes and Assessments.....	26 00
" Finance.....	93 84
Dog-pound.....	32 00
Governor's room.....	680 50
City Hall.....	10 32
" Corporation Counsel.....	10 00
" County Clerk.....	50 61
" Mayor.....	4 50
" Recorder.....	67 70
" Surrogate.....	242 74
Coal.....	4,368 48
Ice.....	490 81
Pay-rolls.....	18,327 48
Total.....	\$32,724 71

Supplies for and Cleaning Public Offices—1887—

Court, General Sessions.....	\$249 42
Office, District Attorney.....	220 68
Total.....	\$470 10

Water Supply for the Twenty-fourth Ward—

Cast-iron pipe.....	\$570 99
Supply of water.....	1,250 29
Total.....	\$1,821 28

RECAPITULATION OF APPROPRIATIONS.

Aqueduct—Repairs, Maintenance and Strengthening.....	\$53,665 45
Aqueduct—Repairs, Maintenance and Strengthening, 1887.....	7,500 00
Aqueduct—Repairs, Maintenance and Strengthening—Salaries.....	6,593 17
Boring Examinations for Grading and Sewer Contracts.....	1,170 00
Boulevards, Roads and Avenues, Maintenance of.....	29,547 49
Boulevards, Roads and Avenues, Maintenance of, 1886.....	121 27
Boulevards, Roads and Avenues, Maintenance of—Salaries.....	624 98
Bronx River Works—Maintenance and Repairs.....	5,589 94
Bronx River Works—Maintenance and Repairs—Salaries.....	975 00
Contingencies—Department of Public Works.....	1,268 15
Flagging Sidewalks and Fencing Vacant Lots, etc.....	4,377 00
For New Water-main, etc., North Brother Island.....	15,597 73
Free Floating Baths.....	2,848 49
Free Floating Baths—Salaries.....	4,248 00
Lamps and Gas and Electric Lighting.....	143,638 85
Lamps and Gas and Electric Lighting—Salaries.....	1,549 95
Laying Croton Pipes.....	73,759 08
Laying Croton Pipes, 1887.....	1,237 59
Laying Croton Pipes—Salaries.....	3,939 14
Public Buildings—Construction and Repairs.....	22,880 59
Public Drinking-hydrants.....	725 95
Public Drinking hydrants—Salaries.....	400 00
Removing Obstructions in Streets and Avenues.....	7,661 13
Removing Obstructions in Streets and Avenues—Salaries.....	1,924 98
Repairing and Renewal of Pipes, Stop-cocks, etc.....	52,153 92
Repairing and Renewal of Pipes, Stop-cocks, etc., 1887.....	754 13
Repairs and Renewal of Pavements and Regrading.....	157,206 94
Repairs and Renewal of Pavements and Regrading, 1887.....	1,736 45
Repairs and Renewal of Pavements and Regrading—Salaries.....	7,565 60
Repaving Streets and Avenues.....	125,299 17
Repaving Streets and Avenues, 1887.....	1,376 37
Repaving Streets and Avenues—Salaries.....	5,617 50
Roads, Streets and Avenues Unpaved, etc.....	8,113 93
Salaries—Department of Public Works.....	26,400 80
Salaries of Engineer, Clerks, Inspectors, etc.....	13,038 17
Sewers—Repairing and Cleaning.....	37,610 84
Sewers—Repairing and Cleaning, 1887.....	317 00
Sewers—Repairing and Cleaning—Salaries.....	2,489 98
Sewerage System—Salaries.....	6,899 99
Street Improvements—For Surveying, Monumenting, etc.....	266 00
Supplies for and Cleaning Public Offices.....	32,724 71
Supplies for and Cleaning Public Offices, 1887.....	470 10
Supplies for and Cleaning Public Offices—Salaries.....	5,239 87
Surveys, Maps, etc., for Street Openings, etc.—Salaries.....	2,075 00
Supplying Water to Shipping, etc.—Salaries.....	2,493 99
Water Supply for the Twenty-fourth Ward.....	1,821 28
Water Supply for the Twenty-fourth Ward—Salaries.....	300 00
Total.....	\$870,302 76

TRUST ACCOUNTS.

CROTON WATER FUND.

Architect's fees.....	\$400 00
Clerical services.....	1,510 49
Coal and wood.....	149 25
Expert services.....	225 00
Floor at gate-house.....	282 50
Land damages.....	3,632 00
Horse-hire.....	334 50
Lumber.....	451 14
Pay-rolls.....	15,540 03
Printing.....	724 64
Recording releases and making searches.....	3,502 82
Rent of mill seat.....	300 00
Rent of offices.....	240 00
Reservoir at Williamsbridge.....	61,083 00
Traveling expenses.....	817 86
Total.....	\$90,093 23

FUND FOR LOCAL IMPROVEMENTS.

Sewers.....	\$106 50
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LOCAL IMPROVEMENT FUND.

Regulating, grading, etc.....	\$5,502 75
Pay-rolls.....	411 00
Total.....	\$5,913 75

STREET IMPROVEMENT FUND.

Curb and flagging.....	\$7,039 11
Fencing.....	1,377 62
Paving and crosswalks.....	80,804 60
Regulating, grading, etc.....	61,946 26
Sewers.....	114,631 32
Pay-rolls.....	28,921 85
Surveying.....	5,889 21
Total.....	\$300,609 97

RESTORING AND REPAVING—SPECIAL FUND.

Pay-rolls.....	\$1,967 25
Restoring pavements.....	8,251 00
Sand.....	227 87
Total.....	\$10,446 12

WATER-METER FUND, NO. 2.

Meters.....	\$4,339 60
Setting meters.....	1,777 41
Total.....	\$6,117 01

GANSEVOORT MARKET BUILDING FUND.

Architect's fees.....	\$3,580 83
Pay-rolls.....	135 00
Surveying.....	303 00
Work on contract.....	67,043 00
Total.....	\$71,061 83

RECAPITULATION OF FUNDS.

Croton Water Fund.....	\$90,093 23
Fund for Local Improvements.....	106 50
Local Improvement Fund.....	5,913 75
Street Improvement Fund.....	300,609 97
Gansevoort Market Building Fund.....	71,061 83
Restoring and Repaving—Special Fund.....	10,446 12
Water-meter Fund, No. 2.....	6,117 01
Total.....	\$484,348 41

GENERAL SUMMARY.

Appropriations.....	\$883,815 67
Funds.....	484,348 41
Total.....	\$1,368,164 08

Document "C."

STATEMENT OF CONTRACTS.

Contracts Entered into During the Three Months ending September 30, 1888.

Date of Contract.	NATURE AND LOCATION OF WORK.	CONTRACTOR.	SURETIES.	ESTIMATED COST.
<i>Sewer Contracts.</i>				
Oct. 2	Sewer in Hamilton place, between One Hundred and Fortieth and One Hundred and Forty-first streets.....	George F. Swift, 48 and 50 Duane st..	Thomas F. White, 41 Peck Slip..... Myles Tierney, 26 West 123d street. William H. Taylor, 343 East 16th street. Charles W. White, 333 East 18th street. Thomas Regan, 719 Lexington ave.. Michael Regan, 99 Barrow street.... Thomas F. Murray, 2349 Tenth avenue.. Thomas Hueston, Broadway and Lawrence street..... Peter McGinnis, 1546 Park avenue... John McQuade, 1338 Lexington ave.. Charles Jones, 257 Alexander ave.. Edward C. Sheehy, 8 West 125th street.. James Williams, 326 East 58th street.. Patrick Reilly, 39 Sutton place.... Eiler Holch, 213 East 53d street.. Jacob Fach, 522 East 84th street.. Jacob Ebling, 176 East 128th street.. William E. Dean, 58 West 127th street.. Jacob Ebling, 176 East 128th street.. William E. Dean, 58 West 127th street.. Jacob Ebling, 176 East 128th street.. Isaac A. Hopper, 163 West 122d street.. Daniel G. McGowan, 1319 Avenue A..... Edward C. Sheehy, 411 East 88th street.. Edward Mahon, 300 East 70th street.. Samuel Smyth, 405 East 61st street.. J. B. Devlin, 8 Henderson place.. C. Jones, 257 Alexander ave.. Thomas Smith, 162 East 84th street.. Charles McGinnis, 127 Broome street.. C. Schildwachter, 2379 Fourth avenue.. Abraham Steers, 16 W. 123d street....	\$691 20 4,621 50 926 88 7,495 23 814 00 3,897 50 4,543 40 1,981 00 4,860 00 11,987 50 7,951 50 940 00 7,005 00 5,616 00 6,126 00 18,497 00
" 3	Repairs to sewer in Stanton street, between Mangin and Sheriff streets.....	R. A. Cunningham, 343 East 16th street.		4,621 50
" 4	Sewer in Liberty place, between Maiden Lane and Liberty street..	Patrick Kearns, 720 East 143d street.		926 88
" 4	Sewer in Hamilton place, between One Hundred and Thirty-sixth and One Hundred and Fortieth streets.....	Thomas Murray, 2349 Tenth avenue..		7,495 23
" 4	Sewer in One Hundred and Nineteenth street, between Manhattan and Ninth avenues.....	Joseph Moore, 180 East 88th street.		814 00
" 4	Sewer in One Hundred and Seventeenth street, between Madison and Fourth avenues.....	George F. Masterson, 1905 Madison avenue		3,897 50
" 8	Sewer in Ninety-fifth street, between Madison and Fourth avenues.....	John McKim & Son, 326 East 58th street.		4,543 40
" 11	Alterations and improvements to sewer at Forty-third street and Eleventh avenue.....	Charles Fach, 1629 Avenue B.....		1,981 00
" 15	Sewer in One Hundred and Fifty-fifth street, between Harlem river and Eighth avenue.....	Verdine E. Horton, 111 West 128th street		4,860 00
" 15	Sewer in South street, between Peck Slip and Fulton street.....	Verdine E. Horton, 111 West 128th street		11,987 50
Nov. 7	Repairs to sewer in Manhattan avenue, between One Hundred and Sixth and One Hundred and Tenth streets.....	William E. Dean, 143 West 125th street.		7,951 50
" 16	Sewer in Third avenue, west side, bet. Eighty-eighth and Eighty-ninth streets.....	William F. Cunningham, 349 East 77th street..		940 00
" 19	Sewer in Sixty-third street, between Tenth and Eleventh avenues.....	George Connolly, 300 East 70th street.		7,005 00
" 19	Sewer in One Hundred and Ninth street, between Tenth avenue and Boulevard.....	Martin & Devlin, 638 East 150th street.		5,616 00
" 20	Sewer in One Hundred and Second street, between Ninth and Tenth avenues.....	Patrick McInerney, 214 East 85th street..		6,126 00
Dec. 20	Alterations and improvements to sewers in Twentieth street, between Tenth avenue and North river.....	William E. Dean, 58 W. 127th street...		18,497 00
" 20	Sewer in Eleventh Avenue Boulevard, east side, between One Hundred and Sixty-first and One Hundred and Sixty-fifth streets; in One Hundred and Sixty-fifth street, between Eleventh Avenue Boulevard and Kingsbridge road, and in Kingsbridge road, east side, between One Hundred and Sixty-fifth and One Hundred and Sixty-ninth streets.....	George F. Swift, 41 Peck Slip.....	Thomas F. White, 41 Peck Slip..... P. F. Ferrigan, 165 E. 116th street...	24,722 75
" 21	Sewer in One Hundred and Sixty-fifth street, between Tenth avenue and Edgecombe road.....	Alfredo Del Genovese, 9 Bowery.....	Virgilio Del Genovese, 268 Bowery..... Eugenio Del Genovese, 354 Bowery..... Eiler Holch, 213 East 55th street.. Jacob Fach, 522 East 84th street.. D. G. McGowan, 1319 Avenue A..... Edward C. Sheehy, 170 Broadway..... Robert Gordon, 230 East 62d street.. Edward Mahon, 300 East 75th street.. Michael Casey, 833 East 170th street.. Michael Hughes, 65 East 92d street...	3,085 04 1,597 60 1,605 00 1,295 00 9,105 00
" 24	Sewer in West street, between Rectory and Carlisle streets.....	Charles Fach, 524 East 84th street.		1,597 60
" 24	Sewer (extension) in Ninetieth street, between Ninth and Tenth avenues, from end of present sewer..	William F. Cunningham, 349 East 77th street.		1,605 00
" 24	Sewer in Eldridge street, between Grand and Broome streets.....	Patrick Larney, 325 East 38th street.		1,295 00
" 27	Sewer in Seventy-third street, between East river and Avenue A..	John P. & James H. Kerrigan, 1603 Bathgate ave...		9,105 00
				\$129,364 12

Date of Contract	NATURE AND LOCATION OF WORK.	CONTRACTOR.	SURETIES.	ESTIMATED COST.	Date of Contract	NATURE AND LOCATION OF WORK.	CONTRACTOR.	SURETIES.	ESTIMATED COST.
	<i>Regulating and Grading Contracts.</i>					<i>Special Contracts.</i>			
Oct. 4	Flagging, etc., north side Sixty-fifth street, between Eighth and Ninth avenues	Wm. F. Cunningham, 349 East 77th street..	Cornelius Keegan, 551 West 53d street. D. G. McGowan, 1319 Avenue A.....	\$1,678 70	Oct. 9	Flagging, etc., both sides of Ninety-eighth street, from Boulevard to West End avenue	P. H. Kerwin, 802 Eleventh avenue.	B. Mahon, 2293 Seventh avenue	\$694 40
Nov. 5	Flagging, etc., south side One Hundred and Thirty-third street, from Lenox to Seventh avenue	A. E. Moran, 172 East 74th street.	Michael McGrath, 64 East 106th street. D. W. Moran, 219 East 71st street..	908 58	" 16	Fencing vacant lots in block bounded by One Hundred and Twelfth and One Hundred and Thirtieth streets, Eighth to Manhattan avenue	Bernard A. Roth, 402 East 122d street.	F. Thilemann, Jr., 119 East 122d street.	227 50
" 5	Flagging, etc., both sides Ninety-first street, between Eighth and Ninth avenues	A. E. Moran, 172 East 74th street.	Michael McGrath, 64 East 106th street. D. W. Moran, 219 East 71st street..	968 74	" 16	Receiving-basin northwest corner of One Hundred and Eleventh street and Madison avenue	B. Mahon, 2293 Seventh avenue.	Walter J. Ford, Stewart Building....	388 00
" 5	Regulating and grading One Hundred and Sixth street, from Boulevard to Riverside Drive	John Cahill, 199th st., St. Marys' Park.....	Joseph Kuntz, 1233 Fulton avenue.. Thomas Guilfoyle, 2447 Third avenue ..	22,360 35	" 16	Receiving-basin northwest corner One Hundred and Sixth street and Pleasant avenue	B. Mahon, 2293 Seventh avenue.	Walter J. Ford, Stewart Building....	388 00
" 8	Flagging, etc., south side One Hundred and Twenty-fifth street, from Second to Third avenue	William H. Hornidge, 155 East 48th street.	P. H. Kerwin, 445 East 57th street.. Joseph McGowan, 455 East 55th street.	838 97	" 16	Receiving-basin, northwest corner Madison avenue and One Hundred and Thirtieth street	B. Mahon, 2293 Seventh avenue.	Walter J. Ford, Stewart Building....	368 00
" 8	Flagging, etc., on both sides of One Hundred and Fifteenth street, from Second to Third avenue	William H. Hornidge, 155 East 48th street.	P. H. Kerwin, 445 East 57th street.. Joseph McGowan, 455 East 55th street.	948 38	" 16	Receiving-basin, southeast corner Ninety-first street and Ninth avenue	B. Mahon, 2293 Seventh avenue.	Walter J. Ford, Stewart Building....	418 00
" 1	Setting curb-stones, etc., on One Hundred and Eighteenth street, from Seventh to Eighth avenue	A. E. Moran, 172 East 74th street.	M. McGrath, 64 East 106th street. D. W. Moran, 219 East 71st street..	1,911 49	" 16	Receiving-basin, southwest corner One Hundred and Forty-fifth street and first new avenue west of Eighth avenue	B. Mahon, 2293 Seventh avenue.	Walter J. Ford, Stewart Building....	580 00
" 21	Flagging on block bounded by Centre, Broome, Centre Market place and Grand streets	William H. Hornidge, 155 East 48th street..	P. H. Kerwin, 445 East 57th street.. Joseph McGowan, 440 East 55th street..	1,114 25	" 17	Extension of sewer in Fifty-second street, between Third and Lexington avenues	Terence A. Smith, 162 East 36th street.	Thomas F. Mullins, 324 East 57th street.	1,085 00
Dec. 11	Regulating and grading One Hundred and Forty-seventh street, from Tenth avenue to Boulevard.	Maicho Fortunato, 163d street and Edgecombe avenue	William Bostelmann, 102 West street..... Solomon Jacobs, 116 East 76th street..	15,576 52	" 19	Laying a crosswalk across Western Boulevard, at north side of Eighty-third street	P. H. Kerwin, 445 East 57th street.	B. Mahon, 2293 Seventh avenue	213 36
" 11	Regulating and grading Ninety-first street, from Ninth to Tenth avenue	Maicho Fortunato, 163d street and Edgecombe avenue	William Bostelmann, 102 West street..... Solomon Jacobs, 116 East 76th street..	13,292 10	" 19	Laying a crosswalk across One Hundred and Twenty-eighth street, at easterly side of Second avenue.	P. H. Kerwin, 445 East 57th street.	B. Mahon, 2293 Seventh avenue.	71 70
" 12	Regulating and grading One Hundred and Seventh street, from West End avenue to Riverside Drive	Patrick McInerney, 214 East 85th street.	John Fleming, 211 East 83d street.. Charles McGinnis, 127 Broome street..	5,692 40	" 19	Laying a crosswalk across Avenue St. Nicholas, at north side of One Hundred and Twenty-fourth street	P. H. Kerwin, 445 East 57th street.	B. Mahon, 2293 Seventh avenue	157 15
" 20	Regulating and grading Ninetieth street, from Tenth avenue to Riverside Drive (except between Boulevard and Riverside Drive) ..	Virgilio Del Genovese, 268 Bowery	Alfredo Del Genovese, 268 Bowery	2,182 00	" 19	Laying a crosswalk across Avenue St. Nicholas, at south side of One Hundred and Fifty-fifth street ..	P. H. Kerwin, 445 East 57th street.	B. Mahon, 2293 Seventh avenue	136 35
" 24	Regulating and grading One Hundred and Seventieth street, from Tenth to Eleventh avenue	Newell & Freleigh, 171st street and 10th avenue	Solomon Jacobs, 116 E. 76th street... M. Kyle, High Bridge	9,278 28	" 19	Laying a crosswalk across Avenue St. Nicholas, at north side of One Hundred and Twenty-eighth street	P. H. Kerwin, 445 East 57th street.	B. Mahon, 2293 Seventh avenue	136 35
			J. C. Rodgers, 152d st. and 11th ave	\$76,250 76	" 19	Laying a crosswalk across Boulevard, at north and south sides of One Hundred and Twenty-ninth street	P. H. Kerwin, 445 East 57th street.	B. Mahon, 2293 Seventh avenue	608 55
	<i>Paving Contracts.</i>				" 19	Flagging south side Eighty-third street, between Ninth and Tenth avenues	P. H. Kerwin, 445 East 57th street.	B. Mahon, 2293 Seventh avenue	685 76
Oct. 8	Paving with granite-block pavement Eighty-third street, from First avenue to Avenue A	Thomas Hayden, 20 Clinton place, Brooklyn, N. Y. ...	Erastus Crawford, 220 West 28th street. William H. Morton, 346 Bowery	\$5,619 90	" 19	Regulating and grading, etc., One Hundred and Twenty-second street, from St. Nicholas to Manhattan avenue	P. H. Kerwin, 445 East 57th street.	B. Mahon, 2293 Seventh avenue	911 59
" 8	Paving with granite-block pavement West End avenue, from Seventy-sixth to Eighty-ninth street	James Pollock, 239 East 128th street	Michael Larkin, 338 East 15th street. James Mulry, 30 East 81st street...	34,922 40	" 19	Flagging etc., south side of One Hundred and Sixteenth street, between Second and Third avenues	P. H. Kerwin, 445 East 57th street.	B. Mahon, 2293 Seventh avenue	647 08
" 18	Laying crosswalks across Seventh avenue, at northerly and southerly sides of all streets crossing said avenue, from Twenty-fourth to Forty-first street, inclusive (excepting at Thirty-fourth street)	Edward Mahon, 300 East 75th street..	Patrick Larney, 325 East 36th street.. J. F. Boyle, 676 Second avenue..	3,666 00	" 19	Regulating and grading, etc., One Hundred and Thirtieth street, from Eighth to St. Nicholas avenue	P. H. Kerwin, 445 East 57th street.	B. Mahon, 2293 Seventh avenue	311 01
Nov. 15	Paving with granite-block pavement One Hundred and Forty-first street, from Seventh to St. Nicholas avenue	Thomas Gearty, 135 East 83d street ..	Farrell Dorrity, 240 East 32d street.. P. H. McCullagh, 240 East 32d street..	11,177 55	" 20	Sewer in Lexington avenue, between One Hundred and Sixteenth and One Hundred and Seventeenth streets	R. A. Cunningham, 343 East 16th st.	William H. Taylor, 343 East 16th street..	975 00
" 20	Paving with granite-block pavement West End avenue, from Eighty-ninth to Ninety-sixth street	P. H. McCullagh, 240 East 32d street..	Farrell Dorrity, 240 East 32d street.. Thomas Gearty, 135 East 83d street..	19,828 30	" 24	Laying a crosswalk across Western Boulevard, at north side of Eighty-second street	P. H. Kerwin, 445 East 57th street.	B. Mahon, 2293 Seventh avenue	212 75
Dec. 4	Paving with granite-block pavement Madison avenue, from One Hundred and Eighth to One Hundred and Tenth street	Charles Guidet, 41 Park avenue	M. B. Brown, 931 Madison avenue.. R. W. Buckley, 58 East 73d street..	5,871 98	Nov. 14	Fencing vacant lots northeast corner of Seventh avenue and One Hundred and Twenty-first street	P. H. Kerwin, 445 East 57th street.	B. Mahon, 2293 Seventh avenue.	63 00
" 4	Paving with Trinidad asphalt pavement West End avenue, from Sixty-ninth to Seventy-second street	Barber Asphalt Paving Company, 1 Broadway	James D. Leary, 43 East 25th street.. Joseph Cummings, 45 Duane street....	13,827 50	" 21	Fencing vacant lots in block bounded by One Hundred and Tenth and One Hundred and Twelfth streets, Eighth and Manhattan avenues	Bernard A. Roth, 402 East 122d street.	F. Thilemann, Jr., 119 East 122d street.	383 00
" 14	Paving with granite-block pavement One Hundred and Twenty-first street, from Seventh to Eighth avenue	James Pollock, 239 East 128th street	Michael Larkin, 338 East 15th street. James Mulry, 30 East 81st street...	6,136 40	" 23	Receiving-basin, northeast corner of One Hundred and Forty-fifth street and Eighth avenue	Matthew Baird, 339 East 63d street..	James Baird, 339 East 63d street..	298 00
" 27	Paving with granite-block pavement, Eighty-ninth street, from Ninth to Tenth avenue	William J. Clark, 339 East 63d street..	James Mulry, 30 East 81st street.. James Baird, 310 East 57th street.. Matthew Baird, 339 East 63d street..	6,382 72	" 23	Receiving-basin, northwest corner of One Hundred and Thirty-fifth street and Madison avenue	Matthew Baird, 339 East 63d street..	James Baird, 339 East 63d street..	325 00
				\$107,432 75	" 23	Receiving-basin, southwest corner of One Hundred and Thirty-fifth street and Fifth avenue	Matthew Baird, 339 East 63d street..	James Baird, 339 East 63d street..	335 00
	<i>Paving Contracts under Section 321, New York City Consolidation Act of 1882.</i>				" 28	Receiving-basin, northeast corner of Sixty-ninth street and West End avenue	Terence A. Smith, 162 East 36th street..	Joseph C. Biglin, 157 East 57th street.	322 50
Dec. 4	Paving with granite-block pavement, Hudson street, from Chambers to Beach street	Charles Guidet, 41 Park avenue	M. B. Brown, 931 Madison avenue.. R. W. Buckley, 58 East 73d street.. Alexander Milne, Stamford, Conn.....	\$43,450 00	" 28	Receiving-basin, southeast corner of Seventieth street and West End avenue	Terence A. Smith, 162 East 36th street..	Joseph C. Biglin, 157 East 57th street.	262 50
" 18	Paving with granite-block pavement, Twenty-eighth street, from First avenue to East river	William A. Cumming, Stamford, Conn.....	James Mulry, 30 East 81st street ..	3,320 20	Dec. 3	Flagging, etc., north side Seventy-first street, from Lenox to Seventh avenue	P. H. Kerwin, 445 East 57th street..	B. Mahon, 2293 Seventh avenue	297 60
				\$46,770 00	" 3	Flagging, etc., east side Lenox avenue, from One Hundred and Forty-third to One Hundred and Forty-sixth street	P. H. Kerwin, 445 East 57th street.	B. Mahon, 2293 Seventh avenue	50 08
	<i>Miscellaneous Contracts.</i>				" 3	Flagging, etc., Park avenue, from One Hundred and Thirtieth to One Hundred and Fourteenth street	P. H. Kerwin, 445 East 57th street.	B. Mahon, 2293 Seventh avenue	230 67
Nov. 20	Boring and testing for water on Blackwell's Island	G. W. Haskell, Broadway and 51st st.	James McClenahan, 301 Tenth avenue ... Daniel Dull, 1648 Broadway.....	\$4,110 00	" 4	Receiving-basins, northwest and southwest corners of One Hundred and Eighth street and Tenth avenue	Wm. F. Cunningham, 349 East 63d street..	C. Keegan, 613 West 54th street.	489 00
Dec. 21	Furnishing cast-iron water-pipes, branch pipes and special castings (640 tons straight pipe and 30 tons branch pipes and special castings)	Camden Iron Works, Philadelphia, Pa.	American Surety Co., 160 Broadway	16,029 60	" 7	Flagging, etc., northeast corner of Seventh avenue, and One Hundred and Twenty-first street	P. H. Kerwin, 445 East 57th street.	B. Mahon, 2293 Seventh avenue	152 00
" 21	Furnishing cast-iron water-pipes, branch pipes and special castings (440 tons straight pipe and 30 tons branch pipes and special castings).	Camden Iron Works, Philadelphia, Pa.	H. P. Kremer, 106 Franklin street.. American Surety Co., 160 Broadway	11,451 60	" 10	Receiving-basin, southwest corner Seventy-third street and Boulevard	John Slattery, 868 Fourth avenue...	Thomas Gearty, 135 East 83d street...	289 00
				\$31,591 20	" 10	Receiving-basin, northeast corner Seventy-third street and Boulevard	John Slattery, 868 Fourth avenue...	Thomas Gearty, 135 East 83d street...	275 00
Oct. 6	Furnishing, delivering and laying 6-inch cast-iron water-pipe, from present main on Locust avenue and One Hundred and Fortieth street to main on North Brother Island	John Cornwell, Jr., 529 East 161st street,	Moses Mehrbach, 74 East 74th street.. Sol. Mehrbach, 124 East 79th street.	\$15,952 50	" 4	Receiving-basin, southwest corner One Hundred and Forty-eighth street and Eighth avenue	Terence A. Smith, 162 East 36th street..	Joseph C. Biglin, 157 East 57th street..	319 50
Dec. 7	Furnishing, delivering and laying water-mains in One Hundred and Tenth street, between Tenth and Manhattan avenues	Bernard Mahon, 2293 Seventh avenue.	Maurice B. Flynn, 784 Fifth avenue..... P. H. Kerwin, 445 East 57th street..	20,239 50	" 4	Receiving-basin, southeast corner Eighty-sixth street and Tenth avenue	Terence A. Smith, 162 East 36th street..	Joseph C. Biglin, 157 East 57th street..	301 25
				\$36,192 00	" 10	Receiving-basin, northwest corner 72d street and Riverside avenue ..	John Slattery, 868 Fourth avenue..	Thomas Gearty, 135 East 83d street..	460 00
	<i>Gas Contracts.</i>				" 12	Fencing vacant lots, west side Eighth avenue, between One Hundred and Forty-eighth and One Hundred and Fifty-second streets	Bernard A. Roth, 402 East 122d street.	P. H. Kerwin, 445 East 57th street..	199 83
Dec. 26	Furnishing illuminating gas for lighting the public markets, armories, buildings and offices of the City of New York, from January 1 to December 31, 1889, inclusive	Consolidated Gas Company of New York, 4 Irving place.....	Percy R. Pyne, 25 East 22d street... Sam Sloan, 7 East 38th street ...	\$22,000 00	" 12	Fencing vacant lots in block bounded by One Hundred and Seventh and One Hundred and Eighth streets, Eighth and Manhattan avenues..	Bernard A. Roth, 402 East 122d street.	P. H. Kerwin, 445 East 57th street..	592 00
" 29	Furnishing illuminating gas for lighting the public markets, armories, buildings and offices of the City of New York, from January 1 to December 31, 1889, inclusive	Equitable Gas-light Co. of New York, 340 Third avenue..	William H. Gebhard, Park Avenue Hotel.. John Fox, 10 East 50th street..	14,000 00	" 19	Receiving-basin, northeast corner Seventy-fourth street and Tenth avenue	Terence A. Smith, 162 E. 36th street....	Joseph C. Biglin, 157 E. 57th street....	257 00
				\$36,000 00	" 28	Flagging, etc., west side Eighth avenue, from One Hundred and Twelfth to One Hundred and Thirtieth street	P. H. Kerwin, 445 East 57th street.	B. Mahon, 2293 Seventh avenue.	131 29
					" 31	Laying a crosswalk across Seventh avenue, at north side of One Hundred and Thirtieth street	P. H. Kerwin, 445 East 57th street.	B. Mahon, 2293 Seventh avenue.	233 00
					" 31	Laying a crosswalk across Seventh avenue, at north and south sides of One Hundred and Twenty-sixth street	P. H. Kerwin, 445 East 57th street.	B. Mahon, 2293 Seventh avenue	466 00
				\$36,437 47					

RECAPITULATION.

22 Sewer Contracts.....	\$109,354 12
13 Regulating and Grading Contracts.....	76,250 76
9 Paving Contracts.....	107,432 75
2 Paving Contracts under Section 321, New York City Consolidation Act of 1882.....	45,770 00
3 Miscellaneous Contracts.....	31,591 20
2 Laying Water-main Contracts.....	36,192 00
2 Gas Contracts.....	36,000 00
45 Special Contracts.....	16,137 47
98 Contracts.....	\$480,038 30

Contracts Completed during the Three Months ending December 31, 1888.

DATE.	NATURE.	LOCATION OF WORK.	TOTAL COST.	DATE.	NATURE.	LOCATION OF WORK.	TOTAL COST.
Oct. 2	Sewer.....	In One Hundred and Fifteenth street, between Eighth and Manhattan avenues, and between Manhattan avenue and avenue east of Morningside Park.....	\$2,974 11	Nov. 7	Laying a crosswalk.....	Across University place, at south side of Tenth street.	\$126 21
" 2	".....	In Ninth avenue, between One Hundred and Fourth and One Hundred and First streets.....	12,104 55	" 9	Sewer.....	In Ninetieth street, between West End avenue and Boulevard.....	1,790 26
" 3	Sewer repairs.....	In First avenue, between One Hundred and One Hundred and Second streets.....	2,381 56	" 9	".....	In Ninety-first street, between West End avenue and Boulevard.....	1,348 03
" 4	Sewer.....	In One Hundred and Eighteenth street, between Fourth and Madison avenues, connecting with present sewer in Fourth avenue.....	4,890 93	" 9	".....	In One Hundred and First street, between Fourth and Lexington avenues.....	5,752 99
" 4	".....	In One Hundred and Fifty-third street, between Tenth avenue and Boulevard, connecting with present sewer in Boulevard.....	4,206 77	" 12	".....	In Avenue B, between Second and Third streets.....	1,457 06
" 4	".....	In One Hundred and Forty-second street, between Boulevard and Hamilton place.....	5,038 57	" 13	Furnishing materials and performing work in the erection and completion of the New Gansevoort Market.....		477,413 00
" 4	".....	In West End avenue, between Eighty-ninth and Ninety-first streets.....	4,181 09	" 14	Laying a crosswalk.....	Across Western Boulevard, at south side of Seventy-fourth street.....	280 92
" 4	Receiving basins.....	Northeast and southeast corners One Hundred and Twenty-second street and Madison avenue.....	559 99	" 16	Paving with trap-block pavement.....	Twenty-ninth street, from Ninth to Tenth avenue, and Forty-ninth street, from Eleventh avenue to North river.....	11,428 23
" 5	Paving with granite-block pavement. Furnishing, delivering and laying six-inch cast-iron water-pipe.....	Eighty-ninth street, from Eighth to Tenth avenue. From present main on Seventy-ninth street to main on Blackwell's Island.....	13,080 27	" 16	Sewer.....	In Eighth avenue, between One Hundred and Sixteenth and One Hundred and Twenty-first streets, and in Avenue St. Nicholas, between One Hundred and Twenty-first and One Hundred and Twenty-fourth streets.....	15,982 59
" 9	Regulating and grading, etc.....	Seventy-fourth street, from Avenue A to East river.....	8,410 19	" 16	".....	In Eleventh avenue, east side, between One Hundred and Fifty-ninth and One Hundred and Sixty-first streets.....	5,532 76
" 9	Taking up and relaying the pavement.....	In Forty-seventh street, between Broadway and Eighth avenue; Forty-eighth street, between Broadway and Eighth avenue; Forty-ninth street, between Seventh and Eighth avenues; Fifty-first street, between Fifth and Sixth avenues; Fifty-second street, between Sixth and Seventh avenues; Fifty-third street, between Sixth and Seventh avenues, and Fifty-fifth street, between Fifth and Sixth avenues.....	9,883 59	" 16	".....	In Hamilton place, between One Hundred and Forty-first and One Hundred and Forty-second streets, connecting with present sewer in One Hundred and Forty-second street.....	1,664 56
" 9	".....	In One Hundred and Twenty-sixth street, between Fourth and Fifth avenues; One Hundred and Twenty-sixth street, between Sixth and Seventh avenues; Lawrence street, between One Hundred and Twenty-sixth and One Hundred and Twenty-ninth streets; One Hundred and Nineteenth street, between Second and Third avenues, and Second avenue, between One Hundred and Sixth and One Hundred and Tenth streets.....	7,857 37	" 16	Flagging, etc.....	Both sides of Seventy-sixth street, from Eighth to Ninth avenue.....	1,533 58
" 10	Sewer.....	In One Hundred and Nineteenth street, between Manhattan and Eighth avenues.....	1,041 34	" 16	Paving with macadam pavement.....	Eleventh avenue, from One Hundred and Fifty-fifth street to intersection with Kingsbridge road.....	44,219 17
" 10	Regulating and grading.....	One Hundred and Fiftieth street, from St. Nicholas to Edgecombe avenue.....	3,334 80	" 17	Laying water-mains.....	In Tenth, West End, Fourth and Westchester avenues, in One Hundred and Seventy-sixth, One Hundred and Sixteenth, Seventy-second, Sixty-seventh, Fifty-third streets and in Riverside avenue.....	14,561 58
" 12	Sewer.....	In Madison avenue, between One Hundred and Fiftieth and One Hundred and Sixteenth streets.....	2,810 92	" 19	Regulating and grading.....	One Hundred and Twenty-second street, from St. Nicholas to Manhattan avenue.....	1,018 45
" 12	Fencing vacant lots.....	In block bounded by One Hundred and Sixth and One Hundred and Seventh streets, Eighth to Manhattan avenue.....	587 03	" 20	Laying a crosswalk.....	Across First avenue, at south side of One Hundred and Sixteenth street.....	219 23
" 12	Resetting curb-stones.....	On West End avenue, from Sixty-ninth to Seventy-second street.....	471 54	" 20	".....	Across First avenue, at north side of One Hundred and Eleventh street.....	215 19
" 12	Regulating and grading.....	Eleventh avenue, from One Hundred and Fifty-fifth street to Kingsbridge road.....	3,007 72	" 20	Sewer.....	In One Hundred and Fifty-fifth street, between Eighth and Coogan avenues.....	1,563 21
" 15	Laying a crosswalk.....	Avenue A, at southerly side of Seventy-sixth street.....	254 16	" 20	Paving with granite-block pavement.....	Monroe street, from Gouverneur to Jackson street, and Waverley place, from Christopher to Bank street.....	12,724 78
" 16	".....	South side Ninetieth street, from 100 feet east of Third avenue to about 175 feet easterly.....	104 71	" 21	Furnishing materials and performing the work of building a house for storage of coal.....	On the lot, 50 feet by 201 feet 10 inches, between Ninety-sixth and Ninety-seventh streets, 100 feet west of Ninth avenue and a wagon platform.....	22,750 00
" 16	Paving with granite-block pavement. Paving with trap-block pavement.....	Cherry street, from Jackson to Clinton street.....	12,861 10	" 23	Hoisting and hauling away material. Paving with granite-block pavement.....	From old reservoir in Central Park.....	6,136 00
" 16	".....	Ridge street, from Stanton to Houston street; Suffolk street, from Livingston to Stanton street, and Thompson street, from Bleecker to Fourth street.....	9,651 67	" 23	Laying a crosswalk.....	One Hundred and Thirtieth street, from Seventh to Eighth avenue.....	7,016 10
" 17	Sewer.....	In One Hundred and Twelfth street, between Tenth avenue and Boulevard, connecting with present sewer in Boulevard.....	5,198 61	" 23	".....	Across Pleasant avenue, at north and south sides of One Hundred and Twentieth street.....	440 20
" 17	".....	In One Hundred and Sixteenth street, north side, between Fourth and Madison avenues; in One Hundred and Sixteenth street, between Madison and Fifth avenues.....	13,542 22	" 24	".....	Across One Hundred and Twenty-fourth street, at east side of Madison avenue.....	103 25
" 17	".....	In Fifty-third street, between Tenth and Eleventh avenues, with connection to sewer in Eleventh avenue.....	11,089 85	" 24	Receiving-basin.....	Southeast corner One Hundred and Sixty-second street and Avenue St. Nicholas.....	652 26
" 17	Sewer repairs.....	In Ninety-eighth street, between Second and Third avenues.....	2,982 10	" 24	Sewer.....	In Eighty-ninth street, between West End avenue and Boulevard.....	3,190 64
" 17	Laying a crosswalk.....	Across Lenox avenue, at north and south sides of One Hundred and Thirty-fifth street.....	608 65	" 28	Receiving-basin.....	Southeast corner One Hundred and Sixtieth street and Avenue St. Nicholas.....	490 21
" 17	".....	Across Seventh avenue, at south side of One Hundred and Thirty-fifth street.....	309 48	" 28	Sewer.....	In Lexington avenue, between One Hundred and Sixteenth and One Hundred and Seventeenth streets.....	947 41
" 19	Taking up and relaying the pavement.....	In Warren street, between Church and Greenwich streets; Barclay street, between College place and Washington street; John street, between Broadway and Pearl street; Bayard street, between Bowery and Elizabeth street; Catharine street, between Madison and South streets; Chrystie street, between Hester and Canal streets; Mulberry street, between Houston and Bleecker streets, and Eleventh street, between Broadway and University place.....	8,198 44	" 28	Fencing sunken lot.....	On northeast corner Seventh avenue and One Hundred and Twenty-first street.....	80 81
" 19	Sewer.....	In Avenue St. Nicholas, west side, between One Hundred and Seventeenth and One Hundred and Eighteenth streets, and in One Hundred and Eighteenth street, between Avenue St. Nicholas and Eighth avenue.....	2,594 58	Dec. 3	Paving with granite-block pavement.....	Twenty-seventh street, from Ninth to Tenth avenue, and Fortieth street, from Tenth to Eleventh avenue.....	12,255 36
" 20	Laying a crosswalk.....	Across First avenue, at north and south sides of One Hundred and Twenty-fourth street.....	395 54	" 7	Boring and testing for water.....	On North Brother Island.....	4,225 60
" 20	".....	Across Western Boulevard, at south side of Seventy-sixth street.....	287 32	" 7	Flagging, etc.....	Both sides of Ninety-eighth street, from Boulevard to West End avenue.....	767 37
" 20	Paving with granite-block pavement.....	Dry Dock street, from Tenth to Twelfth street; Tompkins street, from Fourteenth to Sixteenth street, and Ludlow street, from Stanton to Houston street.....	12,156 71	" 7	Sewer.....	In Hamilton place, between One Hundred and Fortieth and One Hundred and Forty-first streets.....	1,184 03
" 20	Paving with trap-block pavement.....	Twenty-first street, from Eighth to Tenth avenue.....	11,605 37	" 7	".....	In One Hundred and Nineteenth street, between Manhattan and Ninth avenues.....	1,034 46
" 23	Receiving-basin.....	On east side of Avenue St. Nicholas, opposite One Hundred and Fifty-eighth street.....	288 77	" 7	Regulating and grading.....	One Hundred and Eighteenth street, from Ninth avenue to Boulevard.....	6,650 58
" 24	Regulating and grading.....	One Hundred and Forty-first street, from Hamilton place to Boulevard.....	2,649 96	" 7	Laying a crosswalk.....	Across Boulevard, at north side of Eighty-fourth street.....	370 37
" 24	Laying a crosswalk.....	Across Western Boulevard, at south side of Eighty-first street.....	257 97	" 12	Receiving-basin.....	Northwest corner One Hundred and Eleventh street and Madison avenue.....	420 19
" 24	".....	Across Avenue A, at north side of Seventy-fourth street.....	234 16	" 12	".....	Northwest corner One Hundred and Thirtieth street and Madison avenue.....	369 04
" 25	Regulating and grading.....	One Hundred and Twenty-first street, from Eighth avenue to New avenue.....	1,670 71	" 12	Paving with granite-block pavement.....	Northwest corner One Hundred and Thirty-first street and Park avenue.....	334 55
" 25	".....	One Hundred and Tenth street, from First to Pleasant avenue.....	2,580 33	" 12	".....	Ninety-third street, from Fourth to Fifth avenue.....	7,254 58
" 27	Paving with trap-block pavement.....	One Hundred and Seventh street, from First avenue to East river.....	6,272 33	" 12	Flagging, etc.....	East side St. Nicholas avenue, from One Hundred and Thirty-fifth street to 50 feet north of One Hundred and Thirty-sixth street.....	2,151 74
" 31	Laying a crosswalk.....	Across Sixth and Seventh avenues, at north and south sides of One Hundred and Thirty-sixth street.....	1,101 97	" 12	Paving with granite-block pavement.....	North side Sixty-fifth street, between Eighth and Ninth avenues.....	2,522 07
" 31	Sewer.....	In Eighth avenue, between One Hundred and Fifth and One Hundred and Fourteenth streets, with connection to existing sewer in One Hundred and Tenth street, east of Eighth avenue.....	51,513 84	" 15	".....	Mott street, from Canal to Bleecker street.....	20,285 12
" 31	".....	In Madison avenue, between Ninety-fourth and One Hundred and Third street, and in One Hundred and Third street, between Fifth and Madison avenues.....	26,452 36	" 15	Laying water-mains.....	York street, from St. John's lane to West Broadway; St. John's lane, from Beach to Light street; Cottage place, from Houston to Bleecker street, and Grove street, from Hudson street to Waverley place.....	14,737 74
" 31	Paving with trap-block pavement.....	Eighty-third street, from Avenue A to Avenue B.....	4,958 74	" 15	Taking up and relaying the pavement.....	In Morris, Anthony and Fifth avenues, and in Ash, Berry, Buckhout and One Hundred and Seventy-seventh streets.....	15,353 03
" 31	Furnishing and delivering stop-cocks, hydrants, wooden hydrant boxes and cast-iron stop-cock boxes.....		4,654 00	" 15	".....	In Third avenue, east side, between Thirty-third and Thirty-fourth streets; Lexington avenue, between Fifty-third and Fifty-fourth streets, Fifty-seventh and Fifty-eighth streets, Sixty-third and Sixty-sixth streets, Seventy-first and Seventy-second streets, Seventy-fourth and Seventy-fifth streets; Seventy-eighth and Seventy-ninth streets, and Eighty-first and Eighty-second streets; Fourth avenue, east side, between Seventeenth and Twenty-third streets; Madison avenue, between Fifty-fifth and Fifty-sixth streets; Broadway, between Thirty-sixth and Thirty-seventh streets, Fifty-first and Fifty-second streets, and Fifty-second and Fifty-third streets.....	8,132 05
" 31	Furnishing and delivering stop-cocks, hydrants, wooden hydrant boxes and cast-iron stop-cock boxes.....		4,660 25	" 17	Receiving-basin.....	Southeast corner One Hundred and Forty-fifth street and first new avenue west of Eighth avenue.....	649 41
Nov. 2	Paving with granite-block pavement.....	One Hundred and Fourteenth street, from Park to Madison avenue.....	3,473 90	" 17	".....	Northwest corner One Hundred and Sixth street and Pleasant avenue.....	379 24
" 3	Fencing vacant lots.....	In block bounded by One Hundred and Twelfth and One Hundred and Thirteenth streets, Eighth and Manhattan avenues.....	293 48	" 17	Sewer.....	In Liberty place, between Maiden Lane and Liberty street.....	1,276 90
				" 17	Flagging.....	Both sides of Ninety-first street, between Eighth and Ninth avenues.....	1,223 63
				" 18	Taking up and relaying the pavement.....	In Twenty-eighth street, between Fifth and Madison avenues, and Fourth and Madison avenues; Thirty-first street, between Third and Lexington avenues; Thirty-second street, between Second and Third avenues; Thirty-fourth street, between Fifth and Madison avenues, and between Fourth and Madison avenues; Forty-fifth street, between Second and Third avenues; Forty-sixth street, between Second and Third avenues; Forty-seventh street, between Second and Third avenues; Forty-ninth street, between Second and Third avenues, and First and Second avenues; Fiftieth street, between Fifth and Madison avenues; Fifty-fifth street, between Fourth and Lexington avenues, and Fifty-sixth street, from Bleecker to Eighth street.....	10,568 13
				" 19	Paving with granite-block pavement. Taking up and relaying the pavement.....	In Roosevelt street, between South and Water streets; William street, between Hanover Square and North William street; North William street, between William street and Park Row; Nassau street, between Wall and Spruce streets; Pearl street, between Whitehall and Broad streets, and Beaver street, between Pearl and New streets.....	9,104 63
				" 19	Fencing vacant lots.....	Bounded by One Hundred and Tenth and One Hundred and Twelfth streets, Eighth and Manhattan avenues.....	478 56
				" 19	Furnishing, delivering and laying six-inch cast-iron water-pipe.....	From present main on Locust avenue and One Hundred and Fortieth street to main on North Brother Island.....	15,245 90
				" 24	Paving with trap-block pavement.....	Thirtieth street, from Gansevoort street to Ninth avenue, and Perry street, from Washington to Bleecker street.....	7,257 37
				" 24	Flagging, etc.....	South side One Hundred and Thirty-third street, from Lenox to Seventh avenue.....	820 33
				" 26	Sewer.....	In First avenue, between Ninety-first and Ninety-second streets, connecting with sewer in Ninety-second street.....	2,730 87

DATE.	NATURE.	LOCATION OF WORK.	TOTAL COST.	WORK.	CONTRACTOR.	DATE OF CONTRACT.	ESTIMATED COST. *	DATE OF FINAL ESTIMATE.	AMOUNT OF FINAL ESTIMATE.	AMOUNT PAID IN 1888.
Dec. 27	Fencing vacant lots	On west side Eighth avenue, between One Hundred and Forty-eighth and One Hundred and Fifty-second streets.....	\$246 37	Furnishing tapping-cocks, etc., Laying Croton-pipes in Avenue A, etc.....	John Hume.....	Apr. 27	\$1,375 00	June 11	\$1,375 00	\$1,375 00
" 29	Furnishing and delivering cut stone.	At reservoir at High Bridge.....	3,031 40	Laying Croton-pipe to Blackwell's Island.....	John Cornwell, Jr.....	May 15	9,522 10	Nov. 2	9,058 58	8,605 65
" 29	Repairs to sewer.....	In Stanton street, between Mangin and Sheriff streets.	3,641 50	Building house for storage of coal.....	John Cornwell, Jr.....	" 15	8,226 00	Oct. 5	8,410 19	5,887 13
" 31	Paving with trap-block pavement...	Lewis street, from Grand to Delancey street, and Montgomery street, from Division to Water street.	9,741 73	Furnishing coal at Ninety-eighth street and High Bridge	M. J. Mahoney.....	" 17	22,750 00	Nov. 20	22,750 00	22,750 00
			\$1,105,675 05	Furnishing stop-cocks, hydrants, etc.....	William D. Bruns, Jr.....	" 22	19,170 00			10,092 47

RECAPITULATION.

31 Sewer Contracts.....	\$202,105 65
11 Regulating and Grading Contracts.....	27,590 42
9 Paving Contracts.....	89,534 80
12 Paving Contracts under Section 321, New York City Consolidation Act of 1882..	143,813 91
6 Taking up and Relaying Pavement Contracts.....	52,923 57
7 Miscellaneous Contracts.....	522,900 25
4 Laying Water-main Contracts.....	54,570 70
33 Special Contracts.....	12,235 75
113 Contracts.....	\$1,105,675 05

Document "D."

REPORT OF CHIEF ENGINEER OF THE CROTON AQUEDUCT.

DEPARTMENT OF PUBLIC WORKS,
OFFICE OF CHIEF ENGINEER, NO. 31 CHAMBERS STREET, ROOM 10,
NEW YORK, January 4, 1889.

Hon. D. LOWBER SMITH, Commissioner of Public Works:

DEAR SIR—I herewith submit the report for the quarter ending December 31, 1888, and a summary for the year 1888:

EXPENDITURES FOR THE QUARTER ENDING DECEMBER 31, 1888.

Aqueduct—Repairs, Maintenance and Strengthening	\$57,041 00
Aqueduct—Repairs, Maintenance and Strengthening—Salaries.....	6,593 17
Bronx River Works—Maintenance and Repairs.....	5,589 94
Bronx River Works—Maintenance and Repairs—Salaries.....	975 00
Croton Water Fund.....	90,273 11
Laying Croton Pipes.....	74,996 67
Laying Croton Pipes—Salaries.....	3,939 14
New Water-mains, etc.—North Brother Island	15,597 73
Repairing and Renewal of Pipes, Stop-cocks, etc., Ordinary Repairs.....	9,474 14
Repairing and Renewal of Pipes, Stop-cocks, etc.—West Street	11,928 24
Repairing and Renewal of Pipes, Stop-cocks, etc.—Salaries.....	2,351 82
Water Supply—Twenty-fourth Ward	1,821 28
Water-meter Fund, No. 2.....	5,413 41
Total.....	\$285,994 65

SUMMARY OF EXPENDITURES FOR THE YEAR 1888.

Aqueduct—Repairs, Maintenance and Strengthening.....	\$235,340 56
Aqueduct—Repairs, Maintenance and Strengthening—Salaries.....	26,071 03
Bronx River Works—Maintenance and Repairs.....	21,873 26
Bronx River Works—Maintenance and Repairs—Salaries.....	3,900 00
Croton Water Fund	201,202 06
Contingencies—Department Public Works.....	1,260 10
Laying Croton Pipes.....	182,084 79
Laying Croton Pipes—Salaries	15,179 58
New Water-mains, etc.—North Brother Island	15,597 73
Repairing and Renewal of Pipes, Stop-cocks, etc.—Ordinary Repairs.....	50,440 70
Repairing and Renewal of Pipes, Stop-cocks, etc.—West Street.....	36,611 16
Repairing and Renewal of Pipes, Stop-cocks, etc.—Salaries.....	9,029 29
Water Supply—Twenty-fourth Ward	6,343 52
Water-meter Fund No. 2.....	14,985 74
Total.....	\$819,919 78

WATER SUPPLY—NEW YORK CITY.

Amount Expended to December 31, 1888.

1836 to 1849—	
Aqueduct, reservoirs, etc.....	\$9,031,362 70
Water-pipes and laying	3,828,388 22
1849 to 1870—	
Water-pipes and laying	3,165,785 59
New Reservoir, Central Park, Fourth avenue, 48-inch main, 90-inch pipe High Bridge Improvement and 60-inch pipe across Manhattan Valley.....	2,991,182 89
4-foot pipe across Manhattan Valley.....	157,130 60
High-service Works and mains at High Bridge	589,154 96
Additional alteration, Aqueduct, Eighty-sixth to Ninety-second street.....	320,091 00
Storage reservoirs.....	423,502 95
1870 to January 1, 1888—	
High-service Works and mains at High Bridge.....	165,986 61
Additional alteration, Aqueduct, Ninety-second to One Hundred and Thirtieth street.....	3,772,653 62
Additional alteration, Aqueduct, One Hundred and Eighteenth to One Hundred and Forty-second street.....	57,515 93
Water-pipes and laying	7,895,200 29
Storage reservoirs.....	2,078,365 64
Surveys, etc., for New Aqueduct	607,269 07
Bronx River Works.....	3,749,605 47
During 1888—	
Water-pipes and laying	197,264 37
Storage reservoirs.....	5,907 11
Surveys for New Aqueduct	36,186 28
Bronx River and Byram Works	159,108 87
Total.....	\$39,231,662 17

Contracts Made, Completed and Unfinished in 1888.

WORK.	CONTRACTOR.	DATE OF CONTRACT.	ESTIMATED COST.	DATE OF FINAL ESTIMATE.	AMOUNT OF FINAL ESTIMATE.	AMOUNT PAID IN 1888.
Building reservoir at Williams Bridge.....	Sullivan & Moore.....	1884, June 4	\$457,775 00	1888.....		\$109,188 00
Furnishing cut stone at High Bridge.....	B. Mahon.....	1887, Jan. 20	20,560 00	Mar. 8	\$20,343 50	6,056 00
Furnishing and delivering cast-iron water-pipes, etc.....	John Fox.....	Mar. 22	73,462 00	May 9	85,323 20	28,771 12
Building foundations for house for storage of coal.....	Robert Hanna.....	June 7	24,007 10	" 23	26,755 29	7,137 89
Furnishing coal at Ninety-eighth street and High Bridge	William D. Bruns, Jr.....	Aug. 8	15,520 00	" 14	15,455 30	8,502 92
Furnishing cast-iron water-pipes, etc.....	Mellert Foundry and Machine Co.....	" 23	14,160 00	" 14	13,397 53	7,395 56
Furnishing ashlar stone at High Bridge.....	The Mount Adams Granite Co.....	Mar. 5	4,350 00	Aug. 29	4,236 90	4,236 90
Laying Croton-pipes in Tenth avenue, etc.....	F. Thilemann, Jr.....	" 13	20,435 00	Nov. 16	14,561 58	13,833 50
Laying Croton-pipes in Morris avenue, etc.....	G. M. Dean.....	Apr. 18	18,870 00	Dec. 14	15,353 03	14,585 38
Furnishing stop-cocks, hydrants, etc.....	John Fox.....	" 24	4,655 50	Sept. 11	4,655 50	4,655 50
Furnishing cast-iron water-pipes, etc.....	Reading Foundry Co.....	" 24	27,626 00			25,343 00

STORAGE RESERVOIRS.
The Croton river has furnished a full supply of water to the Aqueduct during the quarter. During the year there were 53 days when no water run over Croton Dam.

Storage Drawn During the Year.	Gallons.
Boyd's Corners Reservoir.....	350,000,000
South East Reservoir.....	570,000,000
Kirk Lake.....	200,000,000
Barrett Pond.....	55,000,000
Croton Lake.....	600,000,000
Total from Croton water-shed.....	1,775,000,000

All of the reservoirs and lakes are now full.
Surveys and plans have been commenced for the building of a reservoir on the Muscoot river, in the town of Somers, Westchester County.

Rainfall—Inches.

	OCTOBER.	NOVEMBER.	DECEMBER.	TOTAL FOR QUARTER.	TOTAL FOR YEAR.
Boyd's Corners Reservoir.....	4.80	4.49	6.13	15.42	63.51
South East Reservoir.....	4.89	4.20	5.89	14.98	61.22
Kensico Reservoir.....	5.35	3.43	4.91	13.69	60.91
Croton Dam.....	4.47	3.33	5.59	13.39	56.90
Central Park Reservoirs.....	4.29	3.59	3.19	11.07	52.39

Rainfall at Storage Reservoir, Boyd's Corners, Putnam County, N. Y., including Melted Snow.

MONTH.	1866.	1867.	1868.	1869.	1870.	1871.	1872.	1873.	1874.	1875.	1876.	1877.
January.....	3.33	2.11	2.90	3.79	4.51	3.80	1.44	5.66	6.96	2.74	1.42	2.68
February.....	3.60	3.00	1.38	3.64	6.40	3.81	1.22	3.03	2.78	3.47	4.91	0.80
March.....	3.33	1.49	2.55	5.48	3.80	4.27	2.59	3.08	1.57	4.99	6.33	7.66
April.....	3.79	3.74	3.87	2.11	5.45	3.01	3.04	3.77	6.31	3.04	4.43	2.35
May.....	5.62	6.86	8.79	4.52	2.30	3.45	3.69	2.91	1.99	1.08	3.99	0.85
June.....	4.45	5.28	4.53	3.59	2.06	5.73	4.00	0.71	3.57	3.02	2.52	4.95
July.....	4.01	5.25	2.13	2.26	3.43	5.07	4.34	2.21	5.98	3.10	3.42	4.65
August.....	6.56	10.04	6.98	1.92	5.10	5.24	5.99	5.73	2.75	10.33	1.20	2.54
September.....	4.92	3.62	9.33	3.20	2.85	1.44	3.69	3.73	3.56	2.11	5.21	1.49
October.....	5.09	3.66	0.87	9.46	4.73	6.18	2.15	5.13	2.40	3.61	1.50	8.38
November.....	3.80	3.10	4.65	2.43	2.51	4.35	4.91	3.72	2.72	4.61	3.40	8.16
December.....	3.27	2.62	2.35	5.96	1.49	2.59	3.68	4.13	1.78	1.56	2.35	1.52
Total.....	51.77	50.77	50.33	48.36	44.63	48.94	40.74	43.87	42.37	43.66	40.68	46.03

MONTH.	1878.	1879.	1880.	1881.	1882.	1883.	1884.	1885.	1886.	1887.	1888.
January.....	4.49	2.52	4.00	4.19	4.41	2.80	5.07	5.59	5.24	5.63	5.56
February.....	3.65	2.85	2.92	5.28	5.96	5.21	6.31	4.66	5.20	6.01	5.07
March.....	3.10	4.96	4.51	6.14	4.58	1.67	4.82	1.29	3.86	3.60	6.44
April.....	2.85	5.10	3.99	1.67	1.36	3.94	2.96	2.09	3.61	3.47	2.68
May.....	4.97	2.45	1.17	3.74	6.30	2.86	4.33	2.44	4.54	0.32	6.27
June.....	4.65	5.29	1.28	5.72	3.04	5.64	2.04	1.19	3.09	7.70	2.00
July.....	4.28	5.95	5.65	2.45	3.63	4.26	6.54	5.27	4.40	13.32	2.43
August.....	2.66	5.83	3.60	1.71	3.92	2.09	4.50	7.35	3.21	7.06	6.87
September.....	6.61	3.43	2.69	0.75	14.33	2.45	1.69	1.09	2.30	2.00	10.77
October.....	3.78	0.95	3.25	3.65	3.33	6.99	3.74	5.19	2.28	3.12	4.80
November.....	4.36	2.49	2.97	4.50	1.66	1.79	4.37	5.99	5.57	2.69	4.49
December.....	8.74	4.26	2.49	6.53	2.68	3.45	7.34	3.84	4.29	6.71	6.13
Total.....	54.14	46.08	38.52	46.33	55.20	43.15	53.71	45.99	47.59	61.68	63.51

BRONX RIVER SUPPLY.

The Commissioners appointed to appraise damages along the Bronx river, between Bronxville and Woodlawn, for the diversion of water, owing to the death of one of them, have not been able to make their reports. All of the testimony has been taken.

The searches, maps, etc., necessary for the appraisal of damages along the Bronx river, between Woodlawn and tide-water, are about completed.

The work on the inside of the Williamsbridge Reservoir has been completed and water was turned into same on December 4 and it is now filling about one foot per day.

It will take next year to complete and sod the outside bank of this reservoir, erect the necessary fences and complete the roads around same.

The regular force has been employed in cleaning ditches, repairing roads and fences and in excavating at Rye Ponds Reservoir.

The supply of water has been uninterrupted during the year, except for twenty-four hours, when the conduit was shut off to repair a joint near Bronxville.

1,656,000,000 gallons of water were supplied during the quarter.

6,357,000,000 gallons of water were supplied during the year, an average of 17,100 millions gallons per day.

The large rainfall, especially during the summer, keeping the supply above the average of 13 millions per day calculated upon.

Negotiations for land, etc., on the Bear Gutter Creek and Byram river, required to divert the waters of Byram river into the Kensico Reservoir have been continued and several pieces of property have been purchased.

The work to be done to make this diversion has been advertised and let.

Lands Acquired and Damages Paid in 1888.

Voucher No.	Parcel No.	NAME OF OWNER.	FOR WHAT PAID.	AMOUNT PAID.	REMARKS.
503	25	Maryette Huestis.....	Land.....	\$2,045 00	On Byram river.
504	24	Daniel B. Sutton.....	".....	395 00	Between Byram river and Bear Gutter Creek.
605	1 and 2	Anna E. Tucker.....	".....	295 00	On Bear Gutter Creek.
606	3	Charles Robbins.....	".....	195 00	"
607	4	Mary Whitney.....	".....	14 00	"
608	6	Thomas Dinan.....	".....	20 00	"
609	8	Edward Riley.....	".....	35 00	"
610	9	A. L. Riley.....	".....	15 00	"
611	10	John Lowery.....	".....	395 00	"
612	{11, 14, 16, 17}	Robert Blake.....	".....	345 00	"
750	19	Stephen White.....	".....	523 00	"
816	23	Charles Lambert.....	".....	1,795 00	"

Amount Expended to December 31, 1888.

	To DECEMBER 31, 1887.	IN 1888.	TOTALS.
Labor and materials.....	\$2,449,733 81	\$111,819 10	\$2,561,552 91
Land, damages and expenses.....	1,024,788 26	22,982 38	1,047,770 64
Engineering and inspection.....	275,083 40	24,307 39	299,390 79
Totals to date.....	\$3,749,605 47	\$159,108 87	\$3,908,714 34

Water Drawn from Storage during the Quarter.

	Gallons.
Rye Ponds Reservoir.....	70,000,000
Kensico Reservoir.....	80,000,000
Total drawn during Quarter.....	150,000,000

Water Drawn from Storage during 1888.

	Gallons.
Rye Ponds Reservoir.....	830,000,000
Kensico Reservoir.....	330,000,000
Total drawn during year.....	1,160,000,000

The heavy rains in December has again filled Kensico Reservoir, and Rye Ponds Reservoir is more than half full.

NEW AQUEDUCT.

The following work has been done during the year 1888, in connection with the New Aqueduct: Surveys under Corporation Council, of lands on Westchester Section of New Aqueduct and for Sodom Reservoir.

Surveys of property, etc., in the Croton Basin, between Quaker Bridge and Sodom Dam.

Maps of additional property required on New York Island and for Sodom Reservoir.

Examinations, etc., of plans and specifications for stop-cocks, reservoirs and dams at east branch of the Croton river, and for gate-house at Central Park Reservoir.

Superintendence and inspection of work on New York Island and at Croton Dam, where the work under the Aqueduct Commissioners interferes with or requires changes in the roads, pipes and sewers under care of the Department of Public Works.

AQUEDUCT—REPAIRS, MAINTENANCE AND STRENGTHENING.

Work Done during the Quarter ending December 31, 1888.

DIVISIONS.	Earth Excavation.	Stone Quarried.	Dry Masonry.	FENCE.		Filling and Grading.	Stone Masonry.	Cut-stone Masonry.	Paving.	Sodding.	Flagging Laid.	Curb Set.
	Cu. yds.	Cu. yds.	Cu. yds.	Lin. feet.	Re. paired.	Cu. yds.	Cu. yds.	Cu. feet.	Sq. yds.	Sq. yds.	Sq. yds.	Lin. feet.
First.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Second.....	100	.....	50	705	.....	.....	.....	.....	.....	.....	.....	.....
Third.....	300	.....	241	40	950	.....	.....	.....	30	.....	.....	.....
Fourth.....	.....	.....	.....	900	1,250	.....	.....	.....	13	.....	.....	.....
Fifth.....	250	125	261	600	1,100	75	.....	.....	58	607	200	.....
Sixth.....	534	335	185	1,400	.....	1,144	.....	.....	.....	.....	.....	.....
Seventh.....	445	90	.....	.....	375	20	1,287	.....	.....	.....	.....	504
Eighth.....	1,400	50	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Total.....	3,029	600	737	3,645	3,300	1,524	20	1,287	101	607	200	504

The regular work on the several divisions has been conducted as usual during the quarter, such as care of surface of Aqueduct, gate-houses, machinery, and patrolling reservoirs; watching and attending leaks; cutting grass; building and repairing fences.

The particular work on each division has been as follows:

First Division—Cutting brush, trees, etc., from islands in lake; cutting brush around lake; painting gate-house; care of dam, gate-houses and machinery; patrolling vicinity of same.

Second Division—Building retaining-wall near Quaker Bridge; cleaning up line from leaves and rubbish; watching and attending leaks; building and repairing fences.

Third Division—Building retaining-wall on Howe's bank; raising and grading Phelps's bank; branding Aspinwall leak; hauling stone from quarry; repairing walls and fences, paving gutters.

Fourth Division—Cleaning up line of Aqueduct; repairing and grading slopes; cleaning culverts; repairing crosswalks; building and repairing fences.

Fifth Division—Building walls at upper end of division; sodding banks; paving gutters; quarrying and hauling stone; building and repairing fences.

Sixth Division—Continuation of retaining-wall in Pratt's lot; quarrying stone for same; spreading manure on banks; filling and grading banks; building and repairing fences.

Seventh Division—Care of High Bridge, tower, reservoir, gate-houses, machinery and grounds; finishing of painting High Bridge railing; setting coping south side of reservoir; building steps east side of reservoir; excavating rock and earth and grading around reservoir; setting curb on Tenth avenue; hoisting coal; patrolling Aqueduct property; hauling sand, etc.

Eighth Division—Cleaning and repairs to Central Park and Forty-second Street Reservoirs, gate houses, etc.; cleaning up around reservoirs; excavating earth and rock from old reservoir, Central Park; cleaning and repairs of High Service Works, Ninety-eighth street; cutting grass, etc.

Croton Aqueduct—Repairs, Maintenance and Strengthening for the Year 1888.

DIVISIONS.	Earth Excavation.	Stone Quarried.	Dry Masonry.	FENCE.		Paving.	Arching Aqueduct.	Filling and Grading.	Stone Masonry.	Cut Stone Masonry.	Brick Masonry.	Sodding.	Flagging Laid.	Curb Set.
	Cu. yds.	Cu. yds.	Cu. yds.	Lin. feet.	Re. paired.	Sq. yds.	Lin. feet.	Cu. yds.	Cu. yds.	Cu. feet.	Cu. yds.	Sq. yds.	Sq. feet.	Lin. feet.
First.....	.....	.....	.....	5,937	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Second.....	400	.....	542	4,757	.....	.....	.....	.....	.....	.....	.....	.....	247	.....
Third.....	921	461	777	1,740	950	119	.....	.....	.....	.....	.....	.....	.....	.....
Fourth.....	.....	.....	77	1,300	3,575	13	.....	180	.....	.....	.....	.....	.....	.....
Fifth.....	1,618	187	998	7,532	4,800	419	600	425	406	.....	133	1,307	560	.....
Sixth.....	2,064	1,981	944	8,221	375	90	628	3,144	348	.....	138	483	.....	.....
Seventh.....	3,056	1,166	322	250	.....	.....	.....	2,772	836	4,894	.....	.....	.....	504
Eighth.....	5,201	50	.....	.....	.....	.....	.....	145	.....	.....	.....	.....	.....	.....
Total.....	13,260	3,815	3,660	29,737	9,700	641	1,228	6,666	1,590	4,894	271	1,790	807	504

The work of repairing the Aqueduct has been continued during the past year and considerable progress made.

The principal work on the line has been the re-arching of glue factory bank on the Fifth Division, which was in bad condition, and a building of a large retaining-wall at upper end of this division.

The large amount of heavy work done on the Aqueduct during the past four years had left the surface of the ground, in many places, badly broken up, uneven and with piles of stone, earth and rubbish; these places have all been cleaned up and the Aqueduct is in better condition now than for many years.

On Sixth Division, Dickerson's bank has been re-arched, and heavy retaining-walls built in Sanford's and Pratt's lots.

On Seventh Division the wall around reservoir (High Bridge), has been completed and a large amount of regulating and grading has been done about the same.

The work by Divisions has been as follows:

First Division—The filling of the holes below apron of dam has been about completed. The work of cutting brush and trees around the shores of the lake, and the islands therein has been continued and will progress well toward completion by next spring. The gate-house at the dam has been repaired as it was badly out of order; a new roof with zinc cornice and gutters replaced the old woodenwork which was entirely decayed.

Second Division—A long retaining-wall has been built below Quaker Bridge, and a footing-wall at same place. During the first part of the year the leak over the arch at Sing Sing was very troublesome and still requires regular attention.

Third Division—The long retaining-wall on arch bank has been completed and another built on Howe's bank. All of the stone for both these walls has been quarried by our own force of men. The Aspinwall leak by frequent and steady attention has been kept well under control.

Fourth Division—Several banks have been graded and a retaining-wall at Wilde's bank repaired; beyond this and the regular maintenance nothing else has been attempted, as the Aqueduct on this division is now in very good condition. The Dobb's Ferry leak still remains tight.

Fifth Division—Walls have been built at the gate-house and Keeper's house; the bank at the glue factory has been re-arched and graded, and a large retaining-wall built at the upper end of the division. A number of banks have been repaired and graded and gutters paved.

Sixth Division—Walls have been built in Sanford's and Pratt's lots; Dickerson's bank has been re-arched, and the stone for all the work has been quarried from Van Cortlandt's quarry by our own force. The line has been cleaned up and a large amount of stone, bowlders, etc., buried, and the banks seeded down, the leaks also on this division need more or less continual attention.

Seventh Division—The wall around reservoir has been completed, and stone steps built on the east side, a large amount of material has been excavated from south side of reservoir to make even grade, and filled in on the roadway and on western slope. Gravel has been spread on a portion of the roadway around reservoir, and the sidewalk on Tenth avenue has been graded and curbed. All the stone used for foundation walls was quarried by our own force; the outside ironwork railings have been repainted, this in addition to the regular maintenance and care of the works at High Bridge.

Eighth Division—Cleaning and repairs of Central Park and Forty-second street reservoirs, gate-house, chambers and outside mains; cleaning, repairs and maintenance of High Service Works, Ninth and Tenth avenues, gate-house and grounds; cutting grass; gathering leaves from around reservoirs; repairs of masonrywork; painting and carpentering; a large amount of material has also been excavated from old reservoir, Central Park and hauled away.

An uninterrupted flow of water has been maintained through the aqueduct during the year, averaging 95,000,000 gallons per day.

The work of repairing the weak places in the masonry of the aqueduct has so far advanced that it is necessary to empty the aqueduct to complete same; this cannot be done until the completion of the New Aqueduct.

The old reservoir in Central Park was only partially completed; there is about 100,000 cubic yards of excavation necessary; also a parapet wall and railing around same, and I recommend that this work be done as fast as the appropriation will allow.

On the completion of the New Aqueduct, High Bridge, and One Hundred and Thirty-fifth street gate-house will be the main points for controlling the waters of the two aqueducts and distributing same, and should be directly in charge of an Engineer, instead of a Keeper.

I therefore recommend that an office building be erected at the eastern end of High Bridge to accommodate the Engineer Corps in charge of the aqueduct.

The contractor for an iron railing around the reservoir at High Bridge, has commenced to erect same.

The wooden bridge over the middle branch of the Croton river at Southeast Reservoir has become unsafe, and a contract for an iron bridge has been made, the material for same is on the ground and is now being erected.

The pumping engines at High Bridge and Ninety-eighth street stations have been steadily run during the year.

HIGH BRIDGE, 1888.

Performance of High Service Pumping Engines at High Bridge.

NUMBER OF DAYS PUMPED.	NUMBER OF STROKES.	HEIGHT PUMPED, FEET.	NUMBER OF GALLONS PUMPED.	POUNDS OF COAL CONSUMED.	GALLONS OF OIL EXPENDED.	POUNDS OF WASTE EXPENDED.
366	27,957,774	100	2,200,000,000	3,985,200	781	367
Average per month.	2,329,814	100	183,333,333	332,100	.....	.....

Average duty 46,083,900 pounds raised one foot with 100 pounds of coal.
Average amount pumped daily, 6,027,397 gallons.
Average cost of pumping 1,000,000 gallons 100 feet high, \$7.02.

NINETY-EIGHTH STREET, 1888.

Performance of High Service Pumping Engine at Ninety-eighth Street Engine House.

NUMBER OF DAYS PUMPED.	NUMBER OF STROKES.	HEIGHT PUMPED, FEET.	NUMBER OF GALLONS PUMPED.	POUNDS OF COAL CONSUMED.	GALLONS OF OIL EXPENDED.	POUNDS OF WASTE EXPENDED.
366	29,529,876	55	3,219,770,612	3,271,408	452	366
Average per month.	2,460,823	55	268,314,218	272,617	....	....

Average duty 45,139,600 pounds raised one foot with 100 pounds of coal.
Average amount pumped daily, 8,821,289 gallons.
Average cost of pumping 1,000,000 gallons 55 feet high, \$4.70.

LAYING CROTON PIPES.

Contracts for laying water-mains in the following streets and avenues have been completed :
Tenth avenue, between Seventy-fifth and Seventy-ninth streets.
Fourth avenue, east side, between Ninety-seventh and One Hundred and Third streets.
Seventy-second street, north side, between Eleventh avenue and Riverside Drive.
Riverside Drive, between Seventy-second and Seventy-ninth streets.
Tenth avenue, between One Hundred and Fourth and One Hundred and Seventh streets.
West End avenue, between Seventy-ninth and Eighty-first streets.
West End avenue, between Eighty-third and One Hundred and First streets.
West End avenue, between One Hundred and Second and One Hundred and Fifth streets.
Westchester avenue, between St. Ann's and Robbins avenues.
One Hundred and Seventy-sixth street, between West Vanderbilt and Worth avenues.
One Hundred and Sixteenth street, between Seventh and Eighth avenues.
Seventy-second street, south side, between Eleventh avenue and Hudson River Railroad.
Seventy-second street, south side, between First avenue and Avenue A.
Sixty-seventh street, between Second avenue and Avenue A.
Fifty-third street, between Tenth and Eleventh avenues.
Fifth avenue, both sides, between One Hundred and Tenth and One Hundred and Twentieth streets.

Twenty-second street, between Third and Eleventh avenues.
One Hundred and Seventy-seventh street, between Boston road and Boston avenue.
Morris avenue, between One Hundred and Seventy-seventh street and 1,000 feet north.
Anthony avenue, between Ash and Bush streets.
Ash street, between Morris and Tremont avenues.
Buckhout street, between Morris and Tremont avenues.
Berry street, between Anthony and Morris avenues.
Bush street, between Anthony and Morris avenues.
One Hundredth street, between Fourth and Fifth avenues.
Avenue A, between Sixty-second and Sixty-ninth streets.
Madison avenue, between Ninety-fourth and One Hundred and Ninth streets.
Eighty-eighth street, between Boulevard and Eleventh avenue.
Fourth avenue, west side, between One Hundredth and One Hundred and First streets.
Arthur avenue, between One Hundred and Seventy-seventh street and Kingsbridge road.
One Hundred and Fortieth street, between Eighth and Edgcombe avenues.
One Hundred and Thirty-fifth street, between Brown place and Cypress avenue.
One Hundred and Thirty-fourth street, between Brown place and Southern Boulevard.
One Hundred and Thirtieth street, between Eighth and Manhattan avenues.
One Hundred and Twelfth street, between Eighth and Manhattan avenues.
Macomb street, between Broadway and Albany avenue.
One Hundred and Second street, between First avenue and East river.
One Hundred and Twenty-second street, between St. Nicholas and Ninth avenues.
Manhattan avenue, between One Hundred and Fourteenth and One Hundred and Fifteenth streets.

One Hundred and Eighteenth street, between Eighth and Ninth avenues.
One Hundred and Thirty-fourth street, between Sixth and Seventh avenues.
One Hundred and Forty-third street, between Seventh and Eighth avenues.
Eighty-eighth street, between West End avenue and Riverside Drive.
Eighty-eighth street, between Eighth and Ninth avenues.
Fifth avenue, between One Hundred and Thirty-fifth and One Hundred and Thirty-eighth streets.

Tenth avenue, between One Hundred and Tenth and One Hundred and Twelfth streets.
Boulevard, between One Hundred and Eleventh and One Hundred and Twelfth streets.
One Hundred and Fourteenth street, between Seventh and Eighth avenues.
One Hundred and Seventeenth street, between Eighth and Morningside avenues, East.
Ninety-eighth street, between Tenth avenue and Boulevard.
Seventieth street, between Eighth and Ninth avenues.
One Hundred and Fifteenth street, between Eighth and Manhattan avenues.
One Hundred and Fifty-seventh street, between Tenth and Eleventh avenues.
One Hundred and Fifty-eighth street, between Morris and Railroad avenues, East.

Also contracts for building house for storage of coal and for furnishing water-pipes, have been completed.
One contract for furnishing pipe, and one contract for furnishing and laying pipe has been entered into.

Amount of Pipe Laid.

DIAMETER.	DURING QUARTER ENDING DECEMBER 31, 1888.	DURING YEAR 1888.
36-inch.....	.....	9 lineal feet.
20-inch.....	.....	937 "
12-inch.....	5,486 lineal feet.	25,936 "
6-inch.....	33,412 "	74,487 "
Total.....	38,898 lineal feet.	101,369 lineal feet.

Stop-cocks Set.

SIZE.	DURING QUARTER ENDING DECEMBER 31, 1888.	DURING YEAR 1888.
12-inch.....	8	31
6-inch.....	56	154
Total.....	64	185

Hydrants Placed.

PATTERN.	DURING QUARTER ENDING DECEMBER 31, 1888.	DURING YEAR 1888.
"B".....	12	30
"A".....	66	165
No. 1.....	8	12
Total.....	86	207

Summary 1888.

Diameter of Pipe.	PIPES.			STOP-COCKS.			HYDRANTS.			
	Pipe Laid to Dec. 31, 1887.	Pipe Laid from Dec. 31, 1887, to Dec. 31, 1888.	Total Pipe Laid Dec. 31, 1888.	Stop-cocks Set to Dec. 31, 1887.	Stop-cocks Set in 1888.	Total Stop-cocks Set to Dec. 31, 1888.	Pattern.	Hydrants Placed to Dec. 31, 1887.	Hydrants Placed in 1888.	Total Hydrants Placed to Dec. 31, 1888.
48-inch.....	65,654	.....	65,654	16	....	16	Nos. 1, 2 and 3	3,479	12	3,491
36-inch.....	94,573	9	94,582	40	....	40	Victor.....	139	....	139
30-inch.....	41,773	.....	41,773	29	....	29	"A" hydrant.	2,646	165	2,811
24-inch.....	11,542	.....	11,542	13	....	13	"B" hydrant.	1,720	30	1,750
20-inch.....	193,047	937	193,984	180	....	180	Totals.....	7,984	207	8,191
16-inch.....	17,130	.....	17,130	22	....	22				
12-inch.....	804,592	25,936	830,528	1,503	31	1,534				
10-inch.....	6,629	.....	6,629	15	....	15				
6-inch.....	2,005,202	74,487	*2,075,349	4,465	154	4,619				
4-inch.....	32,867	.....	32,867	119	....	119				
Total feet.	3,273,009	101,369	3,370,038	6,402	185	6,587				
Miles.....	619.88	19.20	638.26	.....	....	.....	

*NOTE—Less 4,340 feet of 6-inch pipe discontinued.

STREETS AND AVENUES IN WHICH WATER-MAINS HAVE BEEN LAID IN 1888.

Twenty-inch Pipe.

One Hundredth street, between Fourth and Fifth avenues.

Twelve-inch Pipe.

Fourth avenue, east side, between Ninety-seventh and One Hundred and Third streets.
Avenue A, between Sixty-second and Sixty-ninth streets.
Madison avenue, between One Hundred and Thirty-fifth and One Hundred and Thirty-seventh streets.
One Hundred and Seventy-seventh street, between Boston avenue and Boston road.
Fourth avenue, west side, between One Hundredth and One Hundred and First streets.
Riverside avenue, between Seventy-sixth and Seventy-ninth streets.
Houston street, between Mangin street and East river.
Riverside avenue, between Seventy-second and Seventy-third streets.
Seventy-second street, north side, between Eleventh and Riverside avenues.
Tenth avenue, between Seventy-fifth and Seventy-ninth streets.
Twenty-second street, between Third and Eleventh avenues.
Madison avenue, between Ninety-fourth and One Hundred and Ninth streets.
Fifth avenue, west side, between One Hundred and Tenth and One Hundred and Twentieth streets.

Six-inch Pipe.

Water street, between Riverdale avenue and 926 feet north.
One Hundred and Third street, between Eleventh and Riverside avenues.
One Hundred and Second street, between First avenue and East river.
Eighty-third street, between Avenue A and Avenue B.
Seventy-second street, south side, between Avenue A and First avenue.
Thirty-seventh street, between Eleventh avenue and North river.
Sixty-seventh street, between Avenue A and Second avenue.
One Hundred and Sixteenth street, between Seventh and Eighth avenues.
Thirty-eighth street, between First avenue and East river.
Tenth avenue, both sides, between One Hundred and Fourth and One Hundred and Seventh streets.
Eleventh avenue, between Eighty-third and One Hundred and First streets.
Eleventh avenue, between Seventy-ninth and Eighty-first streets.
Eleventh avenue, between One Hundred and Second and One Hundred and Fifth streets.
One Hundred and Twelfth street, between Eighth and Manhattan avenues.
One Hundred and Thirtieth street, between Eighth and Manhattan avenues.
Ash street, between Morris avenue and 322 feet west.
Buckhout street, between Morris avenue and 313 feet west.
Ninety-ninth street, between First and Second avenues.
Westchester avenue, between St. Ann's and Robbins avenues.
One Hundred and Seventy-sixth street, between Vanderbilt and Worth avenues.
One Hundred and Thirty-fifth street, between Madison and Fifth avenues.
Morris avenue, between One Hundred and Seventy-seventh street and 1,021 feet north.
One Hundred and Thirty-fourth street, between Brown place and Southern Boulevard.
One Hundred and Thirty-fifth street, between Brown place and Cypress avenue.
Arthur avenue, between One Hundred and Seventy-seventh street and Kingsbridge road.
One Hundred and Twentieth street, between Seventh and St. Nicholas avenues.
One Hundred and Fortieth street, between Eighth and Edgcombe avenues.
Berry street, between Morris and Anthony avenues.
One Hundred and Sixty-fifth street, between Tenth and Edgcombe avenues.
Anthony avenue, between Ash and Bush streets.
Bush street, between Anthony avenue and 295 feet west.
One Hundred and Forty-eighth street, between Seventh and Eighth avenues.
Valentine avenue, between One Hundred and Eighty-fourth street and 537 feet north.
Eighty-ninth street, between Ninth and Tenth avenues.
Heath avenue and Dashwood place, between Sedgwick and Commerce avenues.
One Hundred and Seventy-third and Weeks streets, between Morris avenue and Jane street.
Seventy-fifth street, between Ninth and Tenth avenue.
One Hundred and Thirtieth street, between Fifth and Sixth avenues.
Rider avenue, between One Hundred and Fortieth and One Hundred and Forty-second streets.
One Hundred and Forty-third street, between Brook and St. Ann's avenues.
One Hundred and Fifth street, between Ninth and Manhattan avenues.
One Hundred and Twenty-first street, between Mount Morris and Lenox avenues.
One Hundred and Nineteenth street, between Eighth and Ninth avenues.
One Hundred and Twenty-second street, between Madison and Fourth avenues.
Macomb street, between Broadway and Albany avenues.
One Hundred and Twenty-second street, between St. Nicholas and Ninth avenues.
Manhattan avenue, between One Hundred and Fourteenth and One Hundred and Fifteenth streets.

One Hundred and Eighteenth street, between Eighth and Ninth avenues.
One Hundred and Thirty-fourth street, between Sixth and Seventh avenues.
One Hundred and Forty-third street, between Seventh and Eighth avenues.
Eighty-eighth street, between West End and Riverside avenues.
Eighty-eighth street, between Eighth and Ninth avenues.
One Hundred and Sixty-second street, between Tenth avenue and Jumel Terrace.
Arthur avenue, between Columbia and Pelham avenues.
Across East river, between Seventy-ninth street and Avenue B and Blackwell's Island.
Seventy-second street (south side), between Eleventh avenue and Hudson River Railroad.
Kingsbridge road and Adams avenue, between Arthur and Columbia avenues.
Fifth avenue, between One Hundred and Thirty-fifth and One Hundred and Thirty-eighth streets.
Tenth avenue, between One Hundred and Tenth and One Hundred and Twelfth streets.
Fifty-third street, between Tenth and Eleventh avenues.
Boulevard, between One Hundred and Eleventh and One Hundred and Twelfth streets.
Fifth avenue, east side, between One Hundred and Tenth and One Hundred and Twentieth streets.
One Hundred and Fourteenth street, between Seventh and Eighth avenues.
One Hundred and Seventeenth street, between Eighth and Morningside avenues, East.
Ninety-eighth street, between Tenth avenue and Boulevard.
Eighty-eighth street, between Boulevard and Eleventh avenue.
Centre street, between Chestnut and Main streets.

Main street, between Westchester avenue and Kingsbridge road.
 Seventieth street, between Eighth and Ninth avenues.
 One Hundred and Fifteenth street, between Eighth and Manhattan avenues.
 One Hundred and Fifty-seventh street, between Tenth and Eleventh avenues.
 Across East river, between One Hundred and Fortieth street and Locust avenue and North Brother Island.
 One Hundred and Fifty-eighth street, between Morris and Railroad avenues, East.

"B." Hydrants set in 1888.

Northeast corner Old Slip and Pearl street.	1
Southwest corner Forty-eighth street and Eleventh avenue.	1
Northeast corner Forty-eighth street and Twelfth avenue.	1
Southwest corner Twenty-second street and Third avenue.	1
Northeast corner Twenty-second street and Irving place.	1
North side Twenty-second street, between Lexington and Fourth avenues.	2
Southwest corner Twenty-second street and Fourth avenue.	1
North side Twenty-second street, between Fourth avenue and Broadway.	1
Northeast corner Twenty-second street and Broadway.	1
North side Twenty-second street, between Fifth and Sixth avenues.	3
Northwest corner Twenty-second street and Sixth avenue.	1
South side Twenty-second street, between Sixth and Seventh avenues.	1
Northeast corner Twenty-second street and Seventh avenue.	1
South side Twenty-second street, between Ninth and Tenth avenues.	3
South side Twenty-second street, between Tenth and Eleventh avenues.	2
Southwest corner Thirty-third street and First avenue.	1
Southwest corner Thirty-fourth street and First avenue.	1
Northeast corner Thirty-fourth street and First avenue.	1
Northeast corner Thirty-fifth street and First avenue.	1
Northeast corner Thirty-sixth street and First avenue.	1
Southwest corner Thirty-seventh street and First avenue.	1
Northeast corner Thirty-ninth street and First avenue.	1
Southeast corner Fortieth street and First avenue.	1
Southwest corner Fifty-fifth street and First avenue.	1
Total.	30

"A" Hydrants set in 1888.

Northwest corner Eleventh avenue and One Hundred and Third street.	1
North side One Hundred and Second street, between Avenue A and First avenue.	1
North side Eighty-third street, between Avenues A and B.	1
Northeast corner Thirty-seventh street and Twelfth avenue.	1
North side Thirty-eighth street, between First avenue and East river.	1
Northwest corner One Hundred and Twelfth street and Eighth avenue.	1
Northeast corner One Hundred and Twelfth street and Manhattan avenue.	1
North side One Hundred and Thirteenth street, between Eighth and Manhattan avenues.	1
Northwest corner One Hundred and Thirty-fourth street and Southern Boulevard.	1
North side One Hundred and Thirty-fourth street, between Southern Boulevard and St. Ann's avenue.	1
Northwest corner One Hundred and Thirty-fourth street and St. Ann's avenue.	1
Northeast corner One Hundred and Thirty-fourth street and Brook avenue.	1
Northeast corner One Hundred and Thirty-fourth street and Brown place.	1
Northwest corner One Hundred and Thirty-fifth street and Cypress avenue.	1
North side One Hundred and Thirty-fifth street, between Cypress and St. Ann's avenues.	1
Northwest corner One Hundred and Thirty-fifth street and St. Ann's avenue.	1
Northeast corner One Hundred and Thirty-fifth street and Brook avenue.	1
Southeast corner One Hundred and Thirty-fifth street and Brown place.	1
Northeast corner One Hundred and Fortieth street and Edgecombe avenue.	1
Southeast corner Arthur avenue and Kingsbridge road.	1
Southeast corner Arthur avenue and Pine street.	1
Southeast corner Arthur avenue and Samuel street.	1
Southeast corner Arthur avenue and Cedar street.	1
West side Madison avenue, between One Hundred and Fifth and One Hundred and Sixth streets.	1
Northeast corner Madison avenue and One Hundred and Second street.	1
Northeast corner Madison avenue and One Hundred and First street.	1
Northeast corner Madison avenue and One Hundredth street.	1
Northwest corner Fifth avenue and One Hundred and Thirty-sixth street.	1
Northwest corner Fifth avenue and One Hundred and Thirty-seventh street.	1
Northwest corner One Hundred and Twenty-second street and St. Nicholas avenue.	1
Northeast corner One Hundred and Twenty-second street and Ninth avenue.	1
Northeast corner Manhattan avenue and One Hundred and Fourteenth street.	1
Northwest corner One Hundred and Eighteenth street and Eighth avenue.	1
Northwest corner One Hundred and Eighteenth street and Manhattan avenue.	1
Northwest corner One Hundred and Eighteenth street and Ninth avenue.	1
Northeast corner Seventy-ninth street and Avenue B.	1
On Blackwell's Island, opposite Seventy-ninth street.	1
North side One Hundred and Thirty-fourth street, between Sixth and Seventh avenues.	1
Northeast corner One Hundred and Forty-third street and Eighth avenue.	1
North side One Hundred and Forty-third street, between Seventh and Eighth avenues.	1
Northwest corner Eighty-eighth street and Eleventh avenue.	1
North side Eighty-eighth street, between Eighth and Ninth avenues.	1
South side Seventy-fifth street, between Ninth and Tenth avenues.	2
Northeast corner Rider avenue and One Hundred and Fortieth street.	1
East side Rider avenue, between One Hundred and Forty-first and One Hundred and Forty-second streets.	1
Northeast corner One Hundred and Thirteenth street and Sixth avenue.	1
North side One Hundred and Thirteenth street, between Fifth and Sixth avenues.	1
Northeast corner One Hundred and Twenty-first street and Sixth avenue.	1
Northwest corner One Hundred and Twenty-first street and Mt. Morris avenue.	1
North side One Hundred and Forty-third street, between Brook and St. Ann's avenues.	1
North side One Hundred and Fifth street, between Manhattan and Ninth avenues.	1
North side One Hundred and Seventy-third street, between Weeks street and Morris avenue.	1
West side Weeks street, between One Hundred and Seventy-third and Jane streets.	1
Northwest corner Heath and Sedgwick avenues.	2
Northwest corner Fifth avenue and One Hundred and Thirteenth street.	1
Northeast corner Fifth avenue and One Hundred and Twelfth street.	1
Northeast corner Fifth avenue and One Hundred and Fourteenth street.	1
Southeast corner Fifth avenue and One Hundred and Sixteenth street.	1
Northwest corner Morris avenue and Ash street.	1
Northeast corner Buckhout street and Tremont avenue.	1
North side Berry street, between Morris and Anthony avenues.	2
North side Bush street, between Morris and Anthony avenues.	1
Northwest corner Anthony avenue and Bush street.	1
Northwest corner Morris avenue and Bush street.	1
Northwest corner Morris and Tremont avenues.	1
Southeast corner One Hundred and Seventy-seventh street and Boston Road.	1
Southwest corner One Hundred and Seventy-seventh street and Boston Road.	1
Southwest corner Twenty-second street and Tenth avenue.	1
South side Twenty-second street, between Eighth and Ninth avenues.	2
North side Twenty-second street, between Eighth and Ninth avenues.	2
North side Twenty-second street, between Seventh and Eighth avenues.	2
Northwest corner Twenty-second street and Seventh avenue.	1
Northwest corner One Hundred and Fifteenth street and Eighth avenue.	1
Northwest corner One Hundred and Fifteenth street and Manhattan avenue.	1
Northeast corner Seventieth street and Ninth avenue.	1
North side One Hundred and Fourteenth street, between Seventh and Eighth avenues.	2
Northwest corner Ninety-eighth street and Tenth avenue.	1
Northwest corner One Hundred and Seventeenth street and Eighth avenue.	1
Northeast corner One Hundred and Seventeenth street and Manhattan avenue.	1
Northeast corner One Hundred and Seventeenth street and Morningside avenue (East).	1
Northwest corner Tenth avenue and One Hundred and Eleventh street.	1
Northwest corner Tenth avenue and One Hundred and Twelfth street.	1
Northeast corner Madison avenue and Ninety-sixth street.	1
Northwest corner Madison avenue and Ninety-sixth street.	1
Northeast corner Madison avenue and Ninety-fourth street.	1
Southwest corner Avenue A and Sixty-ninth street.	1
Northeast corner Avenue A and Sixty-sixth street.	1
Northeast corner Avenue A and Sixty-fourth street.	1
Southeast corner One Hundredth street and Fifth avenue.	1
North side Fifty-third street, between Tenth and Eleventh avenues.	2

North side Sixty-seventh street, between First and Second avenues.	2
Northeast corner Sixty-seventh street and First avenue.	1
Northwest corner Sixty-seventh street and Avenue A.	1
South side Seventy-second street, between First avenue and Avenue A.	1
Southwest corner Seventy-second street and Riverside avenue.	1
Southwest corner Seventy-second street and Eleventh avenue.	1
North side One Hundred and Sixteenth street, between St. Nicholas and Eighth avenues.	1
Northeast corner One Hundred and Seventy-sixth street and Worth avenue.	1
Northwest corner One Hundred and Seventy-sixth street and Vanderbilt avenue.	1
Southeast corner Westchester and Trinity avenues.	1
Northwest corner Westchester and Eagle avenues.	1
Northeast corner Eleventh avenue and One Hundred and Fourth street.	1
West side Eleventh avenue, between One Hundredth and One Hundred and First streets.	1
Northwest corner Eleventh avenue and Ninety-first street.	1
Northwest corner Eleventh avenue and Ninetieth street.	1
Northwest corner Eleventh avenue and Eighty-fifth street.	1
Northwest corner Eleventh avenue and Seventy-ninth street.	1
East side Tenth avenue, between One Hundred and Fifth and One Hundred and Sixth streets.	1
Northeast corner Fourth avenue and Ninety-eighth street.	1
Northwest corner Tenth avenue and Seventy-seventh street.	1
Northeast corner One Hundred and Forty-eighth street and Eighth avenue.	1
Northwest corner One Hundred and Forty-eighth street and Seventh avenue.	1
Northwest corner Valentine avenue and One Hundred and Eighty-fourth street.	1
North side One Hundred and Twenty-second street, between Fourth and Madison avenues.	1
Northwest corner Eighty-ninth street and Eighth avenue.	1
Northwest corner One Hundred and Sixty-fifth street and Edgecombe avenue.	1
North side One Hundred and Twentieth street, between Seventh and St. Nicholas avenues.	1
North side One Hundred and Thirty-fifth street, between Madison and Fifth avenues.	1
Northwest corner Madison avenue and One Hundred and Thirty-sixth street.	1
Northeast corner Madison avenue and One Hundred and Thirty-seventh street.	1
Northeast corner Ninety-eighth street and Second avenue.	1
Northwest corner One Hundred and Nineteenth street and Eighth avenue.	1
Northeast corner One Hundred and Nineteenth street and Manhattan avenue.	1
Northeast corner One Hundred and Nineteenth street and Ninth avenue.	1
Northeast corner One Hundred and Sixty-second street and Tenth avenue.	1
Northwest corner One Hundred and Sixty-second street and Jumel Terrace.	1
Northwest corner Adams avenue and Kingsbridge road.	1
West side Arthur avenue, between Kingsbridge road and Jacob street.	1
Northwest corner Arthur avenue and Jacob street.	1
West side Arthur avenue, between Jacob street and Pelham avenue.	2
Northeast corner Locust avenue and One Hundred and Fortieth street.	1
On North Brother Island, opposite One Hundred and Forty-first street.	1
North side Southern Boulevard, between St. Ann's avenue and One Hundred and Thirty-fourth street.	1
West side Southern Boulevard, between One Hundred and Thirty-sixth and One Hundred and Thirty-seventh streets.	1
Northeast corner Southern Boulevard and One Hundred and Thirty-sixth street.	1
Southwest corner Centre and Main streets.	1
Southeast corner Centre street and Oostdorp avenue.	1
Southeast corner Centre and Chestnut streets.	1
West side Vyse avenue, between Boston road and One Hundred and Seventy-seventh street.	1
Northwest corner Vyse avenue and Boston road.	1
Northeast corner Westchester and Prospect avenues.	1
Northwest corner Westchester avenue and Rogers place.	1
Northeast corner Westchester and Intervale avenues.	1
Northwest corner Westchester avenue and Southern Boulevard.	1
West side Main street, between One Hundred and Seventy-seventh and Mechanic streets.	1
West side Main street, between Centre and Samuel streets.	1
West side Main street, between Samuel and Ponus streets.	1
Southwest corner Main street and Kingsbridge road.	1
Northeast corner Main street and Rodman place.	1
Southeast corner Main and Woodruff streets.	1
East side Main street, between Woodruff street and Edgewater road.	6
Total.	165

"No. 1" Hydrants set in 1888.

East side Water street, North of Riverdale avenue.	2
Northeast corner Broadway and Macomb street.	1
Northeast corner Maiden lane and Water street.	1
Northeast corner Bank street and Thirtieth avenue.	1
Northwest corner Liberty and Greenwich streets.	1
Northwest corner Murray and Greenwich streets.	1
Northwest corner Dashwood place and Commerce avenue.	1
Southwest corner Van Cortlandt and Riverdale avenues.	1
South side One Hundred and Second street, near East river.	1
Northwest corner Warren and Greenwich streets.	1
Northeast corner Nineteenth street and Thirteenth avenue.	1
Total.	12

REPLACING WATER-MAINS, WEST STREET, ETC.

The gang of men on this work have been steadily employed, but, on account of the cold weather, will have to be suspended for the winter.

During the year new mains have been laid, and houses connected with same, in—

Washington street, between Battery place and Chambers street.
 Front street, between Coenties Slip and Fulton street.
 Jones lane, between South and Front streets.
 Gouverneur lane, between Front and Water streets.
 Old Slip, between South and Pearl streets.
 Pine street, between South and Water streets.
 Depeyster street, between South and Water streets.
 Maiden lane, between Pearl and South streets.
 Bloomfield street, between West street and Thirteenth avenue.
 Thirteenth avenue, between Horatio and Little West Twelfth street.
 Gansevoort street, between Thirteenth avenue and West street.
 Water street, between Fulton and Wall streets.
 Fletcher street, between Water and South streets.
 Burling Slip, between Front and Water streets.
 Greenwich street, between Battery place and Cortlandt street.
 Liberty street, between West and Greenwich streets.
 Edgar street, between Trinity place and Greenwich street.
 Cedar street, between West and Church streets.
 Cortlandt street, between West and Greenwich streets.
 Dey street, between West and Washington streets.
 Vesey street, between West and Washington streets.
 Fulton street, between West and Washington streets.
 Park place, between West and Greenwich streets.
 Murray street, between West and Greenwich streets.
 Warren street, between West and Greenwich streets.
 Thirteenth avenue, between West Eleventh and Bank streets.
 Bank street, between West street and Thirteenth avenue.
 West Eleventh street, between West street and Thirteenth avenue.

FOR NEW WATER-MAIN, ETC., NORTH BROTHER ISLAND.

A 6-inch bore has been drilled on North Brother Island, 608 feet deep, and tested by a 4-inch pipe and pump, and after the surface water was shut off about 12 gallons per minute of salt water impregnated with iron, etc., obtained, showing that in the gneiss rock of this vicinity no potable water is to be obtained at any reasonable depth.

A 6-inch cast-iron pipe, with flexible joints, has been laid from One Hundred and Fortieth street and Locust avenue to North Brother Island, and 50,000 gallons per day is passing through same for the supply of the institutions on this island, under a pressure of 40 pounds to the square inch.

LAYING PIPE, ETC., BLACKWELL'S ISLAND.

A 6-inch cast-iron pipe, with flexible joints, has been laid from Seventy-ninth street and Avenue B across the East river to Blackwell's Island, and connected with the mains on this island, and is now furnishing an additional supply of 150,000 gallons per day to the institutions on this island, and an increased pressure maintained. A contract for an 8-inch bore is now being carried out to test for water on this island.

Meters placed during the quarter ending December 31, 1888	379
Meters placed during the year ending December 31, 1888	1,659
Numbers of meters now in use	18,211

Water-meters in use December 31, 1888.

WHERE PLACED.	5/8"	3/4"	1"	1 1/2"	2"	3"	4"	6"	TOTAL.
Hotels	13	65	139	70	52	21	7	....	367
Breweries, bottlers, etc.....	18	94	120	55	75	19	2	....	383
Charitable Institutions .....	....	5	20	35	41	7	2	....	110
Offices	32	762	776	306	84	70	16	....	2,006
Manufacturing establishments....	87	222	383	297	152	17	5	....	1,163
Gas-works.....	1	3	11	3	3	14	11	....	46
Railroads.....	6	94	55	7	10	19	23	2	216
Stables.....	343	998	466	76	28	8	1	....	1,920
Apartment-houses	10	16	60	59	56	7	4	....	212
Docks.....	18	12	19	9	37	53	33	....	181
Riverdale	39	34	12	1	....	1	2	....	89
Miscellaneous	3,876	3,716	2,747	721	368	78	8	4	11,518
Total	4,443	6,021	4,808	1,639	906	274	114	6	18,211

STYLE OF METER.	5/8"	3/4"	1"	1 1/2"	2"	3"	4"	6"	TOTAL.
Gem.....	....	....	....	....	3	9	1	....	13
Crown	3,237	2,961	1,933	259	126	33	24	5	8,578
Worthington	569	2,596	2,460	1,380	777	232	89	1	8,104
Thomson.....	637	464	415	....	....	....	....	....	1,516
Total	4,443	6,021	4,808	1,639	906	274	114	6	18,211

Average Number of Gallons used Per Day through Meters.

NUMBER OF METERS.	WHERE USED.	GALLONS.	NUMBER OF METERS.	WHERE USED.	GALLONS.
367	Hotels.....	1,721,000	1,905	Stables	1,205,600
383	Breweries, bottlers, etc.....	1,716,500	205	Apartment-houses.....	386,000
110	Charitable Institutions	418,000	181	Docks	1,811,100
2,006	Offices	1,880,000	89	Riverdale.....	76,100
1,150	Manufacturing establishments ...	2,516,400	11,092	Miscellaneous.....	11,215,000
46	Gas-works	1,161,700			
216	Railroads.....	1,630,200	17,750	Total.....	25,737,600

WASTE AND USE OF WATER.

Owing to the large rainfall during the year the supply of water has averaged 113,000,000 gallons per day, and the pressure throughout the city has only decreased on an average of about two feet. This large supply cannot be depended upon; and as it will be at least one year before the New Aqueduct is completed, strict measures should be taken to stop waste of water by inspection of houses and plumbing, by examination of sewers at night and the placing of meters where waste is found and where the plumbing in the house is of such a character as to produce waste.

In order to induce parties to use meters, I would recommend that the price of water by meter be reduced to 7 1/2 cents per 100 cubic feet, same as it was in 1880 and 1881.

With the New Aqueduct completed the quantity of water available will depend upon the amount of water stored, and as this will not be increased for a year or two, the regulating the use and stopping of waste will be absolutely necessary to insure a fair supply of water.

To provide for the increased pressures throughout the city when the New Aqueduct and storage reservoirs are completed, the renewing of the mains, taps and service-pipes along the water-front should be continued, the force on repairs maintained, and pressures increased gradually, from experience of increased pressures during the night and for fire purposes. I do not apprehend any special trouble from same.

Respectfully submitted,

G. W. BIRDSALL, Chief Engineer, Croton Aqueduct.

PERMITS TO OPEN STREETS ISSUED IN 1888.

Eighth Avenue Railroad Company.

MacComb's Dam road, between One Hundred and Fifty-first and One Hundred and Fifty-fourth streets.

The Suburban Rapid Transit Company.

One Hundred and Twenty-ninth street, between Second and Third avenues.

Bernheimer & Schmidt.

One Hundred and Eighth street, between Ninth avenue and Riverside Drive.

Forty-second Street, Manhattanville and St. Nicholas Avenue Railroad Company.

Twelfth avenue, between Thirty-fourth and Forty-second streets.

Tenth avenue, between Forty-second and Manhattan streets.

David Stevenson.

Fortieth street, between Tenth avenue and Hudson river.

George Ehret.

Ninety-third street, between Second avenue and East river.

Second avenue, between Ninety-second and Ninety-third streets.

Ninety-second street, between Second and Third avenues.

Clark & O'Brien.

Eighth avenue, between Ninety-sixth and One Hundred and Sixth streets

One Hundred and Sixth street, between Eighth and Manhattan avenues.

Manhattan avenue, between One Hundred and Sixth and One Hundred and Tenth streets.

Ninth and Convent avenues, between One Hundred and Twenty-fourth and One Hundred and Thirty-fifth streets.

Across Eighth avenue at One Hundred and Ninth street.

New York Steam Company.

Cedar street, from Nassau street, westerly one hundred and seventy-five feet.

Church street, between Rector and three hundred feet north.

Fifty-third street, west side Fifth avenue to two hundred feet east of Fifth avenue.

Alfred Corning Clark "Estate."

Across Ninth avenue nine to thirteen feet north of Seventy-second street.

Equitable Gas Light Company.

Fifteenth street, between Fifth and Sixth avenues.
Clinton street, between Division and East Houston streets.
Carmine street, between Bleeker and Clarkson streets.
Clarkson street, between Varick and Hudson streets.
Seventh street, between Second and Third avenues.
Twelfth street, between Second and Third avenues.
Sixteenth street, between Broadway and Sixth avenue.
Nineteenth street, between Sixth and Ninth avenues.
Forty-fourth street, between First and Lexington avenues.
Forty-ninth street, between Lexington and Sixth avenues.
Sixty-sixth street, between Third and Fourth avenues.
Sixty-seventh street, between Third and Fourth avenues.
West street, between Gansevoort and Little West Twelfth street.
Fortieth street, from First avenue to 200 feet east of First avenue.
First avenue, between Fortieth and Forty-first streets.
Forty-first street, between First avenue and 160 feet east.
Hester street, between Bowery and Clinton street.
Thirty-fifth street, between Lexington and Eleventh avenues.
Thirty-sixth street, between Lexington and Eleventh avenues.
Thirty-seventh street between Lexington and Eleventh avenues.
Thirty-eighth street, between Ninth and Eleventh avenues.
Thirty-ninth street, between Broadway and Eleventh avenue.
Forty-seventh street, between First and Third avenues.
Fifty-seventh street, between First avenue and East river.
Forty-fifth street, between Eighth and Eleventh avenues.
Nineteenth street, between Ninth and Eleventh avenues.
Eleventh avenue (both sides), between Fourteenth and Sixty-fourth streets.
West Washington place, between Macdougall street and Sixth avenue.
Waverley place, between Macdougall street and Sixth avenue.
Varick street, between Carmine and Canal streets.
King street, between Macdougall and Varick streets.
Cornelia street, between Sixth avenue and Bleeker street.
Macdougall street, between Spring street and Clinton place.
Forty-ninth street, between Eighth and Eleventh avenues.
Fifty-second street, between Ninth and Eleventh avenues.
Ridge street, between Division and Houston streets.
Thirty-second street, between Seventh and Eleventh avenues.
Thirty-third street, between Seventh and Eleventh avenues.
Forty-fifth street, between Broadway and Eighth avenue.
Forty-sixth street, between First and Third avenues.
Twenty-eighth street, between Sixth and Eleventh avenues.
Forty-first street, between Sixth and Eleventh avenues.
Forty-sixth street, between Sixth and Eleventh avenues.
Forty-third street, between Tenth and Eleventh avenues.
Fortieth street, between Broadway and Eleventh avenue.
Fifty-fifth street, between Ninth and Eleventh avenues.
Forty-eighth street, between First and Third avenues.
Avenue A (both sides), between Fifty-seventh and Seventy-fourth streets.
Fifty-ninth street, between Fourth and Tenth avenues.
Fifty-fourth street, between Broadway and Tenth avenue.
Sullivan street, between Canal and West Third streets.
Forty-first street, between Second and Third avenues.
Thirty-ninth street, between Second and Third avenues.
Thirty-seventh street, between First and Third avenues.
Thirty-sixth street, between First and Third avenues.
Thirty-fifth street, between Second and Third avenues.
Twenty-seventh street, between Second and Third avenues.
Twenty-fifth street, between Second and Third avenues.
Twenty-sixth street, between Third avenue and East river.
Twenty-seventh street, between First and Second avenues.
First avenue (both sides), between Twenty-third and Thirty-fourth streets.
Twentieth street, between Seventh and Ninth avenues.
Thirty-fourth street, between Second avenue and East river.
Forty-fourth street, between Ninth and Eleventh avenues.
Forty-third street, between Broadway and Eighth avenue.
Forty-eighth street, between Tenth and Eleventh avenues.
Fiftieth street, between Tenth and Eleventh avenues.
Fifty-first street, between Tenth and Eleventh avenues.
Fifty-third street, between Tenth and Eleventh avenues.
Fifty-sixth street, between Ninth and Tenth avenues.
Thirty-third street, between Lexington and Third avenues.
Fifty-second street, between First and Third avenues.
Ninth street, between Broadway and Sixth avenue.
Greenwich street (both sides), between Christopher and Gansevoort streets.
Christopher street, between Hudson and Greenwich streets.
Eleventh avenue, between Fifty-eighth and Fifty-ninth streets.
Fifty-eighth street, from Eleventh avenue to 300 feet east of Eleventh avenue.
Fourteenth street (both sides), between Second avenue and Avenue B.
Fifteenth street, between First and Third avenues.
Twenty-seventh street, between Lexington and Third avenues.
Twenty-eighth street, between First and Third avenues.
First avenue, between Thirty-second and Thirty-fourth streets.
Watts street, between Sullivan and Hudson streets.
Twenty-sixth street, between Lexington and Third avenues.
Seventh avenue, between Thirty-fourth and Forty-second streets.
Twenty-eighth street, between Ninth and Tenth avenues.
Thirtieth street, between Lexington and First avenues.
Fifty-eighth street, between Tenth and Eleventh avenues.
Fourth avenue, between Thirteenth and Fourteenth streets.
Fifty-second street, between Fourth and Third avenues.
Fifty-third street, between Fourth and Third avenues.
Twenty-eighth street, between Third and Lexington avenues.
Lafayette place (both sides), between Great Jones and Eighth streets.
Fourth street, between Sixth avenue and Horatio street.
Fourth avenue, between Fifty-second and Fifty-third streets.
Twenty-ninth street, between Lexington and Third avenues.
Thirty-third street, between Third avenue and East river.
Thirteenth street, between Third avenue and Avenue B.
Twelfth street, between Second avenue and Avenue B.
Sixteenth street, between Third avenue and Avenue B.
Thirtieth street, between Sixth and Tenth avenues.
Eighth street, between Second avenue and Avenue A.
Twenty-fifth street, between Lexington and Fourth avenues.
Fourth avenue (both sides), between Twenty-third and Twenty-fifth streets.

Consolidated Gas Company.

Forty-first street, between Seventh and Eighth avenues.
Seventy-third street, between Boulevard and West End avenue.
One Hundred and Second street, between First avenue and East river.
Lexington avenue, between Ninety-sixth and Ninety-seventh streets.
Eleventh avenue (both sides), between Forty-first and Sixty-fifth streets.
Avenue C, between Seventeenth and Sixteenth streets.
Sixteenth street, between Avenues B and D.
Sixty-third street, between Avenue A and Lexington avenue.
Lexington avenue, between Sixty-third and Sixty-fifth streets.
Sixty-fifth street, between Lexington and Fourth avenues.
Sixty-fifth street, between Fourth and Fifth avenues.
Forty-fifth street, between Eleventh and Twelfth avenues.
Sixty-sixth street, between Eighth and Eleventh avenues.
Sixty-fifth street, between Tenth and Eleventh avenues.
Tenth avenue, between Eighteenth and Thirty-fourth streets.
Fourth avenue, between Sixty-fifth and Sixty-eighth streets.
Crossing Fourth avenue, south side, at Sixty-eighth street, from west to east.
Fourth avenue, between Sixty-eighth and Sixty-fifth streets.
Seventeenth street, between Avenues B and C.
Twentieth street, between Avenues A and B.
Avenue B, between Twentieth and Fifteenth streets.
Beekman street, between Nassau and Pearl streets.
Barclay street, between Church and Washington streets.

Barclay street, between Broadway and West street.
 Wooster street, between Grand and Houston streets.
 Maiden lane, between Nassau and South streets.
 Ferry street, between Gold and Water streets.
 Ann street, between Park Row and Gold street.
 Gold street, between Maiden Lane and John street.
 St. Nicholas avenue, between One Hundred and Forty-fifth and One Hundred and Forty-seventh streets.

Avenue B, between Eighty-third and Eighty-fourth streets.
 Fourth avenue, between One Hundred and Twenty-first and One Hundred and Twenty-second streets.

Fortieth street, between Seventh and Eighth avenues.
 One Hundred and Fourteenth street, between Fourth and Madison avenues.
 Eighty-sixth street, between Eighth and Ninth avenues.
 Eighty-sixth street, between Tenth avenue and Boulevard.
 One Hundred and Forty-first street, between Tenth and St. Nicholas avenues.
 Ninetieth street, between Ninth and Tenth avenues.
 Fourth avenue, between One Hundred and Twelfth and One Hundred and Sixteenth streets.
 West End avenue, between Eighty-eighth and Ninetieth streets.
 West End avenue, between Eighty-fifth and Eighty-sixth streets.
 Eighty-ninth street, between West End and Riverside avenues.
 One Hundred and Seventh street, between Boulevard and Tenth avenue.
 St. Nicholas avenue, between One Hundred and Thirty-fourth and One Hundred and Thirty-fifth streets.

One Hundred and Eighteenth street, between Seventh and St. Nicholas avenues.
 One Hundred and Nineteenth street, between Seventh and St. Nicholas avenues.
 One Hundred and Thirty-fourth street, between Sixth and Seventh avenues.
 Madison avenue, between Seventy-ninth and Eightieth streets.
 Eighty-ninth street, between Ninth and Tenth avenues.
 One Hundred and Twelfth street, from Eighth to Manhattan avenue.
 Sixty-seventh street, from Ninth avenue to Boulevard.
 Tenth avenue, from Little West Twelfth to Bloomfield street.
 West street, between Bloomfield and Gansevoort streets.
 Eighty-third street, between Avenues A and B.
 Ninety-third street, between Fourth and Fifth avenues.
 One Hundred and Forty-third street, between Seventh and Eighth avenues.
 One Hundred and Forty-sixth street, between Seventh and Eighth avenues.
 One Hundred and Forty-seventh street, between Eighth and Coogan avenues.
 One Hundred and Eighteenth street, between Fifth and Sixth avenues.
 One Hundred and Third street, between Tenth and Riverside avenues.
 One Hundred and Thirtieth street, between Boulevard and Riverside Drive.
 Coogan avenue, between One Hundred and Forty-third and One Hundred and Forty-fifth streets.

Ninetieth street, between First and Second avenues.
 One Hundred and Eighteenth street, between Sixth and Seventh avenues.
 Eleventh avenue, between Seventy-first and Seventy-second streets.
 Sixty-fifth street, between Ninth and Tenth avenues.
 One Hundred and Second street, between Ninth and Tenth avenues.
 One Hundred and Fourteenth street, between Madison and Fifth avenues.
 One Hundred and Thirty-seventh street, between Sixth and Seventh avenues.
 Forty-first street, between Eleventh and Twelfth avenues.
 Ninety-seventh street, between Boulevard and West End avenue.
 One Hundred and Forty-first street, between St. Nicholas and Tenth avenues.
 One Hundred and Thirteenth street, between Fifth and Sixth avenues.
 One Hundred and Fifth street, between First avenue and Avenue A.
 Fifteenth street, between Avenues B and D.
 One Hundred and Eighth street, between Boulevard and Riverside avenues.
 One Hundred and Eighteenth street, between St. Nicholas and Eighth avenues.
 Ninety-seventh street, between West End avenue and Riverside Drive.
 Ninety-ninth street, between First avenue and East river.
 One Hundred and Eighteenth street, between Eighth and St. Nicholas avenues.
 One Hundred and Sixteenth street, between Fourth and Eighth avenues.
 Ninety-fifth street, between Boulevard and West End avenues.
 One Hundred and Thirteenth street, between Seventh and Eighth avenues.
 One Hundred and Twenty-second street, between Mount Morris and Lenox avenues.
 Fifteenth street, between Avenues B and D.
 One Hundredth street, between Boulevard and West End avenue.
 West End avenue, between Ninety-ninth and One Hundredth streets.
 Ninety-second street, between Boulevard and West End avenue.
 One Hundred and Thirteenth street, between Eighth and Manhattan avenues.
 Ninety-eighth street, between Boulevard and West End avenue.
 One Hundred and Eighth street, between Ninth and Tenth avenues.
 One Hundredth street, between West End and Riverside avenues.
 One Hundred and Fourth street, between West End and Riverside avenues.
 One Hundred and Third street, between First and Second avenues.
 First avenue, between One Hundred and Third and One Hundred and Fourth streets.
 Manhattan avenue, between One Hundred and Nineteenth and One Hundred and Twentieth streets.

One Hundred and Nineteenth street, between Manhattan and Ninth avenues.
 One Hundred and Twentieth street, between Manhattan and Ninth avenues.
 One Hundred and Third street, between Eighth and Ninth avenues.
 One Hundred and Nineteenth street, between Lenox and Seventh avenues.
 Ninety-third street, between First and Second avenues.
 One Hundred and Thirty-sixth street, between Seventh and Eighth avenues.
 One Hundred and Thirty-seventh street, between Seventh and Eighth avenues.
 Forty-third street, between Seventh and Eighth avenues.
 One Hundred and Thirty-fifth street, between Madison and Fifth avenues.
 Ninety-first street, between First and Second avenues.
 One Hundred and Nineteenth street, between Eighth and Ninth avenues.
 Madison avenue, between One Hundred and Thirty-fifth and One Hundred and Thirty-sixth streets.

Fifth avenue, between One Hundred and Thirty-fifth and One Hundred and Thirty-sixth streets.

One Hundred and Thirty-sixth street, between Fifth and Lenox avenues.
 West End avenue, east side, between Eighty-ninth and Ninety-sixth streets.
 West End avenue, west side, between Eighty-ninth and Ninety-sixth streets.
 Forty-third street, between First avenue and East river.
 Broadway, between Fifty-seventh and Fifty-eighth streets.
 Crossing, Tenth avenue at East One Hundred and Eighty-first street, from west to east side of avenue.

Nineteenth street, south side, west of Tenth avenue, 150 feet.
 One Hundred and Twenty-second street, between Madison and Fourth avenues.
 One Hundred and Second street, between First and Second avenues.

Standard Gas-light Company.

Eight avenue (both sides), between St. Nicholas avenue and One Hundred and Twenty-third street.

Thirty-second street, between Third and Seventh avenues.
 One Hundred and Twenty-third street, between Eighth and St. Nicholas avenues.
 One Hundred and Twenty-sixth street, between Eighth and St. Nicholas avenues.
 One Hundred and Twenty-seventh street, between Eighth and St. Nicholas avenues.
 One Hundred and Twenty-eighth street, between Eighth and St. Nicholas avenues.
 One Hundred and Twenty-ninth street, between Eighth and St. Nicholas avenues.
 One Hundred and Thirtieth street, between Eighth and St. Nicholas avenues.
 One Hundred and Thirty-first street, between Eighth and St. Nicholas avenues.
 One Hundred and Thirty-second street, between Eighth and St. Nicholas avenues.
 One Hundred and Thirty-third street, between Eighth and St. Nicholas avenues.
 One Hundred and Thirty-fourth street, between Eighth and St. Nicholas avenues.
 One Hundred and Thirty-fifth street, between Eighth and St. Nicholas avenues.
 St. Nicholas avenue, between One Hundred and Twenty-fifth and One Hundred and Thirty-seventh streets.

Fourth avenue, between One Hundred and Twenty-fifth and One Hundred and Thirtieth streets.

Fourth avenue, between One Hundred and First and One Hundred and Thirtieth streets.
 Twenty-fourth street, between East river and Seventh avenue.
 Twenty-fifth street, between East river and Seventh avenue.
 Twenty-sixth street, between East river and Seventh avenue.
 Thirty-seventh street, between First and Seventh avenues.
 Thirty-eighth street, between East river and Seventh avenue.
 Seventh avenue (both sides), between One Hundred and Twenty-second and One Hundred and Twenty-fifth streets.

Broadway (both sides), between Twenty-second and Forty-second streets.
 Twenty-third street, between First and Seventh avenues.
 Forty-second street, between Second and Seventh avenues.
 One Hundred and Thirty-sixth street, between Eighth and St. Nicholas avenues.
 One Hundred and Thirty-seventh street, between Eighth and St. Nicholas avenues.
 Avenue A, between Eighteenth and Nineteenth streets.
 Nineteenth street, between First avenue and midway between Avenues A and B.
 Eighteenth street, between Avenue B and First avenue.

Consolidated Telegraph and Electrical Subway Company.

Across Fifth avenue at Nineteenth and Fiftieth streets.
 Poles on Fourth avenue and Fifty-eighth street near Third avenue.
 Stone street, between Broad and William streets.
 Hanover Square, between Stone and Pearl streets.
 Pearl street, between Hanover Square and Frankfort street.
 William street, between Stone street and Exchange place.
 Old Slip, between Stone and Front streets.
 Frankfort street, between Pearl street and Park row.
 Front street, between Maiden lane and Old Slip.
 William street, between Maiden lane and Pine street.
 Maiden lane, between Broadway and Front street.
 Broadway, between Vesey and Canal streets.
 Broadway, between Canal and Fourteenth streets.
 Twenty-fourth street, between Eleventh avenue and North river.
 Lexington avenue, between Fifty-eighth and Sixty-fifth streets.
 Fourteenth street, between Broadway and University place.
 John street, between Broadway and Front street.
 Cortlandt street, between Church street and North river.
 Dover street, between Pearl and Water streets.
 Nassau street, between Ann and John streets.
 Ann street, between Nassau and Gold streets.
 Gold street, between Ann and Beekman streets.
 Broadway, between No. 32 and Beaver street.
 Madison avenue, between Forty-fifth and Fifty-ninth street.
 Nassau street, between Maiden lane and Pine street.
 Hudson street, between Worth and Canal streets.
 Worth street, between Hudson and New Bowery.
 Centre street, between Reade and Worth streets.
 New Bowery, between Worth and Chambers streets.
 Twenty-third street, between Madison and Fifth avenues.
 One Hundred and Twenty-fifth street, between Second and Eighth avenues.
 Barclay street, between College place and North river.
 Chambers street, between West Broadway and North river.
 Spring street, between Broadway and Chrystie street.
 Eighth avenue, both sides, between Thirty-eighth and Forty-fifth streets.
 New Bowery, between Chambers and Dover streets.
 Dey street, between Broadway and Church street.

Document "E."

REPORT OF THE WATER PURVEYOR.

DEPARTMENT OF PUBLIC WORKS,
 BUREAU OF WATER PURVEYOR, NO. 31 CHAMBERS STREET, ROOM 1,
 NEW YORK, January 5, 1889.

Hon. D. LOWBER SMITH, Commissioner of Public Works:

SIR—I have the honor to submit the following report of the transactions of Water Purveyor's Bureau for the quarter and year ending December 31, 1888:

The report for the quarter comprises a brief account of work done and moneys expended. The annual report is a resume of the transactions of the bureau during the whole year.

In obedience to your instruction, I beg to submit the following suggestions, as I believe their fulfillment would largely improve the condition of our streets, and thus be of material benefit to the city.

The new granite pavement laid in Fifth avenue and the asphalt pavement in Madison avenue, now laid from Twenty-third to Thirty-second street, and which it is contemplated to extend to Fifty-eighth street and Central Park, form excellent driveways running longitudinally for a considerable distance through the centre of the city. Access to these pavements, however, from important points on both the east and west sides of the city is over streets in which the pavements are in a very bad condition. This is especially true with reference to streets leading from the principal ferries on the west side, where the majority of visitors to the city are landed, and have to undergo the annoyance of passing over a long stretch of old, rough and worn out Belgian pavement before reaching the better paved streets in the centre of the city. The first impression produced, therefore, on strangers visiting the city is, that our pavements are of the worst possible character, greatly inferior to those in other cities in this country as well as to those in European cities.

I therefore recommend that a careful survey be made at once of the streets leading from the principal ferries on the west side, with a view to making contracts for repaving such streets in the most approved manner at the earliest possible time.

After this has been done, the same course should be pursued with regard to the streets leading from the ferries on the east side.

During the years 1887 and 1888 great attention has been paid to the important work of repaving with specification trap or granite-blocks, streets heretofore paved with cobble stones. On the whole this work has been well and acceptably done under contracts providing for the furnishing as well as the laying of new paving stones; but, in spite of the most careful inspection, it has been found impossible to secure pavements composed of blocks of similar dimensions, which, when laid, should form true and regular courses, actually perpendicular to the sidewalks and, therefore, calculated to best withstand the city's heavy traffic. The streets heretofore repaved, and those which it will be found necessary in the near future to repave, are in portions of the city long built up, where it is not found necessary to frequently disturb the street surface for the laying of sewer, water or gas-pipes. When, therefore, such streets are properly repaved, it may be assumed that the new pavement will last for many years without necessity for repair. Such being the case, the city would be warranted in incurring a little more expense than heretofore in the laying of such pavements, in order to insure their superiority in composition and construction; and I would suggest for your consideration the advisability of the city's purchasing stone in large quantities for repaving. If this can be done and proper storage accommodation obtained, the paving blocks purchased, may be carefully culled under the supervision of our inspectors, and assorted into piles with reference to similarity of dimensions. Contracts may then be let for the laying of pavements only, and paving blocks corresponding in width and depth delivered to the paving contractor for repaving any continuous area.

In connection with the foregoing, I would call to your attention the fact that the city is without adequate accommodation for the storing of materials necessary for the maintenance of its pavements. Such materials are now deposited in the public streets and slips (which are unfit for the purpose) and cause a serious obstruction to traffic. If the foregoing meets with your approval, I would advise that measures be taken for the purchase of storage yards at or in the vicinity of the following places:

1. Rutgers slip on the east side.
2. At the foot of Canal street on the west side.
3. Foot of Thirty-fourth street on the east side.
4. Foot of Thirty-fourth street on the west side.

These yards should be at least one hundred feet by two hundred feet in size. Enormous sums of money are being expended by the City for public parks and pleasure grounds, and I believe that a small amount at least should be laid out in property which is absolutely needed for storage purposes.

In case it shall be decided to adopt the suggestion that the city purchase stone and provide them to contractors for repaving streets, the above recommendation that the city secure yards for the proper storage of material is more especially important.

I have, in the foregoing, called your attention to the fact that Madison avenue, from Twenty-third to Thirty-second street, has been paved with asphalt, and that it has been contemplated to extend this pavement to Fifty-eighth street, and also to lay an asphalt pavement in Fifty-eighth street to Fifth avenue. This is a most important work; and I would respectfully refer you to my Provisional Estimate for the year 1889, in which special attention is called to the matter, and an estimate of the cost of the work given. Objection is made, however, that on the steep grades, between Thirty-third and Thirty-sixth streets and between Forty-first and Forty-second streets, the asphalt pavement would be too smooth and slippery for traffic. This would, perhaps, be the case if the pavement were left in its natural state, but if the city would undertake (as it should do) to sprinkle with sand daily the steep grades (four blocks only), sweeping up at the same time the sand deposited on the previous day, the danger of horses falling would be obviated, and a smooth driveway would be secured, connecting with Central Park and through it with the macadam pave-

ments in the northern part of the city, without the interruption of four blocks of rough stone pavement. I therefore again recommend that Madison avenue, from Thirty-second to Fifty-eighth street, and Fifty-eighth street, from Madison to Fifth avenue, be paved with asphalt, in order to afford an absolutely smooth roadway extending continuously from Twenty-third street to Central Park, and to the macadam pavements north of the park.

The question of repavement in this city is a most vital and important one, and I believe that measures should at once be taken to commence and prosecute the work in a systematic and substantial manner. A first-class pavement cannot be cheaply or carelessly laid. The old cobble pavement in the city is nearly extinct, and the work of replacing that known as Belgian block pavement should now begin. For all streets subject to heavy traffic and not used as carriage drive-ways, granite pavement should be used, and the blocks should be of what is known as specification size. In all cases a foundation of concrete should be used and blocks selected as heretofore described, particularly with regard to uniformity in width, and laid in the most careful manner.

I believe, also, the experiment of doing the work by day's work should be tried. Under any conditions it is impossible to so inspect work done by contractors as to have it compare with that done by men directly employed by the city, provided men of the highest skill be employed. The question of expense, however, must be here considered, as in handling large numbers of men the city is not likely to have the same amount of work done in the same time as the contractor, who will do the work with less care.

For streets used for light traffic I believe that asphalt pavement will prove entirely satisfactory, as it is now laid by contract at a reasonable price, and guaranteed to be kept in good repair for a period of five years by the contractor.

Report for the Quarter Ending December 31, 1888.

RECEIPTS.

For permits for the construction of vaults.....	\$12,946 73
For labor and materials furnished.....	735 61
Total receipts.....	\$13,682 34

EXPENDITURES.

203 vouchers were transmitted during the quarter, amounting in the aggregate to \$411,617 67, and were charged to the following accounts:

Public Drinking-hydrants, 1888.....	\$725 95
Public Drinking-hydrants—Salaries.....	300 00
Repairs and Renewal of Pavements and Regrading, 1887.....	1,736 45
Repairs and Renewal of Pavements and Regrading, 1888.....	138,654 69
Repairs and Renewal of Pavements and Regrading—Salaries.....	5,713 61
Repaving Streets and Avenues, 1887.....	1,376 37
Repaving Streets and Avenues, 1888.....	134,571 80
Repaving Streets and Avenues—Salaries.....	4,000 50
Repairing and Renewal of Pipes, Stop-cocks, etc.....	23,935 26
Restoring and Repaving—Special Fund—Department of Public Works.....	10,424 37
Street Improvement Fund.....	90,178 67

Total of transmittals for quarter ending December 31, 1888..... \$411,617 67

PERMITS ISSUED.

- 34 for the construction of vaults.
- 33 for repairing of vaults.
- 107 for erecting guy-posts.
- 88 for building fires for heating tar and other purposes.
- 23 for repairs to pavements at expense of citizens.

Under resolutions of the Common Council the following permits were issued: To O. P. Ely, to lay a crosswalk across One Hundred and Twenty-fifth street, opposite No. 208 West; to the Equitable Life Assurance Society, to pave with asphalt pavement, Cedar street, from Broadway to Nassau street.

To William J. Haskins, to lay a crosswalk across West street, opposite No. 143.

REPAIRS AND RENEWAL OF PAVEMENTS AND REGRADING.

The average force employed by the Department during the quarter on repairs to pavements was: October 530 men, 105 carts, 6 teams.

November, 564 men, 110 carts, 6 teams.

December, 109 men, 14 carts, 2 teams.

91,759 square yards of pavement were relaid by the above force.

201 square yards of pavement, including 141 square yards of asphalt, were laid under orders completed during the quarter, the cost under each order having been less than \$1,000.

Under resolution of the Common Council, an entire new surface was laid on Fifth avenue, between Waverley place and Ninth street.

The work comprised the laying of 2,226 square yards of asphalt, at a cost of \$5,008.50.

Pavements in the following-named streets were taken up and relaid under contracts, aggregating 93,608.8 square yards, including crosswalks:

- Thirty-first street, from Third to Lexington avenue.
- Thirty-fourth street, from Fifth to Madison avenue.
- Thirty-fourth street, from Fourth to Madison avenue.
- Forty-fifth street from Second to Third avenue.
- Forty-sixth street, from Second to Third avenue.
- Forty-seventh street, from Second to Third avenue.
- Forty-ninth street, from Lexington to Third avenue.
- Forty-ninth street, from First to Second avenue.
- Fiftieth street, from Fifth to Madison avenue.
- Fifty-fifth street, from Fourth to Lexington avenue.
- Fifty-sixth street, from Fourth to Lexington avenue.
- Warren street, between Church and Greenwich streets.
- Barclay street, between College place and Washington street.
- John street, between Broadway and Pearl street.
- Bayard street, between Bowery and Elizabeth street.
- Catharine street, between Madison and South streets.
- Chrystie street, between Hester and Canal streets.
- Mulberry street, between Houston and Bleecker streets.
- Eleventh street, between Broadway and University place.
- Broome street, between Broadway and Hudson street.
- Broome street, between Bowery and Ludlow street.
- Roosevelt street, between South and Water streets.
- William street, between Hanover Square and North William street.
- North William street, between William street and Park Row.
- Nassau street, between Wall and Spruce streets.
- Pearl street, between Whitehall and Broad streets.
- Beaver street, between Pearl and New streets.
- Third avenue (east side), between Forty-third and Forty-fourth streets.
- Lexington avenue, between Fifty-third and Fifty-fourth streets.
- Lexington avenue, between Fifty-seventh and Fifty-eighth streets.
- Lexington avenue, between Sixty-third and Sixty-sixth streets.
- Lexington avenue, between Seventy-first and Seventy-second streets.
- Lexington avenue, between Seventy-fourth and Seventy-fifth streets.
- Lexington avenue, between Seventy-eighth and Seventy-ninth streets.
- Lexington avenue, between Eighty-first and Eighty-second streets.
- Fourth avenue (east side), between Seventeenth and Twenty-third streets.
- Madison avenue, between Fifty-fifth and Fifty-sixth streets.
- Broadway (west side), between Thirty-sixth and Thirty-seventh streets.
- Broadway (east side), between Fifty-first and Fifty-second streets.
- Broadway (west side), between Fifty-second and Fifty-third streets.
- Spring street, between Broadway and Hudson street.

Making the entire quantity of pavement relaid during the quarter, 187,794.8 square yards.

REPAIRING AND RENEWAL OF PIPES, STOP-COCKS, ETC.

The average force employed in the repairing pipes, hydrants, stop-cocks, etc., was:

In October, 103 men, 12 carts.

In November, 111 men, 13 carts.

In December, 115 men, 14 carts.

654 defects in pipes and stop-cocks were repaired.

227 taps were shut off on account of leaks in service-pipes.

1,019 fire-hydrants were repaired.

121 new fire-hydrants were substituted for old ones.

1 new fire-hydrant was erected.

343 defects in pavements were repaired.

PUBLIC DRINKING-HYDRANTS.

19 drinking-hydrants were repaired.

REPAVING STREETS AND AVENUES.

Contracts for repaving the following-named streets were completed during the quarter. The total area so repaved being 57,479.8 square yards, including crosswalks, viz.:

With Granite-block Pavement.

- Cherry street, from Jackson to Clinton street.
- Dry Dock street, from Tenth to Twelfth street.
- Tompkins street, from Fourteenth to Sixteenth street.
- Ludlow street, from Stanton to Houston street.
- Greene street, from Bleecker to Eighth street.
- Mott street, from Canal to Bleecker street.
- Monroe street, from Gouverneur to Jackson street.
- Waverley place, from Bank to Christopher street.
- York street, from St. John's lane to West Broadway.
- St. John's Lane, from Beach to Lighthouse street.
- Cottage place, from Houston to Bleecker street.
- Grove street, from Hudson street to Waverley place.
- Twenty-seventh street, from Ninth to Tenth avenue.
- Fortieth street, from Tenth to Eleventh avenue.

Trap-block Pavement.

- Ridge street, from Stanton to Houston street.
- Suffolk street, from Rivington to Stanton street.
- Thompson street, from Bleecker to Fourth street.
- Twenty-ninth street, from Ninth to Tenth avenue.
- Forty-ninth street, from Eleventh avenue to North river.
- Lewis street, from Grand to Delancey street.
- Montgomery street, from Division to Water street.
- Thirteenth street, from Gansevoort street to Ninth avenue.
- Perry street, from Washington to Bleecker street.

In addition to the foregoing, Fifth avenue, between Thirty-second and Thirty-third streets, was repaved by the repair gangs of this Bureau, with granite-block pavement, with concrete foundation and tar joints, the area so repaved being 1,130 square yards.

Also, Cedar street, from Broadway to Nassau street, was repaved under the permit given to the Equitable Life Assurance Society, the area repaved being 626 square yards.

Making the total area of streets repaved during the quarter, 59,235.8 square yards.

NEW PAVEMENTS UNDER ASSESSMENT.

Twelve contracts for laying new pavements under assessment were finished during the quarter, the total area of pavement completed being 64,633.10 square yards, viz.:

With Granite-block Pavement.

- One Hundred and Thirteenth street, from Seventh to Eighth avenue.
- One Hundred and Fourteenth street, from Park to Madison avenue.
- East side of St. Nicholas avenue, from One Hundred and Thirty-fifth street to 50 feet north of One Hundred and Thirty-sixth street.
- Ninety-third street, from Fourth to Fifth avenue.
- One Hundred and Forty-first street, from Seventh to St. Nicholas avenue.
- Eighty-third street, from First avenue to Avenue A.
- West End avenue, from Seventy-sixth to Eighty-ninth street.

With Trap-block Pavement.

- One Hundred and Seventh street, from First avenue to East river.
- Seventy-sixth street, from Avenue A to Avenue B.
- Eighty-third street, from Avenue A to Avenue B.

With Macadam Pavement.

Eleventh avenue, from One Hundred and Fifty-fifth street to Kingsbridge road.

Under certificate of the Commissioner of Public Works to the Common Council as to its necessity, a crosswalk was laid across University place at the south side of Tenth street, under assessment.

Summary of Work Done during the Year.

RECEIPTS.

For permits to construct vaults.....	\$65,041 92
For labor and materials furnished.....	1,530 94
Total receipts.....	\$66,572 86

EXPENDITURES.

753 vouchers were transmitted, amounting in the aggregate to \$1,408,322.47, and were charged to the following accounts:

Public Drinking-hydrants, 1887.....	\$534 80
Public Drinking-hydrants, 1888.....	2,488 04
Public Drinking-hydrants—Salaries.....	1,200 00
Repairs and Renewals of Pavements and Regrading, 1887.....	24,763 31
Repairs and Renewals of Pavements and Regrading, 1888.....	372,394 62
Repairs and Renewals of Pavements and Regrading—Salaries.....	17,977 30
Repaving Streets and Avenues, 1886.....	954 40
Repaving Streets and Avenues, 1887.....	79,709 30
Repaving Streets and Avenues, 1888.....	243,361 17
Repaving Streets and Avenues—Salaries.....	13,281 97
Wells and Pumps—Repairing and Cleaning.....	106 40
Repairing and Renewal of Pipes, Stop-cocks, etc., 1887.....	3,932 84
Repairing and Renewal of Pipes, Stop-cocks, etc., 1888.....	92,222 60
Restoring and Repaving, Special Fund, Department of Public Works.....	36,337 10
Street Improvement Fund.....	519,042 37
Contingencies—Department of Public Works.....	16 35

Total of transmittals during the year 1888..... \$1,408,322 47

PERMITS ISSUED.

- 165 for the construction of vaults.
- 121 for repairs to vaults.
- 460 for erection of guy-posts.
- 398 for lighting fires on the streets, for roofing, and for other purposes.
- 132 for repairs to pavements at the expense of citizens.

Besides the foregoing, under resolution of the Common Council, various permits were given to citizens to pave streets and to lay crosswalks at locations named in my several quarterly reports throughout the year.

REPAIRS AND RENEWAL OF PAVEMENTS AND REGRADING.

The amount of work done by the repair gangs during the year is as follows:

343,451 square yards of pavement were relaid.

1,426 old crosswalks were repaired.

6 new crosswalks were laid.

3,119 dangerous holes in the street were repaired.

The following is a list of streets in which these repairs were made, viz.:

Streets Relaid from Curb to Curb.

- Twenty-seventh street, from Fifth avenue to Broadway.
- Twenty-seventh street, from Sixth avenue to Broadway.
- Thirtieth street, from Third to Second avenue.
- Thirty-first street, between Eighth and Ninth avenues.
- Thirty-fifth street, between Fifth and Sixth avenues.
- Fifty-eighth street, between Seventh avenue and Broadway, Broadway and Eighth avenue, Ninth and Tenth avenues.
- Sixty-fourth street, between Ninth and Tenth avenues.
- Seventieth street, between Fifth and Madison avenues.
- Seventy-first street, between Eighth and Ninth avenues, and intersection Eighth avenue.
- Seventy-third street, between Ninth and Tenth avenues.
- Seventy-ninth street, between Fourth and Madison avenues, and intersection Fourth avenue.
- Eightieth street, between Lexington and Park avenues.
- Eighty-second street, between Lexington and Fourth avenues.
- Ninety-second street, between Lexington and Third avenues, and intersection Lexington avenue.
- One Hundred and Twenty-sixth street, between Fifth and Lenox avenues.
- Varick street, from Franklin to North Moore street.
- Second avenue, between Sixty-ninth and Seventieth streets.

Half Blocks Relaid.

First avenue, between One Hundred and Twenty-fourth and One Hundred and Twenty-fifth streets, west side, railroad track.
 Second avenue, between Sixty-third and sixty-fourth streets, east side, railroad track.
 Second avenue, between One Hundred and Twenty-fourth and One Hundred and Twenty-fifth streets, west side, railroad track.
 Third avenue, between Fourteenth and Fifteenth streets, west side, railroad track.
 Third avenue, between Fifty-first and Fifty-second streets, west side, railroad track.
 Fourth avenue, between Twenty-second and Twenty-third streets, west side, railroad track.
 Fourth avenue, between Twenty-seventh and Twenty-eighth streets, east side, railroad track.
 Sixth avenue, between Eighteenth and Nineteenth streets, west side, railroad track.
 Sixth avenue, between Nineteenth and Twenty-first streets, west side, railroad track.
 Sixth avenue, between Twentieth and Twenty-first streets, west side, railroad track.
 Eighth avenue, from Seventieth to Eighty-second street, west side, railroad track.
 Eleventh avenue, between Sixtieth and Sixty-first streets, east side, railroad track.
 Fifty-ninth street, between Third and Lexington avenues, south side, railroad track.
 Bleeker street, between West Eleventh and Bank streets, east side, railroad track.
 South street, between Beekman street and Peck Slip, north side, railroad track.
 South street, between Jackson and Gouverneur streets.
 Chambers street, Park Row and Centre street, north side.

Repaved—Tar and Gravel Joints.

Fifth avenue, between Thirty-second and Thirty-third streets, and intersection Thirty-third street.
 Fifth avenue, between Fifty-seventh and Fifty-eighth streets, east side.

Avenues Repaired.

First avenue, between One Hundred and Eighteenth and One Hundred and Nineteenth streets.
 First avenue, from Eighty-second to Eighty-sixth street.
 First avenue, from Seventy-second to Seventy-third street.
 First avenue, from Fifty-third to Fifty-ninth street.
 First avenue, from Fortieth to Forty-first street.
 First avenue, from Thirty-sixth to Thirty-eighth street.
 First avenue, from Thirtieth to Thirty-first street.
 Second avenue, from Houston to Ninth street.
 Second avenue, from Fifty-sixth to Fifty-seventh street.
 Second avenue, from Sixty-first to Sixty-fourth street.
 Second avenue, from Seventy-fourth to Seventy-fifth street.
 Second avenue, from Eighty-fourth to Eighty-sixth street.
 Second avenue, from Ninety-seventh to Ninety-ninth street.
 Second avenue, from One Hundred and Second to One Hundred and Third street.
 Second avenue, from One Hundred and Fifth to One Hundred and Sixth street.
 Second avenue, from One Hundred and Sixteenth to One Hundred and Seventeenth street.
 Second avenue, from One Hundred and Eighteenth to One Hundred and Nineteenth street.
 Third avenue, from Twenty-ninth to Thirtieth street.
 Third avenue, from Thirty-fifth to Thirty-sixth street.
 Third avenue, from Thirty-eighth to Thirty-ninth street.
 Third avenue, from Fifty-first to Fifty-seventh street.
 Third avenue, from Seventy-fourth to Seventy-fifth street.
 Third avenue, from Eighty-fifth to Eighty-sixth street.
 Third avenue, from Eighty-eighth to Eighty-ninth street.
 Third avenue, from One Hundred and First to One Hundred and Third street.
 Third avenue, from One Hundred and Fifth to One Hundred and Seventh street.
 Third avenue, from One Hundred and Fifteenth to One Hundred and Sixteenth street.
 Third avenue, from One Hundred and Twenty-ninth to One Hundred and Thirtieth street.
 Fourth avenue, from Ninth to Tenth street.
 Fourth avenue, from Twenty-third to Twenty-fourth street.
 Fourth avenue, from Twenty-ninth to Thirtieth street.
 Fifth avenue, from Waverley place to Thirteenth street.
 Fifth avenue, between Thirty-sixth and Thirty-seventh streets.
 Fifth avenue, between Forty-first and Forty-second streets.
 Fifth avenue, between Fifty-eighth and Fifty-ninth streets.
 Sixth avenue, between Twenty-second and Twenty-third streets.
 Sixth avenue, between Twenty-sixth and Twenty-seventh streets.
 Sixth avenue, between Thirty-third and Thirty-fourth streets.
 Sixth avenue, from Forty-second to Forty-fifth street.
 Seventh avenue, from Twenty-fourth to Twenty-fifth street.
 Seventh avenue, from Twenty-eighth to Twenty-ninth street.
 Eighth avenue, from Bank to Nineteenth street.
 Eighth avenue, from Twenty-fifth to Forty-fifth street.
 Eighth avenue, from Sixty-third to Seventieth street.
 Eighth avenue, from Ninety-first to Ninety-second street.
 Eighth avenue, from Ninety-fourth to Ninety-fifth street.
 Eighth avenue, from Ninety-ninth to One Hundredth street.
 Eighth avenue, from One Hundred and First to One Hundred and Second street.
 Eighth avenue, from One Hundred and Forty-third to One Hundred and Forty-fifth street.
 Ninth avenue, from Thirteenth to Nineteenth street.
 Ninth avenue, from Twenty-fifth to Thirty-seventh street.
 Ninth avenue, from Fifty-third to Fifty-fourth street.
 Ninth avenue, from Sixty-eighth to Sixty-ninth street.
 Ninth avenue, from Seventy-second to Seventy-fourth street.
 Ninth avenue, from Eighty-fourth to Eighty-sixth street.
 Ninth avenue, from Ninety-second to Ninety-sixth street.
 Tenth avenue, from Thirty-ninth to Fortieth street.
 Tenth avenue, from Fifty-eighth to Fifty-ninth street.
 Tenth avenue, from Sixty-third to Sixty-fourth street.
 Tenth avenue, from Seventy-second to Seventy-third street.
 Tenth avenue, from Eightieth to Eighty-first street.
 Tenth avenue, from Eighty-eighth to Eighty-ninth street.
 Tenth avenue, from Ninety-second to Ninety-third street.
 Tenth avenue, from One Hundred and Ninth to One Hundred and Tenth street.
 Eleventh avenue, from Twenty-seventh to Thirty-fourth street.
 Eleventh avenue, from Fiftieth to Fifty-first street.
 Avenue A, from Ninety-first to Ninety-third street and intersection.
 Vanderbilt avenue, from Forty-second to Forty-third street.
 Lexington avenue, from Twenty-second to Twenty-third street.
 Lexington avenue, from Forty-fifth to Forty-sixth street.
 Lexington avenue, from Forty-seventh to Fifty-third street.
 Lexington avenue, from Sixtieth to Sixty-first street.
 Lexington avenue, from Seventy-third to Seventy-fourth street.
 Lexington avenue, from One Hundred and Fourth to One Hundred and Fifth street.
 Madison avenue, from Forty-third to Forty-fourth street.
 Madison avenue, from Forty-seventh to Forty-eighth street.
 Madison avenue, from Fiftieth to Fifty-fifth street.
 Madison avenue, from Fifty-eighth to Fifty-ninth street.
 Madison avenue, from Sixtieth to Sixty-first street.
 Madison avenue, from Seventy-eighth to Seventy-ninth street.
 Park avenue, from Thirty-fourth to Thirty-ninth street, west side.
 Park avenue, from Fifty-first to Fifty-second street.
 Park avenue, from Eightieth to Eighty-first street.
 Park avenue, from Eighty-third to Eighty-fourth street.
 Park avenue, from Eighty-fifth to Eighty-sixth street.
 Park avenue, from Eighty-ninth to Ninetieth street.
 Park avenue, from One Hundred and Twenty-sixth to One Hundred and Twenty-ninth street.

Streets Relaid.

Albany street, between West and Washington streets.
 Ann street, between Nassau street and Broadway.
 Broadway, between John and Fulton streets.
 Broadway, between Rector and Pine streets.
 Broadway, between Thirteenth and Fourteenth streets.
 Broadway, between Twenty-second and Twenty-third streets.
 Broadway, from Twenty-fifth to Thirty-second street.
 Broadway, from Fortieth to Forty-first street.
 Broadway, from Forty-fifth to Forty-seventh street.
 Broadway, from Fifty-first to Fifty-second street.
 Benson street, from Franklin street to 175 feet north.
 Bleeker street, from Broadway to Bowery.
 Broome street, from Ludlow to Tompkins street.
 Bank street, from West to Washington street.

Birmingham street, from Henry to Madison street.
 Bowery, from Hester to Grand street.
 Bridge street, from Whitehall to Front street.
 Church street, between Cortlandt and Liberty streets.
 Church street, between Cortlandt and Dev streets.
 Church street, between Vesey and Fulton streets.
 Church street, between Murray and Warren streets.
 Chambers street, between Park Row and Centre street.
 Cherry street, between Clinton and Jefferson streets.
 College place, between Warren and Chambers streets.
 Clinton place, between Sixth avenue and Macdougall street.
 Chrystie street, between Grand and Hester streets.
 Caroline street, between Duane and Jay streets.
 Delancey street, between Bowery and Willett street.
 Carlisle street, between Greenwich and West streets.
 Elm street, between Reade and Duane streets.
 Forsyth street, between Canal and Hester streets.
 Front street, between Montgomery and Jackson streets.
 Front street, between Dover street and Peck Slip.
 Fulton street, between West and Washington streets.
 Greenwich street, between Vesey and Barclay streets.
 Greenwich street, between Canal and West Tenth streets.
 Grand street, between Bowery and Clinton street.
 Grand street, between Ridge and Attorney streets.
 Goerck street, between Grand and Houston streets.
 Gouverneur Slip, between Water and Front streets.
 Hudson street, between Thomas and Franklin streets.
 Hudson street, between Beach and Leroy streets.
 Houston street, between Bowery and Chrystie streets.
 Henry street, between Catharine and Grand streets.
 Irving place, between Seventeenth and Eighteenth streets.
 Jackson street, between South and Water streets.
 Jay street, between Greenwich and Washington streets.
 Jersey street, between Mulberry and Crosby streets.
 Little West Twelfth street, between Ninth avenue and Washington street.
 Liberty place, between Maiden lane and Liberty street.
 Liberty street, between Broadway and Nassau street.
 Lafayette place, between Great Jones street and Astor place.
 Marion street, between Broome and Spring streets.
 Marion street, north Prince street.
 New Chambers street, between William and Pearl streets.
 Mott street, between Spring and Prince streets.
 Manhattan street, between Twelfth avenue and North river.
 Manhattan street, between Ninth and Tenth avenues.
 North Moore street, between Varick street and West Broadway.
 Pearl street, between Broadway and Elm street.
 Prince street, between Broadway and Crosby street.
 Prince street, between Elizabeth and Mott streets.
 Prince street, between Mercer and Greene streets.
 Rutgers Slip, between Cherry and Water streets.
 Reade street, between Broadway and Church street.
 Reade street, between West Broadway and Church street.
 Rector street, between West and Greenwich streets.
 Rivington street, between Attorney and Clinton streets.
 Stanton street, between Clinton and Willett streets.
 State street, between Battery place and Whitehall street.
 South street, between Wall and Pine streets.
 South street, between Beekman and Fulton streets.
 South street, between Beekman street and Peck Slip.
 South street, between Jackson and Scammel streets.
 South street, between Rutgers and Pike streets.
 South street, between Catharine street and James Slip.
 Tompkins street, between Grand and Stanton streets.
 Vesey street, between West and Washington streets.
 West street, between Battery place and Morris street.
 West street, between Vesey street and Park place.
 West street, between Murray and Chambers streets.
 West street, between Reade and Duane streets.
 West street, between Harrison and Franklin streets.
 West street, between Spring and Christopher streets.
 West street, between Albany and Cedar streets.
 Waverley place, between Mercer and Macdougall streets.
 Warren street, between West and Washington streets, and intersection.
 Washington street, between Fulton and Vesey streets.
 Washington street, between Houston and Clarkson streets.
 Washington street, between Gansevoort and Little West Twelfth streets.
 Wooster street, between Centre and Mission streets.
 Eighth street, between Avenue C and Avenue D.
 Tenth street, between University place and Broadway.
 Twelfth street, between Third and Fourth avenues.
 Thirteenth street, from Second to Fourth avenue.
 Thirteenth street, from University place to Fifth avenue.
 Thirteenth street, from Ninth avenue to Washington street.
 Thirteenth street, from Fourth to Hudson street.
 Fourteenth street, between Second and Third avenues.
 Fifteenth street, between Tenth and Eleventh avenues.
 Sixteenth street, between Tenth and Eleventh avenues.
 Eighteenth street, between Sixth and Seventh avenues.
 Eighteenth street, between Eighth and Ninth avenues.
 Nineteenth street, between First avenue and Avenue A.
 Nineteenth street, between Eighth and Ninth avenues.
 Twentieth street, between Fourth and Fifth avenues.
 Twentieth street, between Third avenue and Irving place.
 Twenty-sixth street, between First avenue and East river.
 Twenty-sixth street, between Fifth and Sixth avenues.
 Twenty-sixth street, between Seventh and Eighth avenues.
 Twenty-sixth street, between Tenth and Eleventh avenues.
 Twenty-seventh street, between Sixth and seventh avenues.
 Twenty-eighth street, between First avenue and East river.
 Twenty-eighth street, between Tenth and Eleventh avenues.
 Twenty-ninth street, between Third and Lexington avenues.
 Twenty-ninth street, between Tenth avenue and North river.
 Thirtieth street, between Fourth and Fifth avenues.
 Thirtieth street, between First and Second avenues.
 Thirtieth street, between Eleventh avenue and North river.
 Thirty-first street, between First and Second avenues.
 Thirty-first street, between Seventh and Eighth avenues.
 Thirty-fourth street, between Eleventh and Twelfth avenues.
 Thirty-fifth street, between First and Second avenues.
 Thirty-fifth street, between Fifth and Sixth avenues.
 Thirty-sixth street, between Seventh and Eighth avenues.
 Thirty-sixth street, between Broadway and Seventh avenue.
 Thirty-seventh street, between Tenth and Eleventh avenues.
 Thirty-eighth street, between Eleventh avenue and North river.
 Thirty-ninth street, between First and Second avenues.
 Thirty-ninth street, between Park and Lexington avenues.
 Fortieth street, between First and Second avenues.
 Fortieth street, between Eighth and Ninth avenues.
 Fortieth street, between Broadway and Seventh avenue.
 Forty-second street, between Park avenue and Depew place.
 Forty-second street, between Eighth and Ninth avenues.
 Forty-third street, between Fifth and Sixth avenues.
 Forty-third street, between Sixth avenue and Broadway.
 Forty-third street, between Seventh and Eighth avenues.
 Forty-third street, between Eleventh and Twelfth avenues.
 Forty-fourth street, between Sixth and Seventh avenues.
 Forty-fourth street, between First avenue and East river.
 Forty-fourth street, between Broadway and Ninth avenue.
 Forty-fifth street, between First and Second avenues.
 Forty-fifth street, between Broadway and Sixth avenue.
 Forty-fifth street, between Broadway and Eighth avenue.

Forty-sixth street, between First avenue and East river.
 Forty-seventh street, between Sixth and Seventh avenues.
 Forty-seventh street, between Fifth and Madison avenues.
 Fiftieth street, between Eighth and Ninth avenues.
 Fiftieth street, between Ninth and Tenth avenues.
 Fifty-first street, between Madison and Park avenues.
 Fifty-first street, between Tenth avenue and North river.
 Fifty-second street, between Second and Third avenues.
 Fifty-second street, between Fourth and Fifth avenues.
 Fifty-second street, between Ninth and Tenth avenues.
 Fifty-second street, between Eleventh avenue and North river.
 Fifty-third street, between Fourth and Lexington avenues.
 Fifty-third street, between Fifth and Sixth avenues.
 Fifty-third street, between Eighth and Ninth avenues.
 Fifty-fourth street, between Lexington and Third avenues.
 Fifty-fourth street, between Madison and Fourth avenues.
 Fifty-fourth street, between Broadway and Seventh avenue.
 Fifty-fourth street, between Eighth and Ninth avenues.
 Fifty-fifth street, between First and Third avenues.
 Fifty-fifth street, between Eighth and Ninth avenues.
 Fifty-sixth street, between Second and Third avenues.
 Fifty-sixth street, between First avenue and Avenue A.
 Fifty-seventh street, between First avenue and Avenue A.
 Fifty-seventh street, between Lexington and Fifth avenues.
 Fifty-eighth street, between Avenue A and East river.
 Fifty-eighth street, between Madison and Fifth avenues.
 Fifty-eighth street, between Sixth and Seventh avenues.
 Fifty-eighth street, between Eighth and Ninth avenues.
 Fifty-ninth street, between Third and Lexington avenues.
 Fifty-ninth street, between Ninth and Tenth avenues.
 Fifty-ninth street, between Eleventh and Twelfth avenues.
 Sixtieth street, between First avenue and Avenue A.
 Sixtieth street, between Fourth and Madison avenues.
 Sixty-first street, between Fifth and Madison avenues.
 Sixty-first street, between Fourth and Lexington avenues.
 Sixty-third street, between Ninth and Tenth avenues.
 Sixty-fourth street, between Fifth and Madison avenues.
 Sixty-fifth street, between Eighth and Ninth avenues.
 Sixty-seventh street, between Fourth and Lexington avenues.
 Sixty-ninth street, between Second and Fourth avenues.
 Seventieth street, between Third avenue and Avenue A.
 Seventieth street, between Fifth and Madison avenues.
 Seventy-first street, between Eighth and Ninth avenues.
 Seventy-third street, between First and Second avenues.
 Seventy-sixth street, between Fifth and Park avenues.
 Seventy-sixth street, between Boulevard and West End avenue.
 Seventy-sixth street, between Eighth and Ninth avenues.
 Seventy-seventh street, between Eighth and Ninth avenues.
 Seventy-seventh street, between Fifth and Park avenues.
 Seventy-eighth street, between Ninth and Tenth avenues.
 Seventy-ninth street, between Second avenue and Avenue A.
 Seventy-ninth street, between Tenth and West End avenues.
 Eightieth street, between First and Second avenues.
 Eightieth street, between Lexington and Madison avenues.
 Eightieth street, between Ninth and Tenth avenues.
 Eighty-first street, between Ninth and Tenth avenues.
 Eighty-first street, between First avenue and Avenue A.
 Eighty-second street, between Ninth and Tenth avenues.
 Eighty-second street, between Madison and Fifth avenues.
 Eighty-third street, between Madison and Park avenues.
 Eighty-third street, between First and Second avenues.
 Eighty-fourth street, between Second and Third avenues.
 Eighty-fourth street, between First avenue and Avenue A.
 Eighty-sixth street, between Third avenue and Avenue B.
 Eighty-eighth street, between Park and Lexington avenues.
 Ninetieth street, between Third and Lexington avenues.
 Ninetieth street, between Fourth and Fifth avenues.
 Ninety-second street, between Lexington and Madison avenues.
 Ninety-second street, between Eighth and Ninth avenues.
 Ninety-sixth street, between West End avenue and Boulevard.
 Ninety-ninth street, between Third avenue and East river.
 One Hundred and Fourth street, between Second and Third avenues.
 One Hundred and Fifth street, between Third and Lexington avenues.
 One Hundred and Eighth street, between Madison and Fifth avenues.
 One Hundred and Ninth street, between Madison and Fourth avenues.
 One Hundred and Twelfth street, between Avenue A and East river.
 One Hundred and Twentieth street, between Fifth and Sixth avenues.
 One Hundred and Twenty-second street, between Seventh and Lenox avenues.
 One Hundred and Twenty-fifth street, between Ninth and Tenth avenues.
 One Hundred and Twenty-seventh street, between Fifth and Lenox avenues.
 One Hundred and Twenty-seventh street, between Seventh and Eighth avenues.
 One Hundred and Twenty-eighth street, between Fifth and Madison avenues.
 One Hundred and Twenty-eighth street, between Lenox and Seventh avenues.
 One Hundred and Twenty-ninth street, between Broadway and Boulevard.
 One Hundred and Thirtieth street, between Lenox and Seventh avenues.
 One Hundred and Thirty-first street, between Lenox and Fifth avenues.
 14,456.17 square yards of pavement, including 855.53 square yards of asphalt, were taken up and relaid under orders; the cost in each case having been less than \$1,000, and 2,226 square yards of asphalt were renewed in Fifth avenue, between Waverley place and Ninth street, under resolution of the Common Council.
 201,053.66 square yards of pavement, including crosswalks, were relaid by contract in the following streets:
 Wall street, between William and Nassau streets.
 Seventy-ninth street, between Ninth and Tenth avenues.
 Thirty-eighth street, between Sixth and Seventh avenues.
 Forty-eighth street, between Fifth and Sixth avenues.
 One Hundred and Eighteenth street, from First avenue to East river.
 Thirteenth avenue, from Horatio to Little West Twelfth street.
 Gansevoort street, from West street to Thirteenth avenue.
 Bloomfield street, from Tenth to Thirteenth avenue.
 Sixty-third street, between Fourth and Lexington avenues.
 Sixty-fifth street, between Second and Third avenues.
 Seventy-first street, between First and Second avenues.
 Seventy-first street, between Third and Lexington avenues.
 Seventy-first street, between Ninth and Tenth avenues.
 Seventy-fifth street, between First and Lexington avenues.
 Seventy-eighth street, between Madison and Fourth avenues.
 Seventy-ninth street, between Third and Lexington avenues.
 One Hundred and Twenty-sixth street, between Fourth and Fifth avenues.
 One Hundred and Twenty-sixth street, between Sixth and Seventh avenues.
 Lawrence street, between One Hundred and Twenty-sixth and One Hundred and Twenty-ninth streets.
 One Hundred and Nineteenth street, between Second and Third avenues.
 Second avenue, between One Hundred and Sixth and One Hundred and Tenth streets.
 Twenty-eighth street, between Fifth and Madison avenues.
 Twenty-eighth street, between Fourth and Madison avenues.
 Thirty-first street, between Third and Lexington avenues.
 Thirty-second street, between Second and Third avenues.
 Thirty-fourth street, between Fifth and Madison avenues.
 Thirty-fourth street, between Fourth and Madison avenues.
 Forty-fifth street, between Second and Third avenues.
 Forty-sixth street, between Second and Third avenues.
 Forty-seventh street, between Second and Third avenues.
 Forty-ninth street, between Lexington and Third avenues.
 Forty-ninth street, between First and Second avenues.
 Fiftieth street, between Fifth and Madison avenues.
 Fifty-fifth street, between Fourth and Lexington avenues.
 Fifty-sixth street, between Fourth and Lexington avenues.
 Warren street, between Church and Greenwich streets.
 Barclay street, between College place and Washington street.
 John street, between Broadway and Pearl street.

Bayard street, between Bowery and Elizabeth street.
 Catherine street, between Madison and South streets.
 Chrystie street, between Hester and Canal streets.
 Mulberry street, between Houston and Bleecker streets.
 Eleventh street, between Broadway and University place.
 Spring street, between Broadway and Hudson street.
 Broome street, between Broadway and Houston street.
 Broome street, between Bowery and Ludlow street.
 Roosevelt street, between south and Water streets.
 William street, between Hanover Square and North William street.
 North William street, between William street and Park Row.
 Nassau street, between Wall and Spruce streets.
 Pearl street, between Whitehall and Broad streets.
 Beaver street, between Pearl and New streets.
 Twenty-fifth street, from Sixth avenue to 600 feet east.
 Thirty-ninth street, between Fifth and Sixth avenues.
 Fortieth street, between Fifth and Sixth avenues.
 Forty-fifth street, between Fifth and Sixth avenues.
 Forty-fifth street, between Eighth and Ninth avenues.
 Forty-sixth street, from Fifth avenue to 290 feet east.
 Fifty-eighth street, between Fifth and Sixth avenues.
 Fifty-eighth street, between Sixth and Seventh avenues.
 Sixth avenue, west side, between Forty-sixth and Forty-ninth streets.
 Third avenue, east side, between Forty-third and Forty-fourth streets.
 Lexington avenue, between Fifty-third and Fifty-fourth streets.
 Lexington avenue, between Fifty-seventh and Fifty-eighth streets.
 Lexington avenue, between Sixty-third and Sixty-sixth streets.
 Lexington avenue, between Seventy-first and Seventy-second streets.
 Lexington avenue, between Seventy-fourth and Seventy-fifth streets.
 Lexington avenue, between Seventy-eighth and Seventy-ninth streets.
 Lexington avenue, between Eighty-first and Eighty-second streets.
 Fourth avenue, east side, between Seventeenth and Twenty-third streets.
 Madison avenue, between Fifty-fifth and Fifty-sixth streets.
 Broadway, west side, between Thirty-sixth and Thirty-seventh streets.
 Broadway, east side, between Fifty-first and Fifty-second streets.
 Broadway, west side, between Fifty-second and Fifty-third streets.
 Forty-seventh street, between Broadway and Eighth avenue.
 Forty-eighth street, between Broadway and Eighth avenue.
 Forty-ninth street, between Seventh and Eighth avenues.
 Fifty first street, between Fifth and Sixth avenues.
 Fifty-second street, between Ninth and Tenth avenues.
 Fifty-second street, between Sixth and Seventh avenues.
 Fifty-third street, between Sixth and Seventh avenues.
 Fifty-fifth street, between Fifth and Sixth avenues.
 Crosswalks across Seventh avenue, from Twenty-fourth to Forty-first street, except at Thirty-fourth street.

Making a total area of pavement relaid, including crosswalks, during the year 1888, 561,186.83 square yards, or about 8 per cent. of the entire paved area of the city.

During the early part of the season the various railroad companies throughout the city were notified to repair the pavement in and about their tracks. These notices were based upon a very careful and comprehensive examination made by the inspectors in this Bureau. The railroad companies have shown a great willingness to do this work, and have taken up and relaid a large area of pavements, improving the roadways of the streets through which their tracks run, very materially.

REPAIRING AND RENEWAL OF PIPES, STOP-COCKS, ETC.

The work done by the repair force employed under this appropriation during the year, was as follows:

2,190 defects in pipes and stop-cocks were repaired.
 674 taps were shut off on account of leaks in service pipes.
 4,129 fire-hydrants were repaired.
 601 new fire-hydrants were substituted for old.
 2 new fire-hydrants were erected.
 1,526 defects in pavements were repaired.

PUBLIC DRINKING HYDRANTS.

137 drinking-hydrants were repaired.
 6 new drinking-hydrants were erected at a cost of \$2,509.54, at the following points, viz.:
 Northwest corner Lexington avenue and One Hundred and Twenty-fourth street.
 Corner Broadway and Tremont avenue.
 No. 76 South Washington Square.
 No. 330 West street.
 No. 487 Canal street.
 Two Hundred and Sixth street and River road.

WELLS AND PUMPS, REPAIRING AND CLEANING.

4 pumps were repaired at a cost of \$106.41.

REPAVING STREETS AND AVENUES.

Contracts for repaving the following-named streets were completed during the year:

With Granite-block Pavement, including Crosswalks.

STREET.	FROM	SQUARE YARDS OF PAVEMENT.	LENGTH IN FEET.
Crosby street.....	Howard to Bleecker street.....	7,003.7	2,608.9
First street.....	Bowery to Avenue A.....	5,769.0	1,681.7
Stanton street.....	Bowery to Clinton street.....	6,036.0	2,226.2
Orchard street.....	Division to Houston street.....	7,598.0	2,830.0
Third street.....	Bowery to Avenue B.....	8,161.0	2,497.7
Cherry street.....	Jackson to Clinton street.....	5,323.3	1,618.0
Dry Dock street.....	Tenth to Twelfth street.....	920.7	422.1
Tompkins street.....	Fourteenth to Sixteenth street.....	2,879.6	540.6
Ludlow street.....	Stanton to Houston street.....	1,110.5	408.4
Greene street.....	Bleecker to Eighth street.....	3,853.2	1,523.2
Mott street.....	Canal to Bleecker street.....	8,493.3	3,110.8
Monroe street.....	Gouverneur to Jackson street.....	2,692.4	811.6
Waverley place.....	Bank to Christopher street.....	2,520.2	1,049.3
York street.....	St. John's lane to West Broadway, and Beach to Laight street.....	1,310.3	658.3
St. John's lane.....			
Cottage place.....	Houston to Bleecker street.....	1,174.9	410.3
Grove street.....	Hudson street to Waverley place.....	3,506.0	1,256.6
Twenty-seventh street.....	Ninth to Tenth avenue.....	2,717.5	815.5
Fortieth street.....	Tenth to Eleventh avenue.....	2,757.8	826.9
Total granite pavement by contract.....		73,826.5	25,296.1
<i>By Repair Gangs.</i>			
Fifth avenue.....	Thirty-second to Thirty-third street.....	1,130.0	248
Total granite pavement.....		74,956.5	25,544.1

Repaired under Contract with Trap-block Pavement, Including Crosswalks.

STREET.	FROM	SQUARE YARDS OF PAVEMENT.	LENGTH IN FEET.
Twenty-first street.....	Eighth to Ninth avenue.....	5,449.0	1,635.6
Ridge street.....	Stanton to Houston street.....	1,192.9	412.3
Suffolk street.....	Rivington to Stanton street.....	1,169.9	406.7
Thompson street.....	Bleecker to Fourth street.....	2,052.4	738.7
Twenty-ninth street.....	Ninth to Tenth avenue.....	2,700.4	814.8
Forty-ninth street.....	Eleventh avenue to North river.....	2,708.5	810.2
Lewis street.....	Grand to Delancy street.....	1,819.5	664.9
Montgomery street.....	Division to Water street.....	2,919.8	1,052.8
Thirteenth street.....	Gansevoort street to Ninth avenue.....	1,543.5	466.6
Perry street.....	Washington to Bleecker street.....	2,114.1	801.2
Total.....		23,670.0	7,803.8

Asphalt Pavement Laid by Contract.

Madison avenue.....	Twenty-third to Thirty-second street.....	10,409	2,194.0
Under permit to Equitable Life Assurance Society.			
Cedar street.....	Broadway to Nassau street.....	626	329.5
Total.....		11,035	2,523.5

RECAPITULATION.

Total repavement with granite-blocks.....	74,986.5	25,544.1
Total repavement with trap-blocks.....	23,670	7,803.8
Total repavement with asphalt.....	11,035	2,523.5
Making a total of repavement.....	109,661.5	35,871.4

Length of repavement in miles, 6.79.

NEW PAVEMENTS UNDER ASSESSMENT.

The following contracts were completed during the year under assessment :
With Granite-block Pavement, Including Crosswalks.

STREET.	FROM	SQUARE YARDS OF PAVEMENT.	LENGTH IN FEET.
Ninetieth street.....	Eighth to Ninth avenue.....	2,727.20	820
Edgecombe avenue.....	One Hundred and Thirty-fifth to One Hundred and Thirty-seventh street.....	1,651	324
Eighty-sixth street.....	Eighth to Riverside avenue.....	15,690.11	3,146
Eighty-fifth street.....	Ninth to Tenth avenue.....	2,722	816.58
One Hundred and Thirty-third street.....	Sixth to Seventh avenue.....	2,688.67	815
One Hundred and Forty-first street.....	St. Nicholas to Tenth avenue.....	3,468.55	1,014
One Hundred and Third street.....	Ninth to Tenth avenue.....	2,711.70	816.50
Madison avenue.....	One Hundred and Twentieth to One Hundred and Twenty-first street.....	1,661	257.67
Ninetieth street.....	Second to Third avenue.....	2,065	627.50
One Hundred and Thirty-second street.....	Fourth to Madison avenue.....	1,369.50	412.50
Eighth avenue.....	One Hundred and Forty-fifth to One Hundred and Fifty-ninth street.....	25,283	3,641.75
One Hundred and Thirty-fifth street.....	Seventh to Madison avenue.....	14,575	2,201
One Hundred and Twenty-second street.....	Fourth to Madison avenue.....	1,393	427.25
Ninety-first street.....	Eighth to Ninth avenue.....	2,746	820
Seventy-seventh street.....	Eighth to Ninth avenue.....	5,023	818
Manhattan avenue.....	One Hundred and Sixteenth street to St. Nicholas avenue.....	9,272	1,902
One Hundred and Sixteenth street.....	Eighth to Ninth avenue.....	5,585	820
Ninety-fourth street.....	Eighth to Ninth avenue.....	2,722	824
Eighty-second street.....	First avenue to Avenue A.....	2,138	641.69
Ninety-fifth street.....	Eighth to Ninth avenue.....	2,730	819
Sixty-second street.....	Central Park, west, to Boulevard.....	1,340	401
Eighty-ninth street.....	Eighth to Tenth avenue.....	5,409.50	1,634
Sixty-second street.....	Tenth to Eleventh avenue.....	2,724	815
One Hundred and Thirteenth street.....	Seventh to Eighth avenue.....	2,739.17	822
One Hundred and Fourteenth street.....	Park to Madison avenue.....	1,363.50	410.50
East side St. Nicholas avenue.....	One Hundred and Thirty-fifth to 50 feet north of One Hundred and Thirty-sixth street.....	824	.....
Ninety-third street.....	Fourth to Fifth avenue.....	2,880.00	868.83
One Hundred and Forty-first street.....	Seventh to St. Nicholas avenue.....	4,911.11	1,479
Eighty-third street.....	First avenue to Avenue A.....	2,119.66	638.50
West End avenue.....	Seventy-sixth to Eighty-ninth street.....	15,117.33	3,160
	Total granite pavement laid by contract.....	147,650	32,183.27
Paved by Property-owners.			
Sixty-seventh street.....	Second avenue to Avenue A.....	4,361	1,302
	Total granite pavement laid.....	152,011	33,485.27

Trap-block Pavement Laid by Contract, Including Crosswalks.

One Hundred and Seventh street.....	First avenue to East river.....	2,535	756
Seventy-sixth street.....	Avenue A to Avenue B.....	2,294	685.20
Eighty-third street.....	Avenue A to Avenue B.....	2,257.33	679
One Hundredth street.....	Second to Third avenue.....	2,087	626
Ninety-seventh street.....	Third to Fourth avenue.....	2,845.50	853.50
Lexington avenue.....	Ninety-fifth to Ninety-seventh street.....	2,764.22	597.66
Sixty-fourth street.....	First avenue to East river.....	3,695.67	1,108.67

STREET.	FROM	SQUARE YARDS OF PAVEMENT.	LENGTH IN FEET.
Seventy-first street.....	Boulevard to West End avenue.....	2,765	830
Eighty-ninth street.....	First avenue to East river.....	2,220	666
Seventy-seventh street.....	Ninth avenue to Boulevard.....	4,003.33	1,206
Sixty-fifth street.....	Tenth to Eleventh avenue.....	2,746	824
One Hundred and Eleventh street.....	Madison to Fifth avenue.....	1,478	444
Ninety-seventh street.....	Ninth to Tenth avenue.....	2,704	818
Madison avenue.....	One Hundred and Third to One Hundred and Fifth street.....	1,956	441
Seventy-fifth street.....	Boulevard to West End avenue.....	1,544.78	459.50
Second avenue.....	One Hundred and Twenty-eighth street to Harlem river.....	215	.....
Ninety-first street.....	First avenue to Avenue A.....	2,107.22	629
Crosswalks at Avenue B and Eighty-fourth street.....		42.90	9
One Hundred and Fourth street.....	Eighth to Ninth avenue.....	2,845	820
One Hundred and Twelfth street.....	Eighth to Manhattan avenue.....	1,312.50	390
Total.....		44,418.45	12,842.53

Macadam Pavement Laid under Contract.

Eleventh avenue.....	One Hundred and Fifty-fifth street to Kingsbridge road.....	27,592	3,533
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Asphalt Pavement Laid by Property-owners.

West End avenue.....	Seventy-second to Seventy-sixth street.....	4,927	1,025.33
Seventy-third street.....	Boulevard to West End avenue.....	2,066	619.75
Total.....		6,993	1,645.08

RECAPITULATION.

Total granite pavement laid.....	152,011	33,485.27
Total trap-block pavement laid.....	44,418.45	12,842.53
Total macadam pavement laid.....	27,592	3,533
Total asphalt pavement laid.....	6,993	1,645.08
Total new pavement laid.....	231,014.45	51,505.88

Length of new pavement in miles, 9.75.

In addition to the foregoing, crosswalks were laid under assessment across the following streets :
Across Forty-second street, west side of Vanderbilt avenue.
Across Canal street, west side of Christopher street.
Across University place, south side of Tenth street.
—under certificate of the Commissioner of Public Works as to their necessity.

STREET OPENINGS.

The following is an account of the work done in this matter under the supervision of the Water Purveyor's Bureau during the year 1888 :
20,423 openings were made to repair all mains other than Croton water, and make repairs and connections for gas, steam, water, sewer, electric-lights and subways.
7,458 notices were sent from this office to corporations and others to repair bad pavement over openings made by them.
6,815 bad places in the city pavements were repaired in compliance with the above notice.
55.67 miles of gas-mains were laid.
15.80 miles of trench were opened for subways and other electrical appliances.
699 lineal feet of steam-pipe were laid.
5,348 lineal feet of salt-water mains were laid.
1,516 lineal feet of single electrical and other car tracks were laid.
1,400 lineal feet of electrical railway conduit were laid.
1,261 poles were erected by electric-light companies.
191 poles were erected by telegraph and telephone companies.

Yours respectfully,

A. G. CULVER, Water Purveyor.

Document "F,"
REPORT OF ENGINEER IN CHARGE OF SEWERS.

DEPARTMENT OF PUBLIC WORKS,
OFFICE OF ENGINEER IN CHARGE OF SEWERS,
No. 31 CHAMBERS STREET, ROOM 9,
NEW YORK, December 31, 1888.

D. LOWBER SMITH, Esq., Commissioner of Public Works:

DEAR SIR—In compliance with your instructions, I hand you herewith my report of the transactions of this office for the quarter ending December 31, 1888:

13,219 lineal feet of new sewers and 14 receiving-basins have been built, making the present total length of the sewerage of the city 2,265,128 lineal feet (429¹/₁₀ miles), with 5,159 receiving-basins. 21 sewer and 11 basin contracts have been completed, viz.:

- Sewer, West End avenue, between Eighty-ninth and Ninety-first streets.
- " Ninth avenue, between One Hundred and Fourth and One Hundred and First streets.
- " One Hundred and Fifty-third street, between Tenth avenue and Boulevard, etc.
- " Madison avenue, between One Hundred and Fifteenth and One Hundred and Sixteenth streets.
- " One Hundred and Fifteenth street, between Eighth and Manhattan avenues, etc.
- " One Hundred and Nineteenth street, between Manhattan and Ninth avenues.
- " Fifty-third street, between Tenth and Eleventh avenues, etc.
- " One Hundred and Sixteenth street, north side, between Fourth and Madison avenues, etc.
- " One Hundred and Twelfth street, between Tenth avenue and Boulevard.
- " Avenue St. Nicholas, west side, between One Hundred and Seventeenth and One Hundred and Eighteenth streets, etc.
- " Eighth avenue, between One Hundred and Fifth and One Hundred and Fourteenth streets, etc.
- " Madison avenue, between Ninety-fourth and One Hundred and Third streets, etc.
- " Avenue B, between Second and Third streets.
- " One Hundred and First street, between Fourth and Lexington avenues.
- " Ninetieth street, between West End avenue and Boulevard.
- " Ninety-first street, between West End avenue and Boulevard.
- " Hamilton place, between One Hundred and Forty-first and One Hundred and Forty-second streets, etc.
- " Eighth avenue, between One Hundred and Sixteenth and One Hundred and Twenty-first streets, etc.
- " One Hundred and Fifty-fifth street, between Eighth and Coogan avenues.
- " Eighty-ninth street, between West End avenue and Boulevard.
- " Lexington avenue, between One Hundred and Sixteenth and One Hundred and Seventeenth streets.
- " One Hundred and Nineteenth street, between Manhattan and Ninth avenues.

Sewer, Hamilton place, between One Hundred and Fortieth and One Hundred and Forty-first streets.
 " Liberty place, between Maiden lane and Liberty street.
 " West street, between Murray and Jay streets, etc.
 " South street, between Roosevelt street and Peck Slip, etc.
 " Forty-third street and Eleventh avenue, alteration and improvement.
 " First avenue, between Ninety-first and Ninety-second streets.
 " Madison avenue, between One Hundred and Thirty-fifth and One Hundred and Thirty-sixth streets.
 " One Hundredth street, between Riverside and West End avenues.
 Basins, southeast corner One Hundred and Sixty-second street and Avenue St. Nicholas.
 " northeast corner One Hundred and Sixtieth street and Avenue St. Nicholas.
 " northwest corner One Hundred and Eleventh street and Madison avenue.
 " northwest corner One Hundred and Thirty-first street and Park avenue.
 " northwest corner Madison avenue and One Hundred and Thirteenth street.
 " southwest corner One Hundred and Forty-fifth street and first new avenue west of Eighth avenue.
 " northwest corner One Hundred and Sixth street and Pleasant avenue.
 " southeast corner Ninety-first street and Ninth avenue.
 " northeast corner One Hundred and Forty-fifth street and Eighth avenue.
 " northeast corner Sixty-ninth street and West End avenue.
 " northeast corner Seventy-third street and Boulevard.
 There are now in progress contracts for 28 sewers and 10 receiving-basins.
 903 basins and 20,623 linear feet of sewers have been cleaned.

Yours, respectfully,

HORACE LOOMIS, Engineer in Charge of Sewers.

REPORT OF THE TRANSACTIONS OF THE OFFICE OF THE ENGINEER IN CHARGE OF SEWERS FOR THE QUARTER ENDING DECEMBER 31, 1888.

Credit to General Fund—		
Amount received for 277 permits for sewer connections.....	\$6,026	22
Engineers' Fees—		
Amount of Engineers' fees assessed on property benefited, and charged to assessment lists, and credited to Street Improvement Fund.....	\$11,377	62
Sewers—Repairing and Cleaning—1888—		
Balance on hand, September 30, 1888.....	\$35,806	44
By transfer to credit, December 1, 1888.....	11,000	00
	\$46,806	44
Vouchers transmitted to the Commissioner of Public Works—		
Pay-rolls of Laborers, etc.....	\$16,984	63
On contract for repairs.....	8,473	16
Special repairs (under \$1,000).....	5,481	42
Materials and sundries.....	3,672	32
Balance on hand, December 31, 1888.....	12,194	91
	46,806	44
Sewers—Repairing and Cleaning—1887—		
Balance on hand, September 30, 1888.....	\$1,691	16
Voucher transmitted to the Commissioner of Public Works—		
On contracts for repairs, etc.....	\$317	00
Balance on hand, December 31, 1888.....	1,374	16
	1,691	16
Salaries—Sewers—Repairing—		
Balance on hand, September 30, 1888.....	\$2,665	36
Vouchers transmitted to the Commissioner of Public Works—		
Pay-rolls of Inspectors, etc.....	\$2,489	98
Balance on hand, December 31, 1888.....	175	38
	2,665	36
Salaries—Sewerage System—		
Balance on hand, September 30, 1888.....	\$5,306	83
Vouchers transmitted to the Commissioner of Public Works—		
Pay-rolls of Engineers, etc.....	\$5,187	49
Balance on hand, December 31, 1888.....	119	34
	5,306	83
Salaries—Surveys, Maps, etc., for Street Openings and New Streets—		
Balance on hand, September 30, 1888.....	\$1,622	78
Vouchers transmitted to the Commissioner of Public Works—		
Pay-rolls of Draughtsmen, etc.....	\$1,556	25
Balance on hand, December 31, 1888.....	66	53
	1,622	78
Boring Examinations for Grading and Sewer Contracts—		
Balance on hand, September 30, 1888.....	\$1,155	14
Vouchers transmitted to the Commissioner of Public Works—		
Pay-rolls of Axemen, etc.....	\$882	50
Balance on hand, December 31, 1888.....	272	64
	1,155	14
Restoring and Repaving—Special Fund—		
Amount received for permits for street openings.....	\$5,044	00
Street Improvement Fund—		
Vouchers transmitted to the Commissioner of Public Works—		
Pay-rolls of Engineers, etc.....	\$15,704	35
On contracts for sewers, etc.....	113,267	52
	\$128,971	87
Fund for Local Improvement—		
Voucher transmitted to the Commissioner of Public Works—		
On contract for sewer.....	\$106	50
Contingencies—Department of Public Works—		
Vouchers transmitted to the Commissioner of Public Works—		
For transportation expenses.....	\$16	35
Work done by Laborers, Mechanics, etc.—		
16 receiving-basins relieved.		
903 receiving-basins and culverts cleaned.		
20,623 linear feet of sewer cleaned.		
79 linear feet of sewer rebuilt.		
165 linear feet of culvert rebuilt.		
142 linear feet of sewer repaired.		
72 linear feet of new pipe-sewer built.		
120 linear feet of spur-pipe laid.		
66 linear feet of new curb set.		
28 linear feet of curb reset.		
171 linear feet of new culvert built.		
526 linear feet of tile bottom laid.		
1 receiving-basin rebuilt.		
1 manhole rebuilt.		
63 basins repaired.		
285 manholes repaired.		
18 new basin heads and covers put on.		
42 new manhole heads and covers put on.		
14 new basin covers put on.		
27 new manhole covers put on.		
6 basin-heads reset.		
298 manhole-heads reset.		
2 new manholes built.		
3 new basins built.		
1,628 cubic yards of earth excavated and refilled.		
5 cubic yards brickwork built.		
482 square yards of pavement relaid.		
482 square feet of flagging relaid.		
549 square feet new patent sidewalk.		
26 cart-loads of earth filling.		
2,614 cart-loads of dirt removed.		

DEPARTMENT OF PUBLIC WORKS,
 OFFICE OF ENGINEER IN CHARGE OF SEWERS,
 NEW YORK, January 4, 1889.

D. LOWBER SMITH, Esq., Commissioner of Public Works:

DEAR SIR—In obedience to your instructions, I beg leave to present the following as my report of the business of this office during the year 1888:

The sewer system has been increased by building 39,945 linear feet of new sewer, making a total at this date of 2,265,128 feet, or 429 08-100 miles, together with 1,981 feet of culvert and 81 receiving-basins. Of this amount 24,134 feet were brick and 15,811 feet were pipe.

Schedule "A" shows in detail the location, cost, etc., of these works. The large amount of pipe sewer constructed will be found to be located in single blocks where the gradients were good, and all conditions have joined to make their use advantageous. Much prejudice exists in the minds of some as to the desirability of building pipe sewer, but I am convinced that the defects pointed out were the result of poor material and imperfect workmanship. The quality of stone-ware pipes as made to-day is far superior to that manufactured some twenty years ago, when pipe sewers were first used in this city, and as at present built, I believe they will fully realize our expectations, being much less in first cost, more efficient and more productive of good sanitary conditions. You will perceive by a glance at Schedule "A" that the majority of these works are located west of Eighth avenue and north of Seventy-second street, showing to what extent that district has been improved during the past season.

North of One Hundred and Fifty-fifth street there has been no great progress in sewerage work, only two contracts have been finished in that region, and only one is in progress. Several have been called for, which it was impossible to proceed with, since the matter of the outfall sewer at One Hundred and Sixth-seventh street, etc., is still undecided.

In this connection allow me again to call your attention to the great necessity of speedily obtaining, through the Board of Street Openings, the right of way for this improvement to the Harlem river. The Board of Health have time and again condemned the bad sanitary condition of this region, and there can be no relief until this outlet-sewer is built. The amendments to the Consolidation Act of last spring, which I recommended in my last report, gives the authority required, and I respectfully urge your immediate attention to the same.

For the coming season there has been let one contract in this district, namely, Eleventh avenue and Kingsbridge road, between One Hundred and Sixty-first and One Hundred and Sixty-ninth streets, etc. There is also in preparation contract for sewer in Tenth avenue, between One Hundred and Seventy-eighth and One Hundred and Ninetieth streets. This is designed to afford drainage to the Ottendorfer house at Fort George, and it will also make available for improvement a large territory in that portion of the city.

Among the most important works completed this year might be mentioned marginal sewers in West street, between Murray and Jay streets, and in South street, between Roosevelt street and Peck Slip, these form part of a system with which it is proposed to girdle the City (and which has been advanced as fast as the improvement of the river-front by the Department of Docks would permit), removing all sewage deposits to deep water at the pier-head line, and may be regarded as a great improvement in a sanitary point of view. The coming season it is proposed to extend this part of the system by a sewer in West street, between Jay and Canal streets, and in South street, between Fulton street and Peck Slip. Among other large works which have been completed I might mention the following, viz.:

Avenue St. Nicholas, between One Hundred and Twenty-sixth street and 469 feet north of One Hundred and Thirtieth street.

Ninety-second street, between Ninth avenue and Boulevard.

West End avenue, between Sixty-fourth and Sixty-fifth streets, etc.

One Hundred and Fifth street, between New avenue and summit west of Ninth avenue.

Fourth avenue, east side, between Ninety-sixth and One Hundred and Second streets.

Eighth avenue, between One Hundred and Fifth and One Hundred and Fourteenth streets.

Madison avenue, between Ninety-fourth and One Hundred and Third streets, etc.

Eighth avenue, between One Hundred and Sixteenth and One Hundred and Twenty-first streets, etc.

—all of which form an important addition to the sewer system.

Schedule "B" gives the same data as in Schedule "A," as to work now in progress, the estimated cost of which is \$219,804.

Schedule "C" shows sewer contracts that have been let but not yet commenced, giving the same data as Schedule "A."

Schedule "D" shows sewers petitioned for, for which plans are now in progress and which will be put under contract in the early spring.

As to the operation of our sewer system, I may say that it has been generally satisfactory.

The past season has been one in which a great quantity of rain fell in quick heavy showers. This was very trying upon many of the older tide-locked sewers and many serious cases of flooding were reported. The remedy is now under consideration by Mr. Rudolph Hering, who for the past year has conducted a series of observations upon the flow of water in sewers, as compared with the rainfall. While he has made no formal report, the data he has collected shows conclusively that many of the older sewers are too small at the outfall to be efficacious in such an emergency. As I have no desire to forestall his report, I will leave the question of the policy to be pursued in such cases for future discussion. I might, however, state, that for the relief of one district, a contract has been awarded for an additional outfall sewer in Twentieth street, between Tenth avenue and North river, and several sewer outflows have been designed in that portion of the city which will be of great advantage.

The work of repairing brick sewers with vitrified tiles, made especially for this purpose, has been carried on during the present year, and 6,341 linear feet of tile bottom has been laid. So far as the appropriation will permit, I propose during the coming year to continue this work with the following, viz.:

Stanton street, between Bowery and Sheriff street.

Fourth street, between Avenues A and C.

Thirteenth street, between Avenues A and C.

Twelfth street, between Avenues A and C.

Twenty-fifth street, between Sixth and Eighth avenues.

One Hundred and Third street, between Fourth and Madison avenues.

John street, between Front and Pearl streets.

Forty-eighth street, between First and Second avenues.

I also propose the following other works:

Rebuild in Brick—

Eleventh street, between Second and Third avenues.

Thirteenth street, between Broadway and Fourth avenue, and in Fourth avenue, between Thirteenth and Fourteenth streets.

Third avenue, west side, between One Hundredth and One Hundred and Second streets.

Ninth avenue, west side, between Eighty-third and Eighty-fourth streets.

Repair in Brick—

Avenue C (twin sewer), from Fourth to Eighth streets.

Battery place, from Greenwich street to Broadway.

Twelfth street, between Avenues A and C.

Twenty-fifth street, between Sixth and Eighth avenues.

Stanton street, between Bowery and Sheriff street.

John street, between Front and Pearl streets.

Fourth street, between Avenues A and C.

Thirteenth street, between Avenues A and C.

Repair Pipe—

Ninety-sixth street, between Eighth and Ninth avenues.

Sixty-fifth street, between Eighth and Ninth avenues.

Eighth avenue, between Sixty-second and Sixty-sixth streets.

Eighty-first street, between Eighth and Ninth avenues.

Lawrence street, between Ninth and Tenth avenues.

Besides these there are wooden box-sewers which will have to be rebuilt, viz.:

Fulton street, east and west sides, from West street to Hudson river.

Battery place, from Washington street to Hudson river.

The work of boring examinations for sewer contracts has been carried on during the past year with an average force of 1 Axeman, 4 Laborers and 1 horse and wagon.

There have been 25,000 linear feet of streets bored for sewers, and in some cases without finding rock. The approximate estimate for rock for sewers completed during the year calculated from borings was 42,155 cubic yards, and the actual measurement of same was 41,334 cubic yards, or about 2 per centum less than the original estimate.

REPAIRING AND CLEANING.

The work of maintenance of the sewerage system has been performed by a force of 16 Foremen and Timekeepers, 5 Mechanics, 43 Laborers and 21 horses and carts.

In addition to the service performed by the above, a large amount of work has been given to private parties under orders and contracts.

The amount of appropriation for this purpose was \$150,000, and on December 1, 1888, \$11,000 additional was transferred to the credit of this account, making \$161,000 available.

This amount has been expended as follows, viz.:

Pay-roll of Laborers, etc.....	\$66,285	24
Material, etc.....	20,029	96

Work done under orders.....	\$50,819 06
Work done under contract.....	11,670 83
Liabilities outstanding, estimated.....	12,079 68
Leaving a balance of.....	115 23
	<u>\$161,000 00</u>

Altogether there have been 137,000 linear feet of sewer of all kinds and sizes cleaned, at an average cost of 26 cents per foot. Of this 35,215 feet were pipe and 101,785 feet were brick. Owing to the heavy snow and rain storms of the past year the receiving-basins have been taxed to their utmost at certain times, and it was necessary to relieve 1,554 and to clean 3,044.

Most of the brick sewers were done under orders on a uniform scale of prices. Out of this length about 40,000 linear feet were large out-fall sewers, affected by tide, in consequence whereof the work was slow and expensive.

A large amount of work has been done in setting new basin-heads in place of the old pattern, as well as minor repairs to sewers.

The larger repairs or rebuilding which have been done or commenced are shown in the following table, viz.:

Houston street, between Goerck and Mangin streets, alteration and repairs.
Stanton street, between Sheriff and Mangin streets.
First avenue, between Ninety-fifth and One Hundredth streets.
First avenue, between One Hundredth and One Hundred and Second streets.
Sixth street, between Avenues B and C.
Ninety-eighth street, between Second and Third avenues.
Manhattan avenue, between One Hundred and Sixth and One Hundred Tenth streets.
Fifth street, between Avenues B and C.
Twenty-seventh street, between Fifth and Madison avenues.
Twentieth street, between Ninth and Tenth avenues.
Cherry street, between Roosevelt street and Franklin Square.
Twenty-first street, between Fifth and Sixth avenues.
Fourth avenue, both sides, between One Hundred and Sixth and One Hundred and Eighth streets.

One Hundred and Fifty-second street, between Tenth avenue and Boulevard.
Twentieth street, between Broadway and Fourth avenue.
Third avenue, between One Hundred and Eighteenth and One Hundred and Twentieth streets.
One Hundred and Nineteenth street, between Pleasant avenue and East river.
Sixty-fourth street, between Madison and Park avenues.
Forty-second street, at Twelfth avenue outlet.
Eighty-first street, between Eighth and Ninth avenues.
Thirteenth street, between Broadway and Fourth avenue.
Frankfort street, between Jacob and Gold streets.

Of these repairs I might name as of special importance the completion of First avenue, between Ninety-fifth and One Hundredth streets, and between One Hundredth and One Hundred and Second streets.

One Hundred and Nineteenth street, between Pleasant avenue and East river.
Stanton street, between Mangin and Sheriff streets.
Ninety-eighth street, between Second and Third avenues.
Sixty-fourth street, between Madison and Park avenues.
Houston street, between Goerck and Mangin streets.

The following are the number of permits issued to connect buildings with the public sewers and the number of permits issued to repair or relay old house connections. Also the amount of money received for connecting with sewers and for repaving over sewer openings for the year 1888:

Permits for new sewer connections.....	1,221
Permits for repairing old connections.....	1,477
Number of buildings in the above.....	3,368

Amount of money received for sewer connections.....	\$25,444 62
Amount of money received for repaving.....	21,973 50

Total.....\$47,382 12

You will find herewith appended a memorandum of the maps and plans made for the use of the Board of Street Openings during the past year.

Respectfully submitted,
HORACE LOOMIS, Engineer-in-Chief of Sewers.

SCHEDULE "A."

Sewers and Basins, by Contract, Completed during the Year 1888.

LOCATION OF WORK.	SIZE.	SEWER, LINEAL FEET.	CULVERT, LINEAL FEET.	BASINS.	TOTAL COST.
One Hundred and Third street, between West End and Riverside avenues.....	15"	291	....	..	\$3,380 29
One Hundred and Fifth street, between Tenth avenue and summit east, etc.....	3' 6" x 2'	221	....	..	2,622 28
Seventy-fourth street, between Eighth and Ninth avenues.....	3' x 6" x 2'	725	....	..	9,977 29
One Hundred and Fifty-third street, between McComb's Dam road and Eighth avenue, etc.....	3' 6" x 2'	944½	....	..	10,172 69
Seventy-third street, between summit west of Boulevard and Boulevard.....	15"	298	....	..	1,642 82
Fourth avenue, east side, between One Hundred and Sixteenth and One Hundred and Seventeenth streets.....	12"	153½	....	..	1,222 69
One Hundred and Fifty-eighth street, between Tenth and Eleventh avenues.....	12"	690	....	..	6,912 44
Forty-fourth street, between summit east of Sixth and Sixth avenue.....	12"	245	....	..	4,532 41
Tompkins street, between Rivington and Delancey streets.....	15"	343	....	..	1,693 96
Eighty-second street, between Boulevard and Riverside avenue.....	12"	594	....	..	8,689 33
Avenue B, between Eighty-third and Eighty-fourth streets.....	15"	229	....	..	927 45
Pleasant avenue, between One Hundred and Sixteenth and One Hundred and Seventeenth streets.....	15"	264½	62	2	1,386 67
One Hundred and Fifteenth street, between Madison and Fifth avenues.....	15"	390	....	..	2,502 28
One Hundred and Thirty-sixth street, between Seventh and Sixth avenues.....	3' x 2'	661	....	..	4,342 18
Thirty-first street, between First avenue and East river.....	15"	345	....	..	2,448 87
Edgcombe road, between One Hundred and Fortieth and One Hundred and Forty-first streets.....	12"	220	40	2	1,294 01
One Hundred and Forty-fifth street, south side, between Boulevard and Tenth avenue.....	3' x 2'	677	....	..	6,121 68
Fourth avenue, west side, between One Hundred and Twenty-first and One Hundred and Twenty-third streets.....	3' 6" x 2'	733½	9	2	11,331 38
Fourth avenue, east side, between One Hundred Twentieth and One Hundred and Twenty-first streets.....	12"	193	....	..	1,661 31
Avenue St. Nicholas, between One Hundred and Twenty-sixth street and a point 469 feet north of One Hundred and Thirtieth street.....	3' 6" x 2'	1,730½	22	..	13,418 27
Eight avenue, west side, between Eighty-fourth and Eighty-fifth streets, extension.....	12"	38	....	..	864 18
Ninety-second street, between Ninth avenue and Boulevard, etc.....	3' 6" x 2'	1,357	8	1	17,752 02
Fourth avenue, west side, between Seventy-third and Seventy-fourth streets, etc.....	3' 6" x 2'	297	....	..	4,315 29
One Hundred and Fortieth street, between Eighth and Edgcombe avenues.....	15"	268	9	1	1,047 35
Tenth avenue, between Little West Twelfth and Thirtieth streets.....	3' x 2'	215	....	..	2,189 19
West End avenue, between Sixty-fourth and Sixty-fifth streets, etc.....	3' 6" x 2'	1,018	42	2	23,258 73
Tenth avenue, west side, between One Hundred and Thirtieth and One Hundred and Thirtieth streets.....	3' 6" x 2'	822½	....	..	7,646 11
Forty-third street, between First and Second avenues, extension.....	12"	118	....	..	1,769 69
One Hundred and Twenty-first street, between Eighth and Ninth avenues.....	12"	580	32	2	2,494 35
Seventy-fifth street, between Avenue A and East river.....	3' 6" x 2'	702	....	..	13,089 87
One Hundred and Twenty-sixth street, between First and Second avenues.....	3' 6" x 2'	853½	33½	1	5,202 23
One Hundred and Fifth street, between New avenue and summit west of Ninth avenue.....	3' 6" x 2'	1,076	94	4	17,968 52

LOCATION OF WORK.	SIZE.	SEWER, LINEAL FEET.	CULVERT, LINEAL FEET.	BASINS.	TOTAL COST.
Avenue St. Nicholas, between One Hundred and Sixty-second and One Hundred and Fifty-eighth streets.....	15"	942	....	..	\$8,046 44
One Hundred and Eighteenth street, between Eighth and Ninth avenues.....	12"	555	....	..	2,167 04
One Hundred and Seventeenth street, between Eighth and Ninth avenues.....	12"	635	....	..	1,590 56
Ninety-first street, between Second and First avenues.....	3' 6" x 2'	755	....	..	8,942 76
One Hundred and Forty-ninth street, between Seventh and Eighth avenues.....	15"	722	....	..	4,046 94
Eighty-eighth street, between Riverside and West End avenues.....	3' 6" x 2'	686	....	..	9,001 93
Avenue St. Nicholas and Edgcombe road, between One Hundred and Thirtieth and One Hundred and Thirtieth streets.....	12"	647½	....	..	3,728 72
One Hundred and Sixteenth street, south side, between Madison and Fourth avenues.....	3' 6" x 2'	411	....	..	5,121 99
Ninety-fourth street, between Second and Third avenues.....	15"	602	....	..	5,179 80
Fourth avenue, east side, between Ninety-sixth and One Hundred and Second streets.....	3' x 2'	1,515½	....	..	13,002 41
Lexington avenue, between Seventy-eighth and Seventy-ninth streets.....	12"	160½	3	..	1,676 16
Eleventh avenue, east side, between One Hundred and Fifty-ninth and One Hundred and Sixty-first streets.....	3' 6" x 2'	521	....	..	7,912 76
Seventy-third street, between West End and Riverside avenues.....	15"	248	....	..	2,862 28
One Hundred and Eighteenth street, between Fourth and Madison avenues.....	3' 6" x 2'	421	....	..	4,890 93
Warren street, between West and Greenwich streets.....	2' Cir.	142	44	2	2,123 43
One Hundred and Forty-second street, between Boulevard and Hamilton place.....	3' 6" x 2'	463	....	..	5,038 57
West End avenue, between Eighty-ninth and Ninety-first streets.....	12"	570	48	2	4,181 09
Ninth avenue, between One Hundred and Fourth and One Hundred and First streets.....	18"	626	66	2	12,104 55
One Hundred and Fifty-third street, between Tenth avenue and Boulevard, etc.....	3' x 2'	581	....	..	4,466 77
Madison avenue, between One Hundred and Fifteenth and One Hundred and Sixteenth streets.....	3' 6" x 2'	220½	....	..	2,810 92
One Hundred and Fifteenth street, between Eighth and Manhattan avenues, etc.....	12"	574	66	3	2,974 11
One Hundred and Nineteenth street, between Manhattan and Eighth avenues.....	15"	285	....	..	1,041 32
Fifty-third street, between Tenth and Eleventh avenues, etc.....	3' 6" x 2'	760	....	..	11,089 85
One Hundred and Sixteenth street, north side, between Fourth and Madison avenues, etc.....	3' 6" x 2'	871	....	..	13,542 22
One Hundred and Twelfth street, between Tenth avenue and Boulevard.....	15"	761	....	..	5,198 61
Avenue St. Nicholas, west side, between One Hundred and Seventeenth and One Hundred and Eighteenth streets, etc.....	3' 6" x 2'	642½	....	..	2,594 58
Eight avenue, between One Hundred and Fifth and One Hundred and Fourteenth streets, etc.....	3' 6" x 2'	2,406½	256½	8	51,512 84
Madison avenue, between Ninety-fourth and One Hundred and Third streets.....	3' 6" x 2'	2,614½	....	..	26,452 36
Avenue B, between Second and Third streets.....	3' 6" x 2'	205	....	..	1,457 06
One Hundred and First street, between Fourth and Lexington avenues.....	12"	370	....	..	5,752 99
Ninety-first street, between West End avenue and Boulevard.....	15"	292	....	..	1,790 26
Ninety-first street, between West End avenue and Boulevard.....	15"	255	....	..	1,348 03
Hamilton place, between One Hundred and Forty-first and One Hundred and Forty-second streets, etc.....	15"	290	....	..	1,664 56
Eight avenue, between One Hundred and Sixteenth and One Hundred and Twenty-first streets.....	3' 6" x 2'	2,190½	38	2	15,982 59
One Hundred and Fifty-fifth street, between Eighth and Coogan avenues.....	15"	383	....	..	1,568 21
Eighty-ninth street, between West End avenue and Boulevard.....	15"	292	....	..	3,190 64
Lexington avenue, between One Hundred and Sixteenth and One Hundred and Seventeenth streets.....	15"	149	....	..	947 41
One Hundred and Nineteenth street, between Manhattan and Ninth avenues.....	15"	265	....	..	1,034 46
Hamilton place, between One Hundred and Fortieth and One Hundred and Forty-first streets.....	15"	226	....	..	1,184 03
Liberty place, between Maiden lane and Liberty street.....	12"	163	....	..	1,276 90
West street, between Murray and Jay streets, etc.....	4' Cir. 3' 6" x 2' 8" 2' Cir. 4' x 2' 8" 4' Cir. 4' x 2' 8"	1,378	....	..	26,129 55
South street, between Roosevelt street and Peck slip, etc.....	4' Cir. 4' x 2' 8"	757	....	21	16,032 00
Forty-third street and Eleventh avenue, alterations and improvements.....	4' x 2' 8"	215	45	..	2,278 25
First avenue, between Ninety-first and Ninety-second streets.....	3' 6" x 2'	320	....	..	2,730 87
Madison avenue, between One Hundred and Thirtieth and One Hundred and Thirtieth streets.....	3' x 2'	240	....	..	3,201 48
One Hundredth street, between Riverside and West End avenues.....	15"	423	....	..	7,593 85
Seventy-seventh street, between Boulevard and West End avenue.....	15"	227	....	..	3,112 50
Basins.					
Southwest corner One Hundred and Fifteenth street and Fifth avenue.....	....	....	15	1	342 17
Northeast corner Sixty-fourth street and First avenue.....	....	....	21½	1	339 64
Southeast corner One Hundred and Fifth street and Fourth avenue.....	....	....	12½	1	312 55
Northwest corner One Hundred and Thirtieth street and Pleasant avenue.....	....	....	24	1	327 96
Southeast corner One Hundred and Eighth street and Third avenue.....	....	....	78	1	294 64
Northeast and southeast corners One Hundred and Twenty-second street and Madison avenue.....	....	....	30	2	559 99
East side Avenue St. Nicholas, opposite One Hundred and Fifty-eighth street.....	....	....	29	1	283 77
Southeast corner One Hundred and Sixty-second street and Avenue St. Nicholas.....	....	....	66	1	652 26
Northeast corner One Hundred and Sixtieth street and Avenue St. Nicholas.....	....	....	27	1	490 21
Northwest corner One Hundred and Eleventh street and Madison avenue.....	....	....	30	1	420 19
Northwest corner One Hundred and Thirtieth street and Park avenue.....	....	....	21	1	334 55
Northwest corner Madison avenue and One Hundred and Thirtieth street.....	....	....	24	1	369 04
Southwest corner One Hundred and Forty-fifth street and first new avenue west of Eighth avenue.....	....	....	69	1	649 41
Northwest corner One Hundred and Sixth street and Pleasant avenue.....	....	....	33	1	379 24
Southeast corner Ninety-first street and Ninth avenue.....	....	....	15	1	441 80
Northeast corner One Hundred and Forty-fifth street and Eighth avenue.....	....	....	60	1	360 00
Northeast corner Sixty-ninth street and West End avenue.....	....	....	26	1	376 25
Northeast corner Seventy-third street and Boulevard.....	....	....	12	1	313 20
Totals.....	....	46,273½	1,510½	76	\$523,107 28

SCHEDULE "B."

Sewers and Basins in Process of Construction.

LOCATION OF WORK.	SIZE.	SEWER, LINEAL FEET.	CULVERT, LINEAL FEET.	BASINS.	ESTIMATED COST.
Seventy-second street, between Hudson river and Eleventh avenue, etc.....	4' Cir. 3' 6" x 2' 8" 3' 6" x 2'	170 175 1,560	70	5	\$31,900 00
Eighty-ninth street, between Riverside and West End avenues.....	3' 6" x 2'	530	....	..	5,952 00

LOCATION OF WORK.	SIZE.	SEWER, LINEAL FEET.	CULVERT, LINEAL FEET.	BASINS.	TOTAL COST.
Ninetieth street, between Riverside and West End avenues	15"	380	....	..	\$4,905 00
Ninety-first street, between Riverside and West End avenues	15"	325	....	..	3,509 00
One Hundred and Forty-first street, between Boulevard and Tenth avenue, etc.	3' 6" x 2'	310	10	1	4,663 00
One Hundred and Thirty-seventh street, between Sixth and Seventh avenues	15"	665	....	..	3,216 00
One Hundred and Third street, between Eighth and Manhattan avenues	15"	360	40	2	4,107 00
One Hundred and First street, between Boulevard and West End avenue	15"	255	....	..	3,140 00
Fourth avenue, west side, between Ninety-ninth and One Hundred and Third streets	3' 6" x 2'	985	....	..	10,629 00
Seventy-seventh street, between Riverside and West End avenues	15"	442	....	..	5,273 00
Seventy-seventh street, between Boulevard and West End avenue	15"	230	....	..	2,614 00
Tenth avenue, between Seventy-seventh and Eighty-first streets, alteration and improvement	3' 6" x 2'	1,095	50	..	8,660 00
Hamilton place, between One Hundred and Thirty-sixth and One Hundred and Forty-first streets	3' 6" x 2'	982	50	2	9,045 00
Ninety-fifth street, between Madison and Fourth avenues	15"	360	....	..	5,578 00
One Hundred and Seventeenth street, between Madison and Fourth avenues	3' 6" x 2'	375	13	..	4,767 00
Fifty-second street, between Third and Lexington avenues, extension	12"	47	....	..	1,193 00
One Hundred and Fifty-fifth street, between Harlem river and Eighth avenue	15"	785	....	..	5,666 00
One Hundred and Sixty-first street, between Tenth and Eleventh avenues	15"	705	....	..	7,802 00
Third avenue, west side, between Eighty-eighth and Eighty-ninth streets	15"	200	....	..	1,134 00
One Hundred and Second street, between Ninth and Tenth avenues	3' 6" x 2'	746	....	..	7,438 00
Sixty-third street, between Tenth and Eleventh avenues	15"	730	....	..	8,645 00
One Hundred and Ninth street, between Tenth avenue and Boulevard	15"	810	30	3	6,878 00
Seventy-third street, between East river and Avenue A, extension	3' 6" x 2'	675	....	..	10,935 00
Ninetieth street, between Ninth and Tenth avenues, extension	15"	130	....	..	1,955 00
Eleventh avenue Boulevard, east side, between One Hundred and Sixty-first and One Hundred and Sixty-fifth streets, etc.	3' 6" x 2'	970	150	4	29,995 00
One Hundred and Sixty-fifth street between Tenth avenue and Edgecombe road	15"	395	....	..	3,753 00
Twentieth street, between Tenth avenue and North river, alteration and improvement	4' 6" x 3' 6"	1,264	....	..	20,867 00
West street, between Rector and Carlisle streets	15" 12"	287	....	..	1,917 00
Basins.					
Northwest corner One Hundred and Thirty-fifth street and Madison avenue	....	....	35	1	350 00
Southwest corner One Hundred and Thirty-fifth street and Madison avenue	....	....	45	1	370 00
Southeast corner Seventieth street and West End avenue	....	....	15	1	283 00
Northwest and southwest corners One Hundred and Eighth street and Tenth avenue	....	....	30	2	540 00
Southwest corner Seventy-third street and Boulevard	....	....	15	1	320 00
Northwest corner Seventy-second street and Riverside avenue	....	....	35	1	500 00
Southeast corner Eighty-sixth street and Tenth avenue	....	....	10	1	330 00
Northeast corner Seventy-fourth street and Tenth avenue	....	....	20	1	280 00
Southwest corner One Hundred and Forty-eighth street and Eighth avenue	....	....	66	1	350 00
Northeast corner One Hundred and Forty-fifth street and Eighth avenue	....	....	38	1	330 00
Total	....	....	....	..	\$219,804 00

SCHEDULE "C."

Sewer Contracts Executed but not Commenced.

LOCATION OF WORK.	SIZE.	SEWER, LINEAL FEET.	CULVERT, LINEAL FEET.	BASINS.	ESTIMATED COST.
South street, between Peck Slip and Fulton street	....	695	50	....	\$13,585 00
Eldridge street, between Grand and Broome streets	12"	250	....	....	1,545 00

SCHEDULE "D."

Shows Sewers Petitioned for and Plans, etc., in Progress.

LOCATION OF WORK.	SIZE.	SEWER, LINEAL FEET.	CULVERT, LINEAL FEET.
Alteration and improvement to sewers in Twenty-second street, between First and Third avenues	4' Cir. 4' x 2' 8"	383	20
Alterations and improvement to sewer in Twenty-second street, between Ninth and Eleventh avenues	4' x 2' 8"	690	....
Alteration and improvement to sewer in Fifty-fourth street, between Tenth and Eleventh avenues	3' 6" x 2'	890	10
Sewer in Eighty-fifth street, between Boulevard and Riverside avenue	15"	960	....
Sewer in Eighty-eighth street, between Boulevard and West End avenue	15"	290	....
Sewer in Tenth avenue, east side, between One Hundred and Forty-seventh and One Hundred and Forty-ninth streets	3' 6" x 2'	546	....
Alteration and improvement to sewer in Fifty-third street and Tenth avenue	....	....	....
Sewer in Lexington avenue, between Seventy-fourth and Seventy-fifth streets	....	....	....
Sewer in Tenth avenue, west side, north of One Hundred and Seventy-eighth street, etc.	....	....	....
Sewer in Seventy-fifth street, between Riverside and West End avenues	....	....	....
Sewer in Seventy-eighth street, between Riverside and West End avenues	....	....	....
Sewer in Ninety-second street, between West End avenue and Boulevard	....	....	....
Sewer in One Hundred and Seventh street, between Manhattan and Eighth avenues	....	....	....
Sewer in One Hundred and Second street, between West End and Riverside avenues	....	....	....

WORK DONE BY LABORERS, MECHANICS, ETC., FOR YEAR ENDING DECEMBER 31, 1888.

1,554 receiving basins relieved.
 3,044 receiving basins and culverts cleaned.
 137,000 linear feet of sewer.
 693 linear feet of sewer rebuilt.
 1,154 linear feet culvert rebuilt.
 4,923 linear feet sewer repaired.
 255 linear feet new pipe-sewer built.
 86 linear feet new box-sewer built.
 471 linear feet new culvert built.
 82 linear feet new bulkhead built.
 237 linear feet new curb set.
 52 linear feet curb reset.
 8 linear feet gutter-stone reset.

19 receiving basins rebuilt.
 3 manholes rebuilt.
 263 basins repaired.
 861 manholes repaired.
 107 new basin heads and covers put on.
 137 new manhole heads and covers put on.
 73 new basin covers put on.
 123 new manhole covers put on.
 30 basin heads reset.
 893 manhole heads reset.
 29 new manholes built.
 5 new basins built.
 8,544 cubic yards earth excavated and refilled.
 5 cubic yards new brickwork built.
 2,265 square yards pavement relaid.
 3,187 square feet flagging relaid.
 41 square feet new flagging laid.
 549 square feet new patent sidewalk laid.
 141 cart-loads earth filling.
 11,302 cart-loads dirt removed.
 447 linear feet spur-pipe laid.

NEW YORK, November 19, 1888.

General JOHN NEWTON, Commissioner of Public Works:

DEAR SIR—In accordance with your request, I herewith present to you a brief report on the investigation that has been made into the present condition of the sewerage system of this city, with the view to its improvement, stating first, the causes which led you to have the inquiry made, then what has been accomplished up to the present time, and what still remains to be done for completion.

The immediate cause which called for an examination arose from the frequent complaints which were entered on account of the flooding of cellars during heavy rains, of the obstructions and accumulation of foul matter in the sewers, of the offensive odors arising from the manholes and catch-basins and of the objectionable conditions at many of the present outfalls.

In view of the recent progress in sewerage engineering, it was also deemed desirable to ascertain in what directions the present system of sewers in this City can be improved, either in location, construction or maintenance.

To obtain specific data as to the condition and imperfections of the present works, it was first necessary to make a thorough examination of the same.

This has been done, the conditions have been noted, and the plans corrected as far as practicable as to sizes, grades, etc.

Several of the old sewers in the lower part of the city had not been previously indicated upon the maps. Many of them were found to be badly adapted for their purpose, and very few are self-cleaning. They have usually rough interior surfaces, which allow foul matter to adhere, and their shape does not concentrate the flow sufficiently to produce the scour necessary to remove the heavier substances.

A record was also made of the complaints, of their character, cause, extent, and cost of repairs. General Viele's map was assumed to present as accurately as practicable the lines of the old water courses, before the surface was graded and built up, and, therefore, to indicate where leakage from sewers was likely to pollute the ground and sewage to flow across blocks under buildings, a subject into which it was thought advisable to examine.

Various maps have been prepared, showing locations where complaints were most frequent; locations of catch-basins, and number of times each one was cleaned per annum; boundaries of sewer districts with areas, mains, etc., indicated; location of sewers cleaned during 1887; area affected by the backing up of tide-water into the sewers, showing the extent of possible future pumping of the sewage, and also the most unfavorable conditions for storm-water discharge.

As neither precise nor extensive data existed which indicate the amount of storm-water actually reaching the sewers, and as heretofore dependence was placed mainly upon judgment and a few isolated facts, it was deemed highly important to ascertain as definitely as practicable the actual facts, on a large and closely built-up area in the lower part of the city.

A number of approximate results were also obtained from other parts of this and other cities, and the compilation of these data cannot fail to be of great value in properly proportioning the sizes both of new sewers and existing ones where insufficient capacity is causing constantly recurring damages. On the other hand, the possibility of ascertaining the required dimensions as accurately as practicable, will prevent useless expenditure in making sewers larger than necessary.

No gaugings were made of the discharge from small areas, partly because of the expense, and partly because it was hoped in other ways to get the desired information. Still, the importance is such that it would amply repay the cost to get more definite and extended results, particularly because it would establish, without leaving any doubt, the safe limit up to which pipe-sewers could be used in this city.

The sizes of many large sewers have generally been determined by using either Bazalgette's formula, or by assuming an average quantity of water equal to a flow of one-half cubic foot per second per acre to reach the sewer. In a few cases a larger proportion was assumed. The actual results obtained from our gaugings have indicated that the assumptions both of Bazalgette's formula and of "one-half cubic foot of water running off"; while more applicable to the flat suburban areas and light rainfalls, are not applicable to the densely built up areas and rain storms of great intensity such as occur in New York City.

The frequent flooding of certain brick and pipe-sewers are due solely to insufficient capacity. In tidal sewers the flooding is partly due to this cause, when at high tide the reduced gradient, causes a reduced velocity. The large sewer terminating at West Seventeenth street, and draining over 800 acres, was found to possess only one-fourth of the required capacity to properly remove the water. In a few instances flooding has been due to a reduced capacity through the gradual accumulation of deposits.

In a few extensive low areas in the business sections, such as near West Canal street, near Roosevelt street and near Broad street, it may be necessary in the future to establish pumping stations and low level separate system of pipe-sewers for sewage reception only, in order to guard the basements against continual flooding.

In connection with the question of storm-water, removal data were collected and a special report was made covering the proper size of the house-drains which are to deliver the roof water into the sewers.

Regarding the complaints arising from accumulation and obstructions, particularly in pipe-sewers, inquiry showed that more attention should be paid to the proper joining of the sewers, that pipe-sewers should be confined to streets having good gradients, and that a regular system of flushing would considerably reduce the complaints. The newer sewers, as a rule, are satisfactory in this respect.

The deposits in tidal sewers are mainly due to a decreased velocity at high water. They can be avoided or reduced, as the circumstances may indicate, either by improving the invert, by raising the sewer, or by dividing the duty of a larger one over a corresponding number of smaller ones, with higher location and steeper grades.

Complaints such as those due to odors arising from catch-basins and manholes cannot wholly be obviated by placing traps in the former, and by closing the perforations in the covers of the latter.

The trap is placed between the basin and the sewer. Therefore the odors from the accumulation of filth in the basin can escape directly into the air at the gutter. As it seems inexpedient to place an effective water seal trap between the basin and the gutter, the only proper way to avoid the odor (as well as the occasional flooding of the street due to the filling up of the catch-basin) is to keep the basin well cleaned.

Instead of following the present method of special contracts or day's work, for cleaning them, it is much preferable, and is elsewhere also found to be less costly, to include this work in the contract for street cleaning. The silt can then be taken out whenever the street is swept, and an overloading with rubbish and decomposition from the accumulations for weeks and even months, will be almost impossible.

Further, as it is undesirable in most instances to provide special means for the necessary ingress and egress of air, corresponding with the changes of water level in the sewers, otherwise than by perforating manhole covers, which method has been adopted almost everywhere as being the best, the only way to avoid the escape of obnoxious odors is to keep the sewers well cleaned and flushed. In New York the pipe-sewers should be flushed with the Croton water, the larger sewers with panned-up sewage. The statistics that have been compiled as to the manner and cost of cleaning in this and other cities, clearly show the advantages accruing from closer attention to this matter, both in the resulting improved conditions of the sewers and in economy.

For obvious reasons it is far less difficult to secure a good maintenance in smaller cities than in large ones. Yet I see no reason why the latter cannot gradually acquire the same standard and have the same attention bestowed upon sewer-cleaning, in our country, as has been found practicable in the largest cities of Europe.

The difficulties in the way at present seem to be mainly in the existence of many old, improperly shaped sewers, in the absence of flushing appliances, and in a somewhat limited supply of Croton water.

Information has also been collected regarding the experience of discharging exhaust steam into the sewers. Although there is a law against this practice, it is found to be occasionally ignored. The exhaust should either be intercepted by a properly arranged cooling basin, or carried above the roof. The steam is injurious to the lining of the sewer, it makes it impassable for inspection and assists decomposition, and a freer escape of sewer air into the street.

The objectionable condition which has been found to exist in most of the slips into which sewers discharge, can only be overcome by carrying the sewage to the head of the piers, and there delivering into the current, which is sufficiently rapid to dilute and disperse the foul matter, and to render it unobjectionable. This latter possibility, and the fact that it would be enormously expensive to collect and carry the sewage to any distant point for purification, or for a direct discharge into the bay or ocean, makes the present system of disposal, if confined to pier heads, the only feasible one.

No investigation has been made into how far sewers that are laid on made ground, or upon rock filling, lose their water by leakage into the adjoining blocks and old water courses. Any such investigation is expensive owing to the necessary excavations.

Where, however, there is good reason to believe that such a pollution of the soil under buildings is causing disease in any locality, an examination should be made at any cost.

Latterly, sewers in such places have been laid into a bed of concrete, which is not only the proper way to prevent the dangerous leakage but also the best way to repair whatever leaky sewers at present exist in such localities.

The foregoing remarks present an outline of the subjects investigated, with a brief indication of the general results and conclusions that have been reached.

The benefits to be gained from such an inquiry are evident, not only in definitely indicating the ways to remove the frequent causes for complaints, but also in establishing the principles according to which the sewerage works can gradually be brought up to the standard now recognized as necessary to secure immunity from sickness as well as other evils and objectionable features, which may be traced directly to imperfect design or insufficient appliances for maintenance.

At present a good deal of the matter is so far completed that it only remains to be copied and properly arranged. Some is still under way and has not yet been compiled. Still other matter will require more study when reached and a final report has yet to be written, in which it is intended, after the preliminary studies have been completed, to present in detail the general principles which apply to the design and construction of the sewers of this city, such as their most economical sizes, their best forms for different conditions, their least grades, etc. It is further intended to discuss the details of the main appurtenances of the sewers and improvements which can be instituted in the system of maintenance, such as increased facilities for flushing, based mainly on the results attained in other large cities.

It is estimated that to carry out this plan and complete the investigation will require about six months.

Thereafter all drainage districts should be carefully gone over, one by one, and designs made for their improvement, as the funds appropriated for repairs and reconstruction may become available from year to year. During the present year this has been done for a part of the area lying between Seventeenth and Twenty-fourth streets, and near the North river, where very objectionable conditions prevailed, owing, mainly, to an insufficient size of the outfall sewer.

This city has the densest population of any city on the continent and, in consequence, there are important problems of sanitation to be worked out here, for our own benefit, which cannot find their place elsewhere, and which, if we neglect, the experience of no other locality will furnish the data needed for our use. For instance, among others, the amount of storm-water which a given rainfall will deliver to the sewers of a district in a given time is a purely local matter, dependent upon so many contingencies that it must be ascertained for ourselves, and it is so important, both to the proper construction and maintenance of the sewers, that this should be known with some precision, that our observations on this head, which might at first sight appear to be of small moment, will be found of great value in the future arrangement of the works; so of other points which it is desirable to have in such state of forwardness that no interest will suffer by their incompleteness.

In conclusion I desire to acknowledge valuable suggestions and aid received from Col. Julius W. Adams and Mr. Horace Loomis, with reference to the collection of data and in arriving at the conclusions therefrom.

Very respectfully,
(Signed) RUDOLPH HERING, Consulting Engineer.

DEPARTMENT OF PUBLIC WORKS—COMMISSIONER'S OFFICE,
No. 31 CHAMBERS STREET,
NEW YORK, January 4, 1889.

D. LOWBER SMITH, *Commissioner of Public Works* :

SIR—The following is a summary of the work on street opening, etc., done by this Department for the year ending December 31, 1888, for which maps, plans and abstracts for the City of New York, except the Twenty-third and Twenty-fourth Wards, have been furnished and delivered to the Board of Street Opening and Improvement, Counsel to the Corporation, and Clerk of Street Opening, viz. :

New streets that have been laid out and placed upon the Commissioner's map of the city, with the fixing and establishing of their grades.

Old streets that have been discontinued and abolished, maps, plans and abstracts for the use of the Commissioners appointed by the Supreme Court, for the legal opening of streets, etc., and plans for the altering and fixing of grades of the existing streets, the Commissioner of Public Works is required by law so to do.

There has been, in addition to the usual work of the office, the compiling of maps and abstracts of the original grant of lands under water, given by the City in past years. These grants cover the water-front of nearly the whole of the City of New York south of Harlem river, the searching for claims and obligations due the City, and the serving of personal notices, to repair and keep in order the streets included in these grants, which the original grantees or their assigns, the present holders of the property, were obliged to make. Much trouble and delay has occurred in the service of these notices, owing to the non-residence of the owners, or the refusal to acknowledge the ownership of the property affected.

The section taken embraces the water-front on the Hudson river, west of the original high-water line, between Battery place and West Sixteenth street, and a few grants on the East river. These will be followed and extended so as to take in all the grants given by the City.

At this date the notifications are being progressed as rapidly as the nature of the work will admit; more than four hundred personal services have been made.

The following is a detailed list of work done during the past year, viz. :

One Hundred and Twentieth street, between Tenth avenue and Boulevard.
One Hundred and Twenty-seventh street, between Second avenue and Harlem river.
One Hundred and Twenty-seventh street, between Boulevard and Manhattan street.
One Hundred and Thirty-second street, between Eighth avenue and Avenue St. Nicholas.
One Hundred and Thirty-second street, between Twelfth avenue and Hudson river.
One Hundred and Thirty-fourth street, between Boulevard and Tenth avenue.
One Hundred and Thirty-eighth street, between Eighth and Edgecombe avenues.
One Hundred and Thirty-ninth street, between Eighth and Edgecombe avenues.
One Hundred and Forty-eighth street, between Eighth avenue and Hudson river.
One Hundred and Fiftieth street, between Tenth avenue and Boulevard.
One Hundred and Fifty-fourth street, between Eighth avenue and Harlem river.
One Hundred and Sixty-second street, between Eleventh avenue and Kingsbridge road.
One Hundred and Sixty-third street, between Tenth avenue and Edgecombe road.
One Hundred and Sixty-fourth street, between Tenth avenue and Edgecombe road.
One Hundred and Sixty-sixth street, between Tenth avenue and Edgecombe road.
One Hundred and Sixty-eighth street, between Tenth avenue and Kingsbridge road.
One Hundred and Seventieth street, between Tenth avenue and Kingsbridge road.
One Hundred and Seventy-third street, between Tenth avenue and Kingsbridge road.

Audubon avenue, between One Hundred and Sixty-fifth and One Hundred and Seventy-fifth streets.

Dyckman street, between Kingsbridge road and Harlem river.

Edgecombe road, between One Hundred and Fifty-fifth and One Hundred and Seventy-fifth streets.

One Hundred and Eighty-first street, between Tenth and Eleventh avenues.

Exterior street, East river, between Sixty-fourth and Eighty-sixth streets, Laws 1887.

Viaduct on One Hundred and Fifty-fifth street, between Seventh avenue and St. Nicholas place, and land to be taken for drainage purposes, Laws 1888.

Twenty-five streets, roads and avenues included in the area bounded by Dyckman street, Harlem river, Two Hundred and Sixteenth street and Prescott avenue, for which plans were made, and the grades fixed and established for placing them upon the Commissioner's map of the City of New York.

Plans have also been prepared for the widening and extension of College place, between Chambers street and the junction of Greenwich and Fulton streets, for the proposed relief of the travel in streets west of Broadway and south of Canal street, these plans have been delivered to the Board of Street Opening and Improvement, and public meetings have been held in relation thereto.

Streets closed and discontinued—

One Hundred and Thirty-eighth street, from Tenth avenue, in an easterly direction for a distance of 909 feet 3¼ inches, and a new avenue known as Hamlin avenue, from the last mentioned point to the Avenue St. Nicholas, opposite One Hundred and Thirty-fifth street.

One Hundred and Eleventh street, between Tenth and Morningside avenues.

One Hundred and Twelfth street, between Tenth and Morningside avenues.

Streets for which plans and profiles have been made for the change of grades—

One Hundred and Thirty-first street, between Boulevard and Twelfth avenue.

One Hundred and Eighth street, between Ninth and Tenth avenues.

One Hundred and Sixth street, between West End and Riverside avenues.

Streets and avenues for which completed maps, abstracts, etc., have been furnished—

Ninety-ninth street, between Third and Fourth avenues.

Lexington avenue, between Ninety-seventh and One Hundred and Second streets.

One Hundred and Eleventh street, between Eighth and Manhattan avenues.

One Hundred and Nineteenth street, between Tenth avenue and Morningside avenue, West.

One Hundred and Thirty-ninth street, between Tenth avenue and Boulevard.

One Hundred and Forty-second street, between Eighth and Edgecombe avenues.

One Hundred and Forty-third street, between Eighth and Edgecombe avenues.

One Hundred and Sixtieth street, between Tenth and Eleventh avenues.

One Hundred and Sixty-second street, between Tenth and Eleventh avenues.

Claremont avenue, between One Hundred and Twenty-second and One Hundred and Twenty-seventh streets.

Loop road, north of One Hundred and Fifty-fifth street, and return.

Work in progress; including rule maps, damage and benefit maps, abstracts, etc., and new streets laid out, and grades fixed and established for the following streets, etc., viz. :

Fifty-second street, between Eleventh avenue and Hudson river.

Fifty-fourth street, between Tenth avenue and Hudson river.

Avenue B, between Eighty-sixth street and Harlem river.

Widening and extension of Elm street, between Chambers street and Lafayette place.

Widening and extension of Centre street, between Chambers street and Lafayette place.

One Hundred and Eighteenth street, between Tenth and Morningside avenues.

One Hundred and Twentieth street, between Tenth and Morningside avenues.

One Hundred and Twenty-first street, between Tenth and Morningside avenues.

One Hundred and Thirtieth street, between Convent and Tenth avenues.

McComb's Dam road, between One Hundred and Fifty-second and One Hundred and Fifty-fifth streets.

Respectfully,
JOS. O. B. WEBSTER, Assistant Engineer.

Document "G."

REPORT OF THE SUPERINTENDENT OF STREET IMPROVEMENTS.

DEPARTMENT OF PUBLIC WORKS,
BUREAU OF STREET IMPROVEMENTS, ROOM 5, No. 31 CHAMBERS STREET,
NEW YORK, January 4, 1889.

Hon. D. LOWBER SMITH, *Commissioner of Public Works* :

SIR—In compliance with your instructions I have the honor to submit herewith my report of the operations of the Bureau of Street Improvements for the quarter ending December 31, 1888, and also my yearly report, showing all the expenditures of this Bureau for the year ending December 31, 1888, together with a statement of the amount of work done, and also balance of appropriations.

On the commencement of the year 31 contracts were in existence, of which 23 have been completed during the year. 83 contracts were entered in during 1888, of which 66 have also been completed, making a total of 89 contracts completed at a cost of \$424,545.58, for which assessment lists have been transmitted to the Board of Assessors.

The most important of these completed contracts are as follows, viz. :

Treeplanting, West End avenue, from Seventy-second to One Hundred and Seventh street.

Retaining-wall, Forty-third street, from First avenue to Prospect Place.

Regulating, grading, etc., Gansevoort street, from Washington to Thirteenth street.

Regulating, grading, etc., Sixty-third street, from Tenth to Eleventh avenue.

Regulating, grading, etc., Ninety-first street, from Tenth avenue to Riverside Drive.

Regulating, grading, etc., One Hundred and Second street, from Ninth avenue to Riverside Drive.

Regulating, grading, etc., One Hundred and Seventh street, from Eighth to Ninth avenue.

Regulating, grading, etc., One Hundred and Eighth street, from Ninth avenue to Boulevard.

Regulating, grading, etc., One Hundred and Fifteenth street, from Eighth to Ninth avenue.

Regulating, grading, etc., One Hundred and Eighteenth street, from Eighth to Ninth avenue.

Regulating, grading, etc., One Hundred and Thirty-eighth street, from Tenth avenue to Boulevard.

Regulating, grading, etc., One Hundred and Forty-eighth street, from Seventh to Eighth avenue.

Regulating, grading, etc., One Hundred and Sixty-first street, Tenth to Eleventh avenue.

Regulating, grading, etc., Hamilton place, from Boulevard to Tenth avenue.

Regulating, grading, etc., Manhattan avenue, from One Hundredth to One Hundred and Fifth street.

Regulating, grading, etc., New avenue, from One Hundred and Forty-second to One Hundred and Forty-fifth street.

The Fort Washington Ridge road, a very important and large work which was four years under construction, has also been returned as completed by the Inspectors, and is now being examined by the Surveyor and Engineer.

The following are the most important unfinished contracts :

Kingsbridge Road, from One Hundred and Ninetieth street to the Harlem river—

This is a very large contract; 11,000 cubic yards of earth excavation, 26,000 cubic yards of rock excavation and 10,500 cubic yards of filling have been done during the year. It will take over a year to complete this work.

Edgecomb avenue, from One Hundred and Forty-fifth street to St. Nicholas place—

4,500 yards earth excavation, 29,600 yards rock excavation, 29,300 cubic yards of filling and 19,625 cubic yards retaining-wall have been done so far on this important work, which will be completed this year.

New avenue, from One Hundred and Forty-fifth to One Hundred and Fifty-fifth street.

82,400 cubic yards of filling have so far been furnished on this contract and there is no doubt that this avenue will be completed during the early part of the summer.

Forty-ninth street retaining-wall, between First avenue and Beekman place—

This retaining-wall is nearly completed. This improvement will be a great benefit to the neighborhood.

Ninety-second street, Boulevard to Riverside Drive—

7,300 cubic yards of earth excavation and 7,300 cubic yards of rock excavation have been done on this work. It is a heavy rock cut and will be finished during this year.

One Hundred and Sixth street, Boulevard to West End avenue—

This work has just been commenced. It is a heavy rock cut and the work will be finished during the year.

One Hundred and Ninth street, Eighth to Manhattan avenue—

This is a large filling contract and it will take about six to eight months to complete.

One Hundred and Fortieth street, Tenth avenue to Boulevard—

This work is about completed. 4,643 cubic yards of earth excavation and 3,730 cubic yards of rock have been taken out.

One Hundred and Forty-seventh street, Tenth avenue to the Boulevard, and One Hundred and Seventieth street, Tenth to Eleventh avenue—

Have just been commenced and will be completed during the summer months. The estimated cost of the 33 contracts uncompleted is \$649,878.66.

APPROPRIATIONS.

Street Improvements—For Surveying, Monumenting and Numbering of Streets.

The amount appropriated for this purpose was \$3,000, of which sum, \$1,217, has been expended for numbering and renumbering of streets, etc., leaving a balance of \$1,783.

The work of monumenting of streets and avenues has been so far completed that I asked only for \$2,000 for this year.

Flagging Sidewalks and Fencing Vacant Lots in front of City Property.

The appropriation for this purpose amounted to \$14,000; the amount expended is \$8,981.97; outstanding liabilities estimated, \$1,343.25; balance estimated, \$3,674.78.

Necessary repairs have been made to the sidewalks of the Seventh Regiment Armory, amounting to \$604.47.

For filling in, draining and fencing the block bounded by One Hundred and Fifty-fourth and One Hundred and Fifty-fifth streets and Eighth avenue, the sum of \$8,377.50 was expended.

A contract has been made for flagging the sidewalks around Centre Market, estimated cost, \$1,114.25, which work will be done in the spring of this year.

In order to fully carry out the instructions received in regard to defective sidewalks, in accordance with the provisions of section 321 of chapter 410 of the New York Consolidation Act of 1882, as

amended by chapter 569 of the Laws of 1887, I would respectfully suggest the appointment of a competent Inspector of Sidewalks; a man fully conversant with the quality of curb and flag-stones and of the workmanship required. His services would not only be very valuable, but also of the utmost necessity for the proper performance of this part of the work, judging not only from the many complaints this Bureau is receiving daily in regard to defective sidewalks, which are dangerous to the safety, health and convenience of the public, but also from my own observations. These complaints take in the whole city, and it will be impossible for me to give it the proper attention desirable.

Respectfully submitted,

W. M. DEAN, Superintendent of Street Improvements.

STATEMENT OF THE AMOUNT OF WORK DONE DURING THE QUARTER ENDING DECEMBER 31, 1888.

Earth excavated	cubic yards.	17,752
Rock excavated	"	19,398
Filling, furnished	"	162,010
Curb-stones set	linear feet.	7,387 ²⁸ / ₆₀
" reset	"	1,801 ⁴¹ / ₆₀
Flagging laid	square feet.	48,695 ¹⁷ / ₆₀
" relaid	"	8,778 ²³ / ₆₀
Picket fence built	linear feet.	3,166 ⁵ / ₁₂
Dry stone box-culverts, built	linear feet.	420
6-inch drain-pipe laid	"	235
Stone masonry built	cubic yards.	4,031
Cut-stone masonry built	"	27
Trees set	"	667

AMOUNT OF VOUCHERS DRAWN.

On account of—	
Local Improvement Fund	\$5,910 75
Street Improvement Fund	67,305 70
Street Improvements—For Surveying, Monumenting, etc.	326 00
Flagging Sidewalks and Fencing Vacant Lots, etc.	4,377 00
Contingencies of Department of Public Works	281 80
Total	\$78,201 25

WORKS COMPLETED DURING THE QUARTER.

Regulating, grading at—	
One Hundred and Eighth street, Ninth avenue to Boulevard	\$6,660 58
One Hundred and Tenth street, First to Pleasant avenue	2,580 33
One Hundred and Twenty-first street, Eighth to New avenue	1,670 71
One Hundred and Twenty-second street, St. Nicholas to Manhattan avenue	1,018 45
One Hundred and Forty-first street, Hamilton place to Boulevard ..	2,649 96
One Hundred and Fiftieth street, St. Nicholas to Edgecomb avenue ..	3,334 80
	\$17,914 83
Regulating sidewalks—	
Eleventh avenue, One Hundred and Fifty-fifth street to Kingsbridge road	3,206 72
Curbing—	
West End avenue, Sixty-ninth to Seventy-second street	471 54
Flagging—	
North side Sixty-fifth street, Eighth to Ninth avenue	\$2,522 07
South side Seventy-fourth street, Avenue A to East river	1,189 59
Seventy-sixth street, Eighth to Ninth avenue	1,533 88
Ninety-first street, Eighth to Ninth avenue	1,223 63
Ninety-eighth street, Boulevard to West End avenue	767 30
South side One Hundred and Thirty-third street, Lenox to Seventh avenue	820 33
	8,056 80
Fencing vacant lots—	
One Hundred and Sixth and One Hundred and Seventh streets, Eighth to Manhattan avenue	\$587 03
One Hundred and Tenth and One Hundred and Twelfth streets, Eighth to Manhattan avenue	478 56
One Hundred and Twelfth and One Hundred and Thirteenth streets, Eighth to Manhattan avenue	293 48
Northeast corner Seventh avenue and One Hundred and Twenty-first street	80 81
West side Eighth avenue, One Hundred and Forty-eighth to One Hundred and Fifty-second street	246 37
North side Eighty-ninth street, 100 feet east of Third avenue, etc. .	137 31
South side Ninetieth street 100 feet east of Third avenue, etc.	104 71
	1,928 27
Total	\$31,578 16

APPROPRIATIONS.

Flagging Sidewalks and Fencing Vacant Lots in front of City Property	\$14,000 00
Amount of vouchers drawn during second quarter	\$227 50
Amount of vouchers drawn during third quarter	4,377 47
Amount of vouchers drawn during fourth quarter	4,377 00
Amount of outstanding liabilities (estimated)	1,343 25
Balance (estimated)	3,674 78
	14,000 00
Contingencies of Department of Public Works—	
Amount of vouchers drawn during fourth quarter	\$281 80
Street Improvements—For Surveying, Monumenting and Numbering of Streets, 1888 ..	\$3,000 00
Amount of vouchers drawn during first quarter	\$280 00
Amount of vouchers drawn during second quarter	321 50
Amount of vouchers drawn during third quarter	289 50
Amount of vouchers drawn during fourth quarter	326 00
Balance	1,783 00
	3,000 00

AMOUNT OF VOUCHERS DRAWN DURING THE YEAR.

ON ACCOUNT OF—	JANUARY 1 TO MARCH 31.	APRIL 1 TO JUNE 30.	JULY 1 TO SEPTEMBER 30.	OCTOBER 1 TO DECEMBER 31.	TOTAL.
Local Improvement Fund	\$4,350 00	\$2,356 40	\$2,737 98	\$5,910 75	\$15,355 13
Fund for Local Improvements		864 75			864 75
Street Improvement Fund	61,609 13	91,928 95	111,274 06	67,305 70	332,117 84
Street Improvements—For Surveying, etc., 1888	280 00	321 50	289 50	326 00	1,217 00
Street Improvements—For Surveying, etc., 1887	20 00		900 00		920 00
Flagging sidewalks and Fencing Vacant Lots, etc.		227 50	4,377 47	4,377 00	8,981 97
Contingencies—Department of Public Works	270 00	270 00	325 89	281 80	1,147 69
Total	\$66,529 13	\$95,969 10	\$119,904 90	\$78,201 25	\$360,604 38

AMOUNT OF WORK DONE DURING THE YEAR.

NATURE OF WORK.	JANUARY 1 TO MARCH 31.	APRIL 1 TO JUNE 30.	JULY 1 TO SEPTEMBER 30.	OCTOBER 1 TO DECEMBER 31.	TOTAL.
Earth excavated, cubic yards	\$1,385	\$7,590	\$15,895	\$17,752	\$42,622
Rock excavated, cubic yards	32,405	19,348	22,847	19,398	93,998
Filling furnished, cubic yards	48,053	37,588	36,204	40,165	162,010
Curb-stones set, linear feet	1,937 ¹ / ₁₀	13,283 ⁷ / ₁₀₀	14,785 ¹ / ₂	7,387 ²⁸ / ₆₀	37,393 ¹ / ₁₀₀
Curb-stones reset, linear feet	1,012 ⁹ / ₁₀	4,469 ¹⁷ / ₁₀₀	2,847 ⁹⁷ / ₁₀₀	1,801 ⁴¹ / ₆₀	10,132 ¹ / ₁₀₀
Flagging laid, square feet	15,530	70,608 ¹ / ₂	103,328 ²² / ₁₀₀	48,695 ¹⁷ / ₆₀	238,162 ¹ / ₁₀₀
Flagging relaid, square feet	7,550	7,374 ⁸⁷ / ₁₀₀	13,016 ¹² / ₁₀₀	8,778 ²³ / ₆₀	36,719 ¹ / ₁₀₀
Picket fence built, linear feet	716	7,881 ²⁸ / ₁₀₀	3,662 ⁷ / ₁₂	3,166 ⁵ / ₁₂	15,425 ⁴² / ₁₀₀
Dry stone box-culverts built, linear feet			857	420	1,277
6-inch drain-pipe laid, linear feet	450	200	700	235	1,585
Stone masonry built, cubic yards	650 ² / ₁₀	3,624	4,094	4,031	12,399 ³ / ₁₀
Cut-stone masonry built, cubic yards	2		20	5	27
Concrete masonry built, cubic yards	1 ¹ / ₁₀				1 ¹ / ₁₀
Trees set	117			550	667
Trap-block pavement laid, square yards	160				160
Trap-block pavement relaid, square yards	3,415				3,415
Bridge-stones set, square feet	411				411
Bridge-stones reset, square feet	1,210				1,210
Iron railing, linear feet	1,210				1,210

Work done in front of City Property.

Curb-stones set, linear feet			12		12
Curb-stones reset, linear feet			640		640
Flagging laid, square feet			45		45
Flagging relaid, square feet			6,332		6,332
Filling furnished, cubic yards				13,200	13,200
12-inch pipe laid, linear feet				80	80
Cast-iron inlet-frame				1	1

Monument Stones Set and Reset.

LOCATION.				
Edgecomb avenue and One Hundred and Fifty-ninth street	1			1
Eighty avenue, Fifty-ninth street to Harlem river		20		20
Avenue St. Nicholas, One Hundred and Tenth to One Hundred and Sixty-second street			25	25
Total	1		45	46

WORKS COMPLETED DURING THE YEAR 1888.

Tree-planting—	
West End avenue, Seventy-second to One Hundred and Seventh street	\$21,649 39
Retaining wall—	
Forty-third street, First avenue to Prospect place	11,166 62
Regulating, Grading, Paving, etc.—	
Gansevoort street, Washington to Thirteenth street, etc.	12,447 23
Regulating, Grading, etc.—	
Hamilton place, Boulevard to Tenth avenue	\$17,618 38
Manhattan avenue, One Hundredth and One Hundred and Fifth streets	133,377 58
Manhattan avenue, One Hundred and Thirteenth to One Hundred and Sixteenth street	2,358 46
New avenue, One Hundred and Forty-second to One Hundred and Forty-fifth street	16,716 65
Sixty-third street, Tenth to Eleventh avenue	25,239 81
Eighty-sixth street, Ninth avenue to Riverside Drive	1,387 30
Ninety-first street, Tenth avenue to Riverside Drive	13,634 04
Ninety-seventh street, Boulevard to Riverside Drive	4,043 46
One Hundred and Second street, Ninth avenue to Riverside Drive ..	29,999 78
One Hundred and Seventh street, Eighth to Ninth avenue	10,139 61
One Hundred and Eighth street, Eighth and Manhattan avenues ..	4,854 26
One Hundred and Eighth street, Ninth avenue to Boulevard	6,660 58
One Hundred and Eighth street, Boulevard to Riverside Drive	1,578 72
One Hundred and Tenth street, First to Pleasant avenue	2,580 33
One Hundred and Fourteenth street, Eighth to Ninth avenue	5,177 84
One Hundred and Fifteenth street, Eighth to Ninth avenue	5,020 53
One Hundred and Eighteenth street, Eighth to Ninth avenue	4,036 32
One Hundred and Nineteenth street, Eighth to Ninth avenue	3,264 91
One Hundred and Twenty-first street, Eighth to New avenue	1,670 71
One Hundred and Twenty-second street, St. Nicholas to Manhattan avenue ..	1,018 45
One Hundred and Thirty-eighth street, Tenth avenue and Boulevard ..	12,982 22
One Hundred and Forty-first street Hamilton place to Boulevard ..	2,649 96
One Hundred and Forty-eighth street, Seventh to Eighth avenue ..	10,657 07
One Hundred and Fiftieth street, St. Nicholas to Edgecombe avenue ..	3,334 80
One Hundred and Fiftieth street, Tenth to St. Nicholas avenue	2,367 16
One Hundred and Fifty-ninth street, St. Nicholas avenue to Edgecombe road	2,444 96
One Hundred and Sixty-first street, St. Nicholas to Tenth avenue ..	680 18
One Hundred and Sixty-first street, Tenth to Eleventh avenue	10,374 04
	335,868 01
Regulating sidewalks—	
Eleventh avenue, One Hundred and Fifty-fifth street to Kingsbridge road	3,206 72
Curbing—	
West End avenue, Sixty-ninth street to Seventy-second street	471 54
Curb and flagging—	
Sylvan place, One Hundred and Twentieth to One Hundred and Twenty-first street, etc.	\$1,041 30
West side Fourth avenue, Ninety-sixth to One Hundred and Second street	2,783 36
	3,824 66
Flagging—	
West side Madison avenue, One Hundred and Twenty-seventh to One Hundred and Twenty-eighth street, etc.	\$685 71
West side First avenue, Sixty-third to Sixty-fourth street, etc.	461 58

Flagging—		
West side Second avenue, One Hundred and Twenty-eighth to One Hundred and Twenty-ninth street, etc.	\$236	87
West side Third avenue, One Hundred and Seventh to One Hundred and Eighth street, etc.	121	48
East side Fourth avenue, One Hundred and Seventh to One Hundred and Eighth street, etc.	1,254	84
East side Fourth avenue, One Hundred and Twenty-fourth to One Hundred and Twenty-fifth street, etc.	131	23
East side Ninth avenue, Eighty-first to Eighty-second street, etc.	653	69
East side Tenth avenue, Sixty-first to Sixty-second street, etc.	519	03
Tenth avenue, Sixty-fifth to Sixty-ninth street.	3,654	35
Southeast corner Lexington avenue and One Hundred and Twenty-seventh street.	255	20
Northwest corner Fifty-seventh street and First avenue.	1,037	00
Northeast corner Ninth avenue and Ninety-second street.	331	61
Centre, Elm, White and Franklin streets.	3,869	77
South side Fourteenth street, Avenues B and C.	813	00
North side Thirty-third street, 100 feet west Ninth avenue.	280	27
North side Sixty-fifth street, Eighth to Ninth avenue.	2,522	07
South side Seventy-first street, 100 feet west Second avenue, etc.	178	00
South side Seventy-fourth street, Avenue A to East river.	1,189	59
Seventy-sixth street, Eighth to Ninth avenue.	1,533	88
Ninety-first street, Eighth to Ninth avenue.	1,223	63
North side Ninety-seventh street, Madison to Fifth avenue.	371	15
Ninety-eighth street, Boulevard to West End avenue.	767	30
South side One Hundred and Second street, Lexington to Fourth avenue.	560	03
One Hundred and Second street, First avenue to Harlem river.	1,215	13
One Hundred and Third street, Fourth to Madison avenue.	189	68
North side One Hundred and Tenth street, Madison to Fifth avenue.	780	68
South side One Hundred and Eleventh street, Madison to Fifth avenue.	530	27
North side One Hundred and Seventeenth street, Fifth to Sixth avenue.	432	42
South side One Hundred and Thirty-third street, Lenox to Seventh avenue.	820	33
	\$26,619	80

Fencing vacant lots—		
Seventy-eighth and Seventy-ninth streets, Ninth to Tenth avenue.	\$149	34
Ninetieth and Ninety-first streets, Eighth to Ninth avenue.	305	73
Ninety-third and Ninety-fourth streets, Eighth to Ninth avenue.	904	39
One Hundred and Sixth and One Hundred and Seventh streets, Eighth to Manhattan avenue.	587	03
One Hundred and Sixth and One Hundred and Seventh streets, Manhattan to Ninth avenue.	693	99
One Hundred Sixth and One Hundred and Seventh streets, Boulevard to Tenth avenue.	560	33
One Hundred and Seventh and One Hundred and Eighth streets, Tenth avenue to Boulevard.	704	40

Fencing vacant lots—		
One Hundred and Tenth and One Hundred and Twelfth streets, Eighth to Manhattan avenue.	\$478	56
One Hundred and Twelfth and One Hundred and Thirteenth streets, Eighth to Manhattan avenue.	293	48
One Hundred and Thirteenth and One Hundred and Fourteenth streets, Madison to Fifth avenue.	476	36
One Hundred and Thirteenth and One Hundred and Fourteenth streets, Eighth to Manhattan avenue.	526	60
One Hundred and Fourteenth and One Hundred and Fifteenth streets, Madison to Fifth avenue.	119	53
One Hundred and Eighteenth and One Hundred and Nineteenth streets, Fifth to Sixth avenue.	336	36
One Hundred and Forty-eighth and One Hundred and Forty-ninth streets, Seventh to Eighth avenue.	998	13
Fifth and Lenox avenues, One Hundred and Twenty-eighth and One Hundred and Twenty-ninth streets.	96	77
No. 1417 Avenue A.	17	62
West side Lexington avenue, Ninety-fifth to Ninety-sixth street.	321	38
West side Eighth avenue, One Hundred and Forty-eighth to One Hundred and Fifty-second street.	246	37
Northwest corner Lexington avenue and One Hundred and Ninth street.	85	69
Northeast corner Seventh avenue and One Hundred and Twenty-first street.	80	81
Northeast corner Seventh avenue and One Hundred and Twenty-seventh street.	140	19
Ninety-sixth street, Eighth to Ninth avenue.	730	51
South side One Hundred and Sixteenth street and Manhattan avenue.	194	02
North side Eighty-ninth street, 100 feet east Third avenue, etc.	137	31
South side Ninetieth street, 100 feet east Third avenue, etc.	104	71
	\$9,291	61
Total.	\$424,545	58

RECAPITULATION.

1 contract for tree-planting.	\$21,649	39
1 contract for retaining wall.	11,166	62
1 contract for regulating, grading, paving, etc.	12,447	23
28 contracts for regulating, grading, etc.	335,868	01
1 contract for regulating sidewalks.	3,206	72
1 contract for curbing.	471	54
2 contracts for curb and flagging.	3,824	66
29 contracts for flagging.	26,619	80
25 contracts for fencing vacant lots.	9,291	61
89 contracts.	Total.	\$424,545 58

Statement showing Works under Contract in Bureau of Street Improvements on the 31st day of December, 1888.

LOCATION OF WORK.	CONTRACTOR.	SURVEYOR.	INSPECTOR.	CONTRACT TIME.	ESTIMATED COST.	AMOUNT EARNED.	AMOUNT RETAINED.	AMOUNT PAID.	REMARKS.
<i>Regulating, Grading, Curb, Flagging and Retaining Walls.</i>									
<i>Local Improvement Fund—</i>									
Fort Washington Ridge road.	Allen & O'Maley.	J. McI. Smith.	James R. Mount.	400 days.	\$130,161 70	\$161,224 00	\$48,367 20	\$112,856 80	{ Work completed, but not yet accepted.
<i>Street Improvement Fund—</i>									
Kingsbridge road, One Hundred and Ninetieth street to Harlem river.	B. F. Coleman.	J. McI. Smith.	William J. Girvan.	300 "	204,990 00	46,905 00	14,071 50	32,833 50	
Edgecombe avenue, One Hundred and Forty-fifth street to St. Nicholas place.	John F. Dawson.	J. McI. Smith.	Leander Buck.	300 "	86,826 06	124,965 25	37,489 57	87,475 68	
First new avenue, One Hundred and Forty-fifth to One Hundred and Fifty-fifth street.	William J. Kelly.	J. McI. Smith.	Charles Myers.	500 "	55,120 00	38,728 00	11,618 40	27,109 60	
Twelfth avenue, One Hundred and Thirty-third to One Hundred and Thirty-fifth street.	M. Fortunato.	Frank E. Towle.	P. Mooney.	250 "	7,587 20				
Forty-ninth street, First avenue to Beekman place.	John J. Rogers.	James R. Wardlaw.	Patrick Kelly.	90 "	13,774 10	11,290 60	3,387 18	7,903 40	
Eighty-seventh street, West End avenue to Riverside Drive.	John B. Devlin.	W. H. McDonough.	Theodore Pratt.	60 "	6,249 10	3,107 00	933 10	2,174 50	
Eighty-ninth street, Tenth avenue to Boulevard.	J. Slattery.	W. H. McDonough.	B. V. Fraser.	50 "	3,812 51				{ Work completed, but not yet accepted.
Ninetieth street, Tenth avenue to Riverside Drive, etc.	F. Del Genovese.	Frank E. Towle.	G. Stebbins.	30 "	2,182 00				
Ninety first street, Ninth to Tenth avenue.	M. Fortunato.	Richard Amerman.	P. C. McGuire.	100 "	13,292 10				
Ninety-second street, Boulevard to Riverside Drive.	J. J. Farley.	W. H. McDonough.	R. V. Davis.	300 "	40,018 36	12,775 00	3,832 50	8,942 50	
One Hundred and Sixth street, Boulevard to Riverside Drive.	J. Cahill.	Robert L. Waters.	William F. Gannon.	150 "	22,360 35	1,600 00	480 00	1,120 00	
One Hundred and Seventh street, West End avenue to Riverside Drive.	P. McInerney.	Frank E. Towle.	J. W. Keogh.	100 "	5,692 40				
One Hundred and Ninth street, Eighth to Manhattan avenue.	J. J. Farley.	Thomas Slator.	James McShane.	40 "	4,084 08				
One Hundred and Fifteenth street, Second to Third avenue.	W. H. Hornidge.	W. H. McDonough.	Dennis O'Connor.	5 "	948 38				{ Work completed, but not yet accepted.
One Hundred and Seventeenth street, Eighth to Ninth avenue.	A. E. Moran.	M. A. Lacy.	B. Martin.	60 "	4,240 09				{ Work completed, but not yet accepted.
One Hundred and Eighteenth street, Seventh to Eighth avenue.	A. E. Moran.	James R. Wardlaw.	P. C. McGuire.	5 "	1,911 49				{ Work completed, but not yet accepted.
One Hundred and Twenty-fourth street, Ninth to Tenth avenue.	John Phelan.	M. A. Lacy.	Mark Neary.	150 "	3,850 28				{ Work completed, but not yet accepted.
One Hundred and Twenty-fifth street, south side, Second to Third avenue.	W. H. Hornidge.	W. H. McDonough.	Dennis O'Connor.	5 "	838 97				{ Work completed, but not yet accepted.
One Hundred and Fortieth street, Tenth avenue to Boulevard.	M. Fortunato.	W. H. McDonough.	John Lawrence.	100 "	8,728 95				
One Hundred and Forty-seventh street, Tenth avenue to Boulevard.	M. Fortunato.	M. A. Lacy.	N. Frank.	150 "	15,576 52				
One Hundred and Forty-ninth street, Eighth to New avenue.	William J. Kelly.	Frank E. Towle.	Thomas P. Moore.	100 "	4,144 00				{ Work completed, but not yet accepted.
One Hundred and Seventieth street, Tenth to Eleventh avenue.	Newell & Freleigh.	M. A. Lacy.	E. C. Brady.	130 "	9,278 28				
<i>Special Contracts.</i>									
<i>Regulating, Grading, Curb and Flagging—</i>									
East side Lenox avenue, One Hundred and Forty-third to One Hundred and Forty-sixth street.	P. H. Kerwin.	Frank E. Towle.		10 "	50 08				
West side Park avenue, One Hundred and Thirteenth to One Hundred and Fourteenth street.	P. H. Kerwin.	Robert L. Waters.		10 "	230 67				
West side Eighth avenue, One Hundred and Twelfth to One Hundred and Thirteenth street.	P. H. Kerwin.	G. M. Root.		10 "	131 29				
Northeast corner Seventh avenue and One Hundred and Twenty-first street.	P. H. Kerwin.	R. Amerman.		10 "	152 00				{ Work completed, but not yet accepted.
South side Eighty-third street, Ninth to Tenth avenue.	P. H. Kerwin.	W. H. Bostwick.		10 "	685 76				
One Hundred and Sixteenth street, Second to Third avenue.	P. H. Kerwin.	W. H. Bostwick.		10 "	647 08				{ Work completed, but not yet accepted.
North side One Hundred and Twenty-first street, Lenox to Seventh avenue.	P. H. Kerwin.	Robert L. Waters.		10 "	297 60				
One Hundred and Thirtieth street, Eighth to St. Nicholas avenue.	P. H. Kerwin.	Thomas Slator.		10 "	311 01				{ Work completed, but not yet accepted.
<i>Fencing Vacant Lots—</i>									
One Hundred and Seventh and One Hundred and Eighth streets, Eighth to Manhattan avenue.	Bernard A. Roth.	Robert L. Waters.		10 "	592 00				
<i>Flagging Sidewalks and Fencing Vacant Lots in front of City Property.</i>									
<i>Curb and Flagging—</i>									
Centre, Broome, Centre Market place and Grand streets.	W. H. Hornidge.	Charles H. Ball.		8 "	1,114 25				
Totals.					\$649,878 66	\$400,594 85	\$120,178 45	\$280,416 38	

Document "H."
REPORT OF THE SUPERINTENDENT OF STREETS.

DEPARTMENT OF PUBLIC WORKS,
BUREAU OF STREETS AND ROADS, ROOM 12, NO. 31 CHAMBERS STREET,
NEW YORK, January 8, 1889.

D. LOWBER SMITH, Esq., *Commissioner of Public Works*:

SIR—In compliance with your instructions, I have the honor to submit the following report of work done and material used; also, the amount expended from the various appropriations under the charge of this Bureau for the quarter ending December 31, 1888, with a synopsis of the work done during the year, the expense of which were defrayed from the appropriations for "Boulevards, Roads and Avenues—Maintenance of," and "Roads, Streets and Avenues Unpaved—Maintenance of and Sprinkling," etc. The general condition of the macadamized roadways has been very much improved during the year 1888; most of them are in very fair condition. The same may be said of the unpaved roads, streets and avenues, also the country roads. A detailed statement of the work done during the quarter ending December 31 and the year is herewith attached. The report is herewith submitted for your consideration.

Respectfully,

GEORGE E. BABCOCK, Superintendent of Streets.

The following statement shows the amount of work done on boulevards, roads and avenues during the quarter ending December 31, 1888:

Roadway and gutters cleaned.....	278,578 square yards.
Gutters cleaned.....	22,989 "
Macadam roadway repaired.....	6,450 "
Roadway covered with sand.....	15,410 "
Roadway resurfaced with gravel.....	33,217 "
Macadam roadway resurfaced.....	7,288 "
Gutters repaved.....	576 "
Roadway repaired with gravel.....	945 "
Flagging relaid.....	1,176 square feet.
Bridge-stone reset.....	1,276 "
Curb reset.....	572 lineal feet.
Pipe drain cleaned.....	632 "
Basins cleaned.....	111 "
Trees cultivated.....	532 "
Trees replanted.....	70 "
Dead trees removed.....	30 "
Roadway covered with limestone.....	4,655 square yards.
Re-repairs over sewer connections.....	99 "
Telford laid.....	60 "
Holes in sidewalks repaired.....	39 "
Basin connections cleaned.....	632 lineal feet.
Gutter-stone laid.....	30 "

The following material was used in making repairs on macadamized streets:

Broken stone.....	524 truck-loads.
Trap-rock screenings.....	162 "
Lime-stone screenings.....	81 "
Gravel-bank screenings.....	158 "
Telford.....	28 "
Roa Hook gravel.....	1,223 "
Dirt.....	92 "
Gneiss stone.....	4 "
Sand.....	114 "
Paving-blocks.....	270 "

The above account does not include any material delivered directly on the work by contractors.

The following material was removed in cleaning the macadamized streets:

Dirt from roadway.....	4,257 truck-loads.
Stone.....	38 "
Leaves.....	49 "
Basin dirt.....	42 "

The following material was delivered on board the Street Cleaning Department scows:

Seventieth street and East river.....	162 truck-loads.
Eightieth street and East river.....	360 "
One Hundred and Tenth street and East river.....	121 "

Total..... 643 truck-loads.

Repairs were made to fifty dangerous holes on sidewalks on macadamized streets.

Repairs were made to dangerous places on the following streets:

One Hundred and Nineteenth street, between Fifth and Sixth avenues.
One Hundred and Twentieth street, between Seventh and St. Nicholas avenues.
One Hundred and Seventeenth street, between Sixth and Seventh avenues.
One Hundred and Nineteenth street, between Sixth and Seventh avenues.
One Hundred and Twelfth street, between Seventh and Eighth avenues.
One Hundred and Seventeenth street, between Fifth and Sixth avenues.
One Hundred and Forty-first street, between St. Nicholas and Eighth avenues.
One Hundred and Fifty-first street, between St. Nicholas and Tenth avenues.
Edgecombe avenue, between One Hundred and Fortieth and One Hundred and Forty-first streets.

Seventy-eighth street, between Boulevard and West End avenue.
Eighty-eighth street, between Boulevard and Tenth avenue.
Ninety-fourth street, west of Boulevard.
Eighty-seventh street, between Tenth avenue and Boulevard.
Coogan avenue, south of One Hundred and Forty-fifth street.
Ninety-fourth street, between Boulevard and Tenth avenue.
Tenth avenue, between One Hundred and Forty-ninth and One Hundred and Fiftieth streets.
One Hundred and Fifty-sixth street, between Tenth and Eleventh avenues.
Tenth avenue, between One Hundred and Twenty-third and One Hundred and Twenty-fourth streets.

Eleventh avenue, between One Hundred and Seventy-fourth and One Hundred and Seventy-fifth streets.

Westerly sidewalk of Kingsbridge road, between One Hundred and Seventy-fourth street and Fort Washington Depot lane.

There were used in making above repairs 836 truck-loads of sweepings.

6 water and 9 sewer connections have been repaved during the quarter.

For this purpose the following material was used:

Telford.....	45 cart-loads.
Trap-rock screenings.....	11 "
Gneiss spalls.....	7 "
Sand.....	2 "
Broken stone.....	12 "
Dirt removed.....	10 "
Flagging relaid.....	180 square feet.
Curb reset.....	16 lineal feet.

All of the macadamized streets have been sprinkled during the quarter. There were used for this purpose 6,131 barrels, or loads, equivalent to 3,607,600 barrels of water.

The following is the amount of work done on unpaved streets during the quarter ending December 31, 1888:

Regraded and Gutters Opened.

Ninety-ninth street, between Fourth and Fifth avenues.
Ninety-eighth street, between Ninth and Tenth avenues.
One Hundred and Fifth street, between Fourth and Madison avenues.
Eighty-eighth street, between Boulevard and West End avenue.
One Hundred and Fourteenth street, between Sixth and Seventh avenues.
One Hundred and Fifteenth street, between Sixth and St. Nicholas avenues.
West End avenue, between Seventy-eighth street and Boulevard, at One Hundred and Seventh street.

Ninety-fourth street, between Boulevard and West End avenue.
Eighty-eighth street, between Fourth and Fifth avenues.
Eleventh avenue, north of One Hundred and Ninetieth street.
One Hundredth street, between Tenth and West End avenues.
Fourth avenue, west side, between Ninety-sixth and One Hundredth streets.
One Hundred and Fifty-second street, between summit west of Boulevard and Hudson River Railroad.
Ninety-ninth street, between Ninth and West End avenues.

One Hundredth street, between Fourth and Madison avenues.
Ninety-ninth street, between Fourth and Fifth avenues.
One Hundred and Sixth street, between Manhattan and Tenth avenues.
Eighty-seventh street, between Eighth and Ninth avenues.
Ninety-eighth street, between Fourth and Fifth avenues.

Repairs have been made to dangerous places in the following streets:

Eleventh avenue and One Hundred and Seventy-fifth street.
Madison avenue and Ninety-eighth street.
Fort George road, between Tenth and Eleventh avenues.
One Hundred and Fifty-eighth street, near Eleventh avenue.
One Hundred and Forty-third street and Coogan avenue.
Ninety-seventh street, near West End avenue.
One Hundred and Fiftieth street, between St. Nicholas and Tenth avenues.
One Hundred and Fifty-seventh street, between Tenth and Eleventh avenues.
French Boulevard, between One Hundred and Fifty-eighth street and Fort Washington depot lane.

Pleasant avenue and One Hundred and Sixteenth street.

Eleventh avenue and One Hundred and Eighty-seventh street.

One Hundred and Twelfth street, near Seventh avenue.

West One Hundred and Third street.

Edgecombe avenue and One Hundred and Forty-second street.

Ninety-eighth street, between Eighth and Ninth avenues.

Ninety-eighth street, between Boulevard and Riverside Drive.

One Hundred and Twenty-fifth street, between Ninth and Tenth avenues.

One Hundred and First street, between Ninth and Tenth avenues.

Eleventh avenue, between Kingsbridge road and One Hundred and Seventy-fifth street.

The following statement shows the amount of work done on roads, streets and avenues, unpaved, not including the streets regraded and repaired:

Limestone screenings spread.....	18,776 square yards.
Macadamized with gneiss rock.....	333 "
Stone culvert built.....	116 lineal feet.
Drain-pipe laid.....	136 "
Stone drain repaired.....	180 "
Stone drain cleaned.....	500 "
Curb reset.....	850 "
Flagging relaid.....	1,600 square feet.
Bridge-stone laid.....	56 "
Flagging removed.....	2,662 "

The following material was used in making the above repairs:

Limestone screenings.....	523 truck loads.
Building stone.....	138 "
Earth.....	3,323 "
Stone for breaking.....	79 "
Stone.....	914 "

The following surplus material was removed:

Dirt.....	547 truck loads.
Stone.....	7 "

Work Done by Contract.

The following crosswalks have been laid on macadamized and unpaved streets, the cost of which will be assessed on the property benefited:

Manhattan street, west side of Manhattan avenue.
Boulevard, south side of Sixty-fifth street.
Boulevard, south side of Seventy-fifth street.
Boulevard, south side of Seventy-ninth street.
One Hundred and Twenty-eighth street, east side of Second avenue.
One Hundred and Fiftieth street, east side of Tenth avenue.
St. Nicholas avenue, south side of One Hundred and Fifty-fifth street.
Boulevard, south side of Seventy-sixth street.
Sixth and Seventh avenues, north and south sides of One Hundred and Thirty-sixth street.
Boulevard, south side of Eighty-first street.
Avenue A, south side of Eighty-fourth street.
Avenue A, south side of Eightieth street.
First avenue, south side of One Hundred and Fifteenth street.
First avenue, north and south sides of One Hundred and Fourteenth street.
Boulevard, north side of Sixty-seventh street.
Fifty-ninth street, east side of Avenue A.
Pleasant avenue, north and south sides of One Hundred and Twenty-second street.
Seventh avenue, north and south sides of One Hundred and Twenty-second street.
Seventh avenue, north and south sides of One Hundred and Thirty-fifth street.
One Hundred and Twenty-third street, east side of Seventh avenue.
One Hundred and Twenty-fourth street, east side of Seventh avenue.
St. Nicholas avenue, north side of One Hundred and Twenty-fourth street.
Boulevard, north side of Eighty-second street.
St. Nicholas avenue, north side of One Hundred and Twenty-eighth street.
Boulevard, north side of Eighty-third street.
Boulevard, north and south sides of One Hundred and Twenty-ninth street.

The following work was done by contract, the expense of which was paid from the appropriation for "Boulevards, Roads and Avenues—Maintenance of":

Rebuilding retaining-wall on west side of Western Boulevard, between One Hundred and Forty-ninth and One Hundred and Fiftieth streets.

Stone-wall.....	220 cubic yards.
Earth excavation.....	192 "
Earth filling.....	90 "
Flagging relaid.....	340 square feet.

By contract, paid from the appropriation, "Roads, Streets and Avenues, Unpaved—Maintenance of, etc.":

Picket fence..... 316 lineal feet.

Erected on north side of foot-path in One Hundred and Fifty-fifth street, between Coogan avenue and St. Nicholas place.

The following statement shows the amount of work done on macadamized roads, streets and avenues, during the year ending December 31, 1888:

Roadway and gutters cleaned.....	2,017,835 square yards.
Gutters cleaned.....	133,453 "
Macadam pavement repaired.....	92,432 "
Roadway covered with gravel bank screenings.....	248,926 "
Roadway covered with sand.....	88,273 "
Roadway covered with trap-rock screenings.....	108 "
Roadway resurfaced with gravel.....	36,348 "
Gravel and rubble pavement repaved over basin connections.....	321 "
Macadam resurfaced.....	14,469 "
Roadway repaved with gravel.....	945 "
Roadway covered with limestone screenings.....	4,655 "
Stone drains cleaned and repaired.....	322 lineal feet.
Pipe drain cleaned.....	632 "
Curb stone reset.....	792 "
Sidewalk drain opened.....	976 "
Basin drain cleaned.....	1,154 "
Flagging relaid.....	6,556 square feet.
Bridge-stone relaid.....	1,869 "
Gutters repaved.....	3,911 "
Basins cleaned.....	552 "
Trees trimmed.....	1,362 "
Trees cultivated.....	879 "
Trees replanted.....	70 "
Dead trees removed.....	30 "
Trees replanted by contract.....	47 "
Retaining-wall built.....	20 cubic yards.

The following statement shows the amount of material used on macadamized streets in making the necessary repairs during the year, but does not include any material delivered on the work by contractors:

Broken stone.....	1,887 truck-loads.
Sand.....	217 "
Gravel-bank screenings.....	1,386 "
Trap-rock screenings.....	705 "
Gravel.....	1,540 "
Dirt.....	206 "
Telford stone.....	82 "
Broken gneiss stone.....	12 "

The following statement will show the number of new gas-lamps fitted up, lamp-posts removed, reset, straightened, etc., during the year:

BY WHAT GAS COMPANY.	NEW LAMPS FITTED UP.	LAMP-POSTS REMOVED.	LAMP-POSTS RESET.	LAMP-POSTS STRAIGHTENED.	COLUMNS REFITTED.	COLUMNS RELEASED.
Consolidated Gas Co., Branch 1	12	41	68	190	27	311
Consolidated Gas Co., Branch 2	17	42	45	54	9	76
Consolidated Gas Co., Branch 3	25	8	21	142	5	51
Consolidated Gas Co., Branch 4	181	53	69	135	8	60
Consolidated Gas Co., Branch 6	228	69	123	181	22	35
New York Mutual Gas-light Co.	....	5	3	12	4	7
Equitable Gas-light Co.	....	6	10	131	5	64
Central Gas-light Co.	118	96	92	212	2	5
Northern Gas-light Co.	216	56	70	201	....	12
Yonkers Gas-light Co.	21	....	1	8	....	1
N. Y. & N. J. Globe Gas-light Co.	....	....	1	6	....	....
Totals	818	376	503	1,272	82	622

The following table will show the number of new lamps lighted by the several gas and electric-light companies in each of the years, from 1881 to 1888, both inclusive:

BY WHAT COMPANY.	NEW LAMPS LIGHTED IN—							
	1881.	1882.	1883.	1884.	1885.	1886.	1887.	1888.
Consolidated Gas Co., Branch 1	26	31	17	18	23	19	26	12
Consolidated Gas Co., Branch 2	41	67	53	22	50	27	20	17
Consolidated Gas Co., Branch 3	....	....	....	....	....	11	44	26
Consolidated Gas Co., Branch 4	126	146	156	67	159	62	264	181
Consolidated Gas Co., Branch 6	99	219	255	308	312	342	332	230
New York Mutual Gas-light Co.	....	3	....	5	....	....	1	....
Equitable Gas-light Co.	....	....	....	....	7	14	5	....
Central Gas-light Co.	65	105	75	134	74	103	89	118
Northern Gas-light Co.	67	102	124	109	173	72	145	216
Yonkers Gas-light Co.	14	187	36	2	10	2	91	21
N. Y. & N. J. Globe Gas-light Co.	....	....	....	....	50	70	....	....
Totals	438	860	716	566	863	720	1,017	821
Brush Electric Illuminating Co.	....	32	....	292	....	1	30	13
United States Illuminating Co.	....	73	....	227	61	2	....	45
Harlem Lighting Co.	....	....	....	....	....	....	95	12
North New York Lighting Co.	....	....	....	....	....	....	26	....
Mount Morris Electric-light Co.	....	....	....	....	....	....	....	18
East River Electric-light Co.	....	....	....	....	....	....	....	408
Totals	....	105	....	519	61	3	151	496

The following statement will show the average number of lamps lighted under the supervision of the Bureau of Lamps and Gas, in each of the years from 1881 to 1888, both inclusive:

BY WHAT COMPANY.	AVERAGE NUMBER OF LAMPS LIGHTED IN—							
	1881.	1882.	1883.	1884.	1885.	1886.	1887.	1888.
Consolidated Gas Co., Branch 1	3,565	3,461	3,369	3,046	3,450	3,865	3,863	3,199
Consolidated Gas Co., Branch 2	6,667	6,495	6,477	6,053	4,456	3,239	2,593	1,912
Consolidated Gas Co., Branch 3	....	....	....	....	....	1,122	3,152	2,463
Consolidated Gas Co., Branch 4	4,349	4,529	4,658	4,504	4,172	3,719	2,725	3,063
Consolidated Gas Co., Branch 6	4,774	4,950	5,157	5,422	5,767	5,787	5,640	5,535
New York Mutual Gas-light Co.	986	826	768	591	316	216	202	158
Equitable Gas-light Co.	....	....	....	....	1,411	1,586	1,853	1,925
Central Gas-light Co.	1,874	1,938	2,007	2,072	2,205	2,256	2,350	2,316
Northern Gas-light Co.	1,117	1,181	1,308	1,429	1,551	1,686	1,780	1,922
Yonkers Gas-light Co.	91	207	295	325	331	337	373	444
N. Y. & N. J. Globe Gas-light Co.	....	....	....	....	50	90	120	120
Brush Electric Illuminating Co.	55	55	55	246	347	347	343	366
United States Illuminating Co.	....	73	73	243	338	361	363	395
Harlem Lighting Co.	....	....	....	....	....	....	88	102
North New York Lighting Co.	....	....	....	....	....	....	26	26
Mount Morris Electric-light Co.	....	....	....	....	....	....	....	18
East River Electric-light Co.	....	....	....	....	....	....	....	379
Totals	23,478	23,715	24,167	23,931	24,394	24,611	25,471	24,343

New gas-mains have been laid by the several gas-light companies during the year, as follows:

	Feet.	In.
By Consolidated Gas Company	86,605	6
By New York Mutual Gas-light Company	....	....
By Equitable Gas-light Company	104,452	7
By Standard Gas-light Company	115,337	....
By Central Gas-light Company	8,281	....
By Northern Gas-light Company	11,260	....
By Yonkers Gas-light Company	1,238	....
Total laid in 1888	327,174	1

The Central Gas-light Company has sold and transferred to the Northern Gas-light Company 4,951 feet.

The total miles of gas-mains in the streets of this city on December 31, 1888 was as follows:

	Miles.	Feet.	In.
Consolidated Gas Company	754	4,284	3
New York Mutual Gas-light Company	122	1,173	....
Equitable Gas-light Company	112	2,258	1
Standard Gas-light Company	91	2,837	2
Central Gas-light Company	53	628	....
Northern Gas-light Company	33	4,151	....
Yonkers Gas-light Company	13	437	....
Total	1,180	5,208	6

Of these mains 1,080²²⁷/₈₀ miles are on Manhattan Island, and 99⁵¹¹/₈₀ are in the annexed territory north of Harlem river.

The Equitable Gas-light Company commenced the laying of gas-mains in the streets of this city in the month of May, 1883, and it now has of—

	Feet.	In.
Four-inch main	69,332	1
Six-inch main	327,354	5
Eight-inch main	63,061	2
Twelve-inch main	55,727	....
Sixteen-inch main	29,684	7
Twenty-inch main	28,074	7
Twenty-four-inch main	20,481	1
Total	593,714	11

And as it is compelled by its franchise to pay into the City Treasury at the rate of twenty cents for each linear foot of main laid, the sum amounts at the present time to \$118,742.80; and this is the only gas company that makes any compensation to the city for the privilege of laying gas-mains. It is also compelled to light all the public lamps on the lines of its mains at a rate not to exceed twelve dollars per year each lamp.

The Standard Gas-light Company commenced the laying of gas-mains in November, 1886, and it now has of—

	Feet.	In.
Four-inch main	105,505	5
Six-inch main	139,626	4
Eight-inch main	123,543	9
Ten-inch main	71,035	2
Twenty-inch main	38,382	10
Twenty-four-inch main	5,223	4
Total	483,316	10

And its franchise requires that it shall light all the public lamps on the lines of its mains at a rate not to exceed twelve dollars and fifty cents per year for each lamp. No public lamps, however, are lighted by this company.

Branch 1 of the Consolidated Gas Company (formerly the New York Gas-light Company) lights the public lamps and supplies gas in that part of the city lying south of the centre line of Houston street. Its gas-works are at Twenty-first street, East river; its manufacture is water-gas and its office is at the corner of Hester and Elizabeth streets.

Branch 2 (formerly the Manhattan Gas-light Company) lights the public lamps and supplies gas in that part of the city lying north of the centre line of Houston street and south of the centre line of Twenty-third street. It has two gas-works making coal-gas, one of which is at Fourteenth street, East river, and the other at Eighteenth street, North river, and its office is at No. 4 Irving place. The mains of this branch are connected with a main carrying water-gas, so that the illuminating power of the gas is increased when it reaches the consumer.

Branch 3 (formerly the Municipal Gas-light Company) lights the lamps and supplies gas in that part of the city lying north of the centre line of Twenty-third street, south of the centre line of Seventy-ninth street and east of Fifth avenue, including both sides thereof from Fifty-ninth to Seventy-ninth street. Its works are at Forty-fourth street, North river; the manufacture is water-gas and its office is at the corner of Fourth avenue and Twenty-sixth street.

Branch 4 (formerly the Metropolitan Gas-light Company) lights the public lamps and supplies gas in that part of the city lying north of the centre line of Twenty-third street, west of the centre line of Fifth avenue to Fifty-ninth street, and west of the westerly line of Fifth avenue, from Fifty-ninth to Seventy-ninth street; through Transverse road, No. 2 (Central Park), to Eighth avenue, and west of Eighth avenue to centre line of One Hundred and Tenth street, and thence to North river, including both sides of the Transverse road and both sides of Eighth avenue. Its works are at Forty-second street, North river; the manufacture is coal-gas, and its office is at Broadway and Forty-sixth street.

Branch 5 (formerly the Knickerbocker Gas-light Company) does not light any public lamps or furnish gas to consumers. Its works are at Ninety-ninth street, East river; the manufacture is water-gas, which is supplied to Branch 6.

Branch 6 (formerly the Harlem Gas-light Company) lights the public lamps and supplies gas to that part of the city lying north of the centre line of Seventy-ninth street and Transverse road No. 2 to Eighth avenue; thence northerly along Eighth avenue to the centre line of One Hundred and Tenth street; thence westerly along the centre line of One Hundred and Tenth street to the north river, excluding both sides of the Transverse road and both sides of Eighth avenue south of One Hundred and Tenth street. It manufactures coal-gas at One Hundred and Eleventh street, East river, and also furnishes the water-gas supplied by Branch 5. Its office is at One Hundred and Fourteenth street and Third avenue.

The main office of the Consolidated Gas Company is at Irving place and Fifteenth street. Its capital is \$39,070,000, and the capacity of its several gas-works is 28,000,000 cubic feet per day.

The New York Mutual Gas-light Company has mains in various streets or parts of streets between Battery place and Sixty-fifth street, and lights a few of the public lamps between Thirty-fourth and Sixty-fifth streets. It manufactures water-gas at the works on Eleventh street, East river, and its office is at Fourth avenue and Sixteenth street. The capital is \$3,500,000, and the capacity of its gas-works is 4,000,000 cubic feet per day.

The Equitable Gas-light Company has mains in various streets or parts of streets between Division street and Seventy-fourth street, and lights the public lamps on the lines of its mains which were laid prior to the execution of the present lamp contract, except on the streets lighted by electric-lights. Its works are at Forty-first street, East river; the manufacture is water-gas, and its office is at Third avenue and Twenty-fifth street. The capital is \$4,000,000, and the capacity of its works is 6,000,000 cubic feet per day.

The Standard Gas-light Company obtained its franchise to lay mains in the streets of this city direct from the State Legislature, by chapter 248 of the Laws of 1886. It now has mains in various streets between Fourteenth and One Hundred and Thirty-fifth streets, and between Avenue C and Eighth avenue. Its works are at One Hundred and Fifteenth street, East river, and its main office is at No. 2 Cortlandt street, with sub-offices at No. 19 West One Hundred and Twenty-fifth street and at southeast corner of Lexington avenue and Forty-second street. The manufacture is water-gas. Its capital is \$10,000,000, and the capacity of the above works is 2,500,000 cubic feet per day. It is now supplying gas to consumers. The company is now erecting a gas-holder at Thirty-second street, East river, to be completed by February 1, and another at Nineteenth street, East river, to be completed by April 1, next.

The Central Gas-light Company supplies gas to the Twenty-third Ward (formerly town of Morrisania), and lights all the public lamps therein, except those on the parts of two streets lighted by electric-lights. It manufactures coal-gas at its works at One Hundred and Thirty-eighth street, East river; and its office is at No. 350 Alexander avenue. The capital is \$487,400, and the capacity of its works is 700,000 cubic feet per day.

The Northern Gas-light Company supplies gas to that part of the Twenty-fourth Ward formerly town of West Farms, and lights all the public lamps therein. It manufactures coal-gas at its works on the Bronx river, and its office is at No. 1845 Fourth avenue. The capital is \$125,000, and the capacity of its works is 250,000 cubic feet per day.

The Yonkers Gas-light Company has mains in, lights the public lamps and supplies gas to, that part of the Twenty-fourth Ward formerly town of Kingsbridge, except in the section known as Woodlawn Heights. Its gas-works and office is at the City of Yonkers, Westchester County, and its manufacture is water-gas. This company has been leased to the United Gas Improvement Company, and its business is mostly confined to the City of Yonkers.

The New York and New Jersey Globe Gas-light Company, lights 120 lamps at the extreme northeasterly section of the city, called Woodlawn Heights, which is beyond the reach of gas-mains. The lamps are lighted by means of Naphtha contained in a tank or reservoir on each lamp.

The following additional streets have been lighted by gas during the year:

First avenue, west side, from Ninety-first to Ninety-third street.

Eleventh avenue, from Sixty-first to Sixty-second street.

Convent avenue, from One Hundred and Forty-first to One Hundred and Forty-third street.

Edgecombe avenue, from One Hundred and Forty-fifth street south.

Madison avenue, from One Hundred and Eighteenth to One Hundred and Nineteenth street.

Manhattan avenue, from One Hundred and Fifteenth to One Hundred and Sixteenth street.

Manhattan avenue, from One Hundred and Nineteenth to One Hundred and Twentieth street.

Park avenue, west side, from One Hundred and Eighteenth to One Hundred and Nineteenth street.

Park avenue, west side, from One Hundred and Twentieth to One Hundred and Twenty-second street.

West End avenue, from Eighty-seventh to Ninety-sixth street.
West End avenue, from Ninety-ninth to One Hundred and Fifth street.
Forty-third street, from First avenue to East river.
Forty-fourth street, from First avenue to East river.
Sixty-second street, from First avenue to Avenue A.
Sixty-second street, from Tenth to Eleventh avenue.
Sixty-fifth street, from Eleventh avenue, east 300 feet.
Sixty-sixth street, from Tenth to Eleventh avenue.
Sixty-seventh street, from Ninth avenue to the Boulevard.
Seventieth street, from West End avenue to Hudson River Railroad.
Seventy-fifth street, from Ninth to Tenth avenue.

Seventy-Seventh street, from Eighth to Ninth avenue.
Eighty-first street, from the Boulevard to West End avenue.
Eighty-second street, from Madison avenue to Fifth avenue.
Eighty-second street, from West End avenue to Riverside Drive.
Eighty-third street, from Avenue A to Avenue B.
Eighty-eighth street, from Eighth to Ninth avenue.
Eighty-eighth street, from Boulevard to Riverside Drive.
Eighty-ninth street, from Eighth avenue to Tenth avenue.
Ninetieth street, from Avenue A east 350 feet.
Ninetieth street, between West End avenue and Riverside Drive.
Ninety-third street, from First avenue west 200 feet.
Ninety-third street, from Park avenue to Madison avenue.
Ninety-fifth street, from Ninth avenue east 200 feet.
Ninety-seventh street, from the Boulevard to Riverside Drive.
Ninety-eighth street, from the Boulevard to West End avenue.
Ninety-ninth street, from Second avenue to East river.

One Hundredth street, from the Boulevard to West End avenue.
One Hundred and First street, from Park avenue to Lexington avenue.
One Hundred and Second street, from Second avenue to East river.
One Hundred and Third street, from Tenth avenue to Riverside Drive.
One Hundred and Fourth street, from First avenue to Avenue A.
One Hundred and Seventh street, from Tenth avenue to the Boulevard.
One Hundred and Eighth street, from the Boulevard to Riverside Drive.
One Hundred and Twelfth street, from Eighth to Manhattan avenue.
One Hundred and Thirteenth street, from Eighth to Manhattan avenue.
One Hundred and Thirteenth street, from the Boulevard west 150 feet.
One Hundred and Fourteenth street, from Park avenue to Madison avenue.
One Hundred and Twenty-first street, from Mount Morris avenue to Lenox avenue.
One Hundred and Twenty-sixth street, from Second avenue east 400 feet.
One Hundred and Thirty-seventh street, from Lenox avenue to Seventh avenue.
One Hundred and Forty-first street, from Seventh to Tenth avenue.
One Hundred and Forty-third street, from Eighth avenue east 400 feet.
One Hundred and Fiftyth street, from Avenue St. Nicholas to Tenth avenue.
One Hundred and Fifty-fifth street, from first new avenue west of Eighth avenue, to and on the stairs leading to St. Nicholas place.

Under the arches of Harlem Railroad (Fourth avenue) at One Hundred and Ninth and One Hundred and Eleventh streets.

The following streets in Twenty-third Ward :

One Hundred and Thirty-fourth street, from Brown place to Southern Boulevard.
One Hundred and Thirty-fifth street, from Brown place to St. Ann's avenue.
One Hundred and Thirty-seventh street, from Willis avenue to Brook avenue.
One Hundred and Fifty-third street, from Morris avenue to Railroad avenue.
Brook avenue, from One Hundred and Thirty-eighth to One Hundred and Forty-first street.
Home street, from Southern Boulevard to Union avenue.
Walton avenue, from One Hundred and Sixty-first to One Hundred and Sixty-fifth street.

The following streets in Twenty-fourth Ward :

Anthony avenue, from Ash street to Bush street.
Arthur avenue, from Kingsbridge road to Pelham avenue.
Ash street, from Morris avenue to Tremont avenue.
Bainbridge avenue, from Sherwood street to Williamsbridge road.
Bainbridge avenue, from One Hundred and Eighty-fourth to One Hundred and Eighty-seventh street.

Berry street, from Anthony avenue to Morris avenue.
Buckhout street, from Morris avenue, west 200 feet.
Cuthbert's lane, from Riverdale avenue to Bettner's lane.
Dock street, from Riverview Terrace to Commerce avenue.
Kirk place, from Morris avenue to Creston avenue.
Lorriland street, from Pelham avenue south 400 feet.
Lorriland place, from Third avenue to One Hundred and Eighty-eighth street.
Macomb's Dam road, from Featherbed lane to Kingsbridge road.
Morris avenue, from Bush to One Hundred and Eighty-third street.
Pelham avenue, from Broadway to Southern Boulevard.
Potter place, from Bainbridge avenue west 900 feet.
Powell place, from Riverview Terrace to New York City and Northern Railroad.
Riverview Terrace, from Sedgwick avenue to Powell place.
Sherwood street, from Marion avenue to Bainbridge avenue.
Summit street, from Briggs avenue to Carlin place.
Van Courtland avenue, from Broadway to New York City and Northern Railroad.
Washington avenue, from Warren avenue to Palisade avenue.
One Hundred and Eighty-fourth street, from Bainbridge avenue south, 200 feet.
One Hundred and Eighty-seventh street, from Webster avenue to Bainbridge avenue.

The aggregate length of the additional streets lighted during the year was 12.72 miles.

The total aggregate length of streets of the City lighted on December 31, 1888, was 489.484 miles.

The total length of piers lighted, was 1.99 miles.

The total length of bridges lighted was 1.88 miles.

The total area of parks lighted was 66 acres.

The total area of Gansevoort market square lighted was 3 1/4 acres.

Contracts for lighting the streets by gas for the year ending on April 30 next have been made, as shown in the following statement :

CONTRACTOR.	For Gas to and Light- ing, Extinguishing, etc., each Lamp, per annum.	For each Lamp-post Straightened.	For each Column Relocated.	For each Column Refitted.	For each Lamp-post Removed	For each Lamp-post Reset.	For each New Lamp Fitted up.
Consolidated Gas Co.....	\$17 50	\$1 50	\$1 50	\$3 50	\$3 50	\$8 00	\$8 00
New York Mutual Gas-light Co.....	17 50	1 50	1 50	3 50	3 50	8 00	8 00
Equitable Gas-light Co.....	12 00	1 50	1 50	3 50	3 50	10 00	10 00
Central Gas-light Co.....	28 00	1 50	1 50	3 50	3 50	8 00	8 00
Northern Gas light Co.....	29 00	1 50	1 50	3 00	3 50	8 00	8 00
Yonkers Gas-light Co.....	29 00	1 00	1 00	1 00	1 50	8 00	8 00
* New York and New Jersey Globe Gas-light Co.....	25 00	1 00	1 00	2 00	3 00	5 00	5 00

* Naphtha lamps.

The following streets are now lighted by electric-lights :

By United States Illuminating Company (United States System) :

	Lamps.
Barclay street, from Broadway to West street.....	7
Broadway, from Bowling Green to Thirteenth street.....	53
Bleeker street, from Bowery to Eighth avenue to Thirteenth street.....	34
Battery Park.....	20
Canal street, from Bowery to North river.....	26
Catharine street, from East Broadway to East river.....	7
Chambers street, from North river to East river.....	21
City Hall Park.....	13
Cortlandt street, from Broadway to North river.....	6

	Lamps.
East Broadway, from Chatham Square to Grand street.....	20
Fulton street, from East river to North river.....	17
Fifth avenue, from Washington Square to Thirteenth street.....	7
Gansevoort Market Square.....	13
Liberty street, from Broadway to North river.....	5
South street, from Whitehall to Grand street.....	64
Tompkin's Park.....	16
Washington Park.....	15
West street, from Battery Park to West Eleventh street.....	50
Whitehall street, from Bowling Green to South Ferry.....	6
Stuyvesant Park, west.....	8

Total (at 35 cents per night each)..... 408

By Brush Electric Illuminating Company (Brush System) :

	Lamps.
Broadway, from Fourteenth to Fifty-ninth street.....	47
Fourth avenue, from Fourteenth to Forty-second street.....	29
Fifth avenue, from Fourteenth to Fifty-ninth street.....	44
Fourteenth street, from North river to East river.....	41
Twenty-third street, from North river to East river.....	35
Thirty-fourth street, from North river to East river.....	36
Forty-second street, from North river to East river.....	36
Fifty-Ninth street, from Third to Ninth avenue.....	22
Madison Square Park.....	14
Union Square Park.....	9
Seventh avenue, from Fourteenth to Fifty-ninth street.....	43
Irving place, from Fourteenth to Twentieth street.....	6
Grand street, from Broadway to Sullivan street.....	5

Total (at 35 cents per night each)..... 367

By East River Electric-light Company (Thomson Houston System) :

	Lamps.
Park Row, from Ann street to Bowery.....	13
Bowery, from Park Row to Third avenue.....	28
Third avenue, from Bowery to Eighty-sixth street.....	76
Grand street, from Broadway to East river.....	28
Eighth avenue, from Fourteenth to Fifty-ninth street.....	41
Tenth avenue, from Fourteenth to Fifty-ninth street.....	42
Centre street, from Brooklyn Bridge to Broome street.....	15
Christopher street, from West street to Sixth avenue.....	12
Houston street, from Mulberry street to East river.....	23
Tenth street, from Second avenue to East river.....	12
Eighth street, from Sixth avenue to Cooper Union Square.....	8
Fourth avenue, from Bowery to Fourteenth street.....	9
Avenue B, from Houston to Fourteenth street.....	12
Avenue D, from Houston to Fourteenth street.....	12
First avenue, from Houston to Fourteenth street.....	13
West Broadway, from Chambers street to Canal street.....	10
South Fifth avenue, from Canal street to Washington Square.....	14
Stuyvesant street, from Eighth to Tenth street.....	3
Sixth avenue, from Canine to Thirty-third street.....	29
Stuyvesant Park, east.....	8

Total (at 35 cents per night each)..... 408

By Mount Morris Electric-light Company ("Schuyler System")—

Greenwich street, from Battery place to Chambers street, at 32 cents.....	18
---	----

By Harlem Lighting Company ("Fort Wayne-Jenny System")—

Third avenue, from Eighty-sixth to One Hundred and Thirtieth street.....	49
One Hundred and Twenty-fifth street, from East river to Manhattan street.....	29

At 35 cents.....	78
Mount Morris Park, at 50 cents.....	19
Harlem Bridge, at 60 cents.....	4

Total..... 101

By North New York Lighting Company ("Thomson-Houston System")—

Third avenue, from Harlem Bridge to Willis avenue.....	20
One Hundred and Thirty-eighth street, from Madison Avenue Bridge to Third avenue.....	6

Total (at 35 cents each per night)..... 26

Grand total..... 1,328

The total aggregate length of streets now lighted by electric-lights is 56.68 miles, and the total area of public parks and Gansevoort Market Square is 69 1/4 acres.

A contract has been made with the Equitable Gas-light Company for supplying illuminating gas, of not less than 28 candle-power, to the public buildings, markets and armories on the lines of its mains, for the year 1889, at \$1.25 per 1,000 cubic feet. Also one with the Consolidated Gas Company, for furnishing gas of not less than 18 candle-power to certain buildings, at \$1.25 per 1,000 cubic feet. The buildings to which gas is furnished through this Department are shown on Exhibit "A."

The following statement will show the average amount of impurities found in the gases of such of the gas companies as have mains on the line of our photometric stations, as determined by the analyses made by Dr. E. G. Love, Gas Examiner, in the laboratory of this Bureau :

OF WHAT COMPANY.	SULPHUR. (Grains in 100 cubic feet.)				AMMONIA. (Grains in 100 cubic feet.)				SULPHURET HYDROGEN.
	First Quarter.	Second Quarter.	Third Quarter.	Fourth Quarter.	First Quarter.	Second Quarter.	Third Quarter.	Fourth Quarter.	
Consolidated Gas Co., Branch 1.....	4.20	3.44	2.15	5.42	0.22	0.70	0.34	0.64	None.
Consolidated Gas Co., Branch 2.....	19.15	12.22	8.44	18.07	9.60	15.95	13.68	14.66	"
Consolidated Gas Co., Branch 3.....	4.87	5.39	3.96	2.61	0.29	0.94	0.51	0.18	"
Consolidated Gas Co., Branch 4.....	23.02	19.10	12.76	23.14	4.32	20.84	17.01	17.96	"
Consolidated Gas Co., Branch 6.....	10.82	4.22	3.57	6.79	0.97	1.98	0.56	3.27	"
New York Mutual Gas-light Co.....	7.83	6.44	4.36	6.90	0.29	0.66	0.34	0.07	Traces.
Equitable Gas-light Co.....	9.39	6.99	6.90	6.63	0.13	0.31	0.19	0.07	None.

The following table will show the specific gravity of the gases :

OF WHAT COMPANY.	FIRST QUARTER.	SECOND QUARTER.	THIRD QUARTER.	FOURTH QUARTER.
Consolidated Gas Co., Branch 1.....	.623	.637	.632	.639
Consolidated Gas Co., Branch 2.....	.431	.432	.451	.432
Consolidated Gas Co., Branch 3.....	.635	.643	.636	.664
Consolidated Gas Co., Branch 4.....	.509	.532	.495	.476
Consolidated Gas Co., Branch 6.....	.522	.605	.619	.614
New York Mutual Gas-light Co.....	.694	.698	.702	.737
Equitable Gas-light Co.....	.682	.724	.729	.736

The gases manufactured by the several companies are of the following kinds :
Consolidated Gas Co., Branch 1, water-gas, "Tessie du Motay" process.
Consolidated Gas Co., Branch 2, coal-gas mixed with "Tessie du Motay" water-gas.
Consolidated Gas Co., Branch 3, water-gas, "Tessie du Motay" process.
Consolidated Gas Co., Branch 4, coal-gas.
Consolidated Gas Co., Branch 6, water-gas, "Tessie du Motay" process and coal-gas.
New York Mutual Gas-light Co., water-gas, "Wilkinson's" process.
Equitable Gas-light Co., water-gas, "Jerzmanowski" process.
Central Gas-light Co., coal-gas.
Northern Gas-light Co., coal-gas.
Yonkers Gas-light Co., water-gas, "Saulsbury" process.
Standard Gas-light Co., water-gas, "Flannery" process.

The following statement will show the average maximum and minimum pressure on the mains of such of the companies as connect with our photometric stations, as recorded on the pressure registers during the year; the average being made for the times during which the public lamps are required to be kept lighted :

OF WHAT COMPANY.	AVERAGE MAXIMUM.				AVERAGE MINIMUM.			
	First Quarter.	Second Quarter.	Third Quarter.	Fourth Quarter.	First Quarter.	Second Quarter.	Third Quarter.	Fourth Quarter.
	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.
Consolidated Gas Co., Branch 1.....	2.16	1.64	1.49	1.85	1.67	1.52	1.39	1.37
Consolidated Gas Co., Branch 2.....	2.62	2.37	1.78	2.31	1.63	1.42	1.26	1.12
Consolidated Gas Co., Branch 3.....	2.39	2.25	2.07	2.34	1.35	1.36	1.25	0.93
Consolidated Gas Co., Branch 4.....	1.85	1.64	1.51	1.90	0.96	0.83	0.97	0.97
Consolidated Gas Co., Branch 6.....	2.70	2.43	2.72	2.79	1.14	1.04	1.30	1.44
New York Mutual Gas-light Co.....	3.19	2.72	2.46	3.61	1.88	1.93	1.85	1.60
Equitable Gas-light Co.....	2.17	2.22	2.20	2.17	1.32	1.32	1.40	1.13

In order that a comparison may be shown of the relative cost of lighting the streets by electric-lights and by gas I submit the following :

Statement showing the Streets and Public Places now Lighted by Electric-lights, with the number of such Lights and Annual Cost of same; also, the number of Gas-lamps Displaced by the Electric-lights and Annual Cost of the Gas-lamps :

STREETS AND PUBLIC PLACES NOW LIGHTED.				
	Number of lamps.	Aggregate Cost of same per year.	Number of Gas-lamps Displaced.	Aggregate Cost of same per year.
Avenue B, from Houston to Fourteenth street	12	\$1,533 00	59	\$994 00
Avenue D, from Houston to Fourteenth street.....	12	1,533 00	50	875 00
First avenue, from Houston to Fourteenth street.....	13	1,660 75	75	955 00
Third avenue, from Bowery to Harlem Bridge.....	125	15,968 75	644	10,054 50
Third avenue, from Harlem Bridge to Willis avenue	20	2,555 00	95	2,660 00
Fourth avenue, from Bowery to Forty-second street.....	38	4,854 50	209	3,613 50
Fifth avenue, from Washington square to Fifty-ninth street.....	51	6,515 25	289	5,057 50
Sixth avenue, from Carmine street to Thirty-third street.....	29	3,704 75	130	1,642 50
Seventh avenue, from Fourteenth to Fifty-ninth street.....	43	5,493 25	220	3,850 00
Eighth avenue, from Fourteenth to Fifty-ninth street.....	41	5,237 75	250	3,385 00
Tenth avenue, from Fourteenth to Fifty-ninth street.....	42	5,360 50	256	4,469 00
Fourteenth street, from North to East river.....	41	5,237 75	166	2,905 00
Eighth street, from Sixth avenue to Cooper Union.....	8	1,022 00	26	339 50
Tenth street, from Second avenue to East river	12	1,533 00	37	614 50
Twenty-third street, from North to East river.....	35	4,471 25	119	2,082 50
Thirty-fourth street, from North to East river.....	36	4,599 00	108	1,890 00
Forty-second street, from North to East river.....	36	4,599 00	145	2,537 50
Fifty-ninth street, from Third to Ninth avenue	22	2,810 50	87	1,522 50
One Hundred and Twenty-fifth street, from East river to Ninth avenue	29	3,704 75	151	2,642 50
One Hundred and Thirty-eighth street, from Third avenue to Madison Avenue Bridge.....	6	766 50	35	980 00
Barclay street, from Broadway to North river.....	7	894 25	22	385 00
Battery Park	20	2,555 00	93	1,627 50
Bleecker street, from Bowery to Thirteenth street.....	34	4,343 50	157	2,747 50
Bowery, from Park Row to Third avenue.....	28	3,577 00	102	1,356 00
Broadway, from Battery place to Fifty-ninth street.....	100	12,775 00	556	9,730 00
Canal street, from Bowery to North river.....	26	3,321 50	110	1,925 00
Catharine street, from East Broadway to East river	7	894 25	33	577 50
Centre street, from Brooklyn Bridge to Broome street.....	15	1,916 25	60	1,050 00
Chambers street, from North to East river	21	2,682 75	88	1,540 00
Christopher street, from West street to Sixth avenue.....	12	1,533 00	49	857 50
City Hall Park.....	13	1,660 75	98	1,715 00
Cortlandt street, from Broadway to North river.....	6	766 50	21	367 50
East Broadway, from Chatham Square to Grand street	20	2,555 00	100	1,750 00
Fulton street, from North to East river	17	2,171 75	56	980 00
Gansevoort Market Square.....	13	1,660 75	90	1,575 00
Greenwich street, from Battery place to Chambers street.....	18	2,102 40	74	1,295 00
Grand street, from East river to Sullivan street.....	33	4,215 75	220	3,657 50
Harlem Bridge fixed spans	4	876 00	12	273 00
Houston street, from East river to Mulberry street	23	2,938 25	118	1,982 50
Irving place, from Fourteenth to Twentieth street.....	6	766 50	22	346 50
Liberty street, from Broadway to North river.....	5	638 75	14	245 00
Madison Park.....	14	1,788 50	137	2,397 50
Mount Morris Park	19	3,467 50	....	.....
Park Row, from Ann street to Bowery.....	13	1,660 75	62	1,085 00
South street, from Whitehall to Grand street	64	8,176 00	229	4,007 50
South Fifth avenue, from Canal to Washington Square.....	14	1,788 50	61	1,051 00
Stuyvesant Park, west.....	8	1,022 00	13	216 50

STREETS AND PUBLIC PLACES NOW LIGHTED.

	Number of Electric-lamps.	Aggregate Cost of same per year.	Number of Gas-lamps Displaced.	Aggregate Cost of same per year.
Stuyvesant Park, east.....	8	\$1,022 00	10	\$147 50
Stuyvesant street, from Eighth to Tenth street.....	3	383 25	15	262 50
Tompkins' Park.....	16	2,044 00	161	2,817 50
Union Park.....	9	1,149 75	66	1,155 00
Washington Park.....	15	1,916 25	129	2,257 50
West street, from Battery place to West Eleventh street.....	50	6,387 50	244	4,270 00
West Broadway, from Chambers to Canal street.....	10	1,277 50	60	1,050 00
Whitehall street, from Bowling Green to South Ferry.....	6	766 50	32	560 00
Total.....	1,328	\$170,860 15	6,465	\$110,330 50

For the purpose of securing a uniformity of method by the several electric-light companies in the setting of electric lamp-posts, etc., the following instructions were issued to each of the companies lighting the city :

SIR—The following instructions relative to the establishment and maintenance of electric-lamps for lighting the streets, etc., of this city, having been approved by the Commissioner of Public Works, are hereby issued for your information and guidance :

Location of Lamps—One lamp is to be placed at each street intersection, and where the blocks are of such length that the intersections are more than 300 feet apart, intermediate lamps shall be placed alternately on either side of the street to be lighted.

Height of Lamp-posts—Lamp-posts shall be of a uniform height of twenty feet, except on streets occupied by the elevated railroads, where shorter posts are to be used as may be directed.

Setting Lamp-posts—The posts are to be set as near the curb-line as possible without injuring the curbing or exposing the posts to risk of injury from passing vehicles. They must be set at the outer angle of the walk opposite the corner of the building line wherever practicable. In case the post cannot be so placed it must be set near the corner as possible without obstructing the crossing, the intention being to throw the light on the intersecting street as well as upon the main street.

In setting posts the sidewalk must be disturbed as little as possible, flagging must be cut to fit closely about the base of the post, and never roughly broken. In case of concrete walks new concrete of proper quality shall be used to fill in about the post after it is set, and in all cases the walk shall be smoothly and properly finished off.

Position of Hood Frames—The lamp and hood frames must be set truly perpendicular to the curb-line of the street along which the line of poles runs. When, on account of neighboring poles or other obstructions, a better effect would be produced by placing the frames parallel to the curb, they will be so placed. In particular cases calling for any other position the contractor will be given special directions.

Painting—All poles, hoods and supports shall be painted a dark olive green of uniform shade. The inside of hoods shall be painted white.

The above instructions are to be regarded as general, exceptions and modifications to be made only as particular circumstances may require, and in all special cases application for directions must be made to the Superintendent of Lamps and Gas.

Yours respectfully,

S. McCORMICK, Superintendent of Lamps and Gas.

The Department of Public Parks having ordered that the two Stuyvesant Parks should be kept open to the public at night, a special arrangement was made with the United States Illuminating Company for lighting the westerly park, and with the East River Electric-light Company for lighting the easterly park until December 31. On an examination of these parks, lately made by me, I found that no persons visit them during the winter nights; and as they are not thoroughfares and as the appropriation for the year 1889 is somewhat limited, I have, with your approval, ordered the lighting to be discontinued during the winter, but the lamps will be relighted when the spring season opens.

Frequent complaints were received that the draw-span of the Harlem river bridge (Third avenue) was not kept properly lighted, the extinguishment being caused by interruptions to the conductor leading from the cable under the river to the turn-table of the draw. The Superintendent of Parks also reported that there might be possible danger to the bridge-keepers, while under the bridge for oiling the machinery, by coming in contact with the wires when charged with the electric current. And the steamboat pilots having strenuously complained that the electric-lights very seriously interfered with the safe passage of vessels through the bridge, it was deemed best to discontinue the lighting of the draw-span by electric-lights, and hence, this part of the bridge is now lighted by gas. The two fixed spans, however, are lighted by electric-lights.

Twelve electric-lamps have been fitted up over the roadways of the New West Washington Market, and are ready for lighting when the market is opened for business, which is expected to take place on the 26th instant.

The new bridge, lately erected over the Harlem river, opposite One Hundred and Eighty-first street, by the special Bridge Commission, is so far completed that its opening to the public is expected to take place within the next thirty days. Two lines of three-inch wrought-iron gas-mains (one on each side) have been laid by the Commissioners, and I have caused the same to be connected with the six-inch main of Consolidated Gas Company in Tenth avenue, with valves, so that the gas can be turned on or off either side of the bridge, and the seventy-nine gas-lamps can be lighted when required. Copper conductors have also been laid in iron tubing by the Commission, and arrangement made for twenty-one electric-lamps, so that the bridge can be lighted by either gas or electric-lights, as the Gas Commission may determine.

One hundred and forty-six resolutions of the Common Council for additional gas-lighting in streets in the upper sections of the city are now on file in this Bureau, and if all these were completely carried into effect, they would require the erection of over fourteen hundred new gas-lamps, and many additional resolutions will, doubtless, be adopted by the Common Council of 1889.

There have been broken during the year more than 120,000 lights of glass in the ordinary lamps, more than 700 globes of the Boulevard lamps, and many lanterns have been entirely destroyed. Lanterns have been reglazed during the day and the glass again found broken at lighting time. Complaints have been received that lamps were extinguished or not lighted, and when investigation was made it was found that the extinguishments were usually caused by the winds, in consequence of broken glass. This has been a cause of annoyance and trouble, both to the gas companies lighting the lamps and to this office, but beyond notifying the police this Bureau has no power to remedy the matter.

The contracts with the United States, the Brush, the Harlem, the Mount Morris and the North New York Electric-light Companies have not been fully executed, in consequence of an injunction obtained by a Mr. Kimball, on an affidavit made by Mr. John H. Hapgood, representing the New York Electric Construction Company, on the ground that the said John H. Hapgood had been permitted by the Gas Commission to withdraw a bid of said company which had been deposited by him in the estimate-box on May 9th last; the envelope containing the bid having been returned to Mr. Hapgood unopened.

As the lighting of our thoroughfares by electric-lights has now become an established fact, and as our carefully-prepared forms of electric-light contracts require that the lights shall be equivalent to a specified candle-power, etc., it was deemed essential that this Bureau should have the necessary electrical instruments and photometric apparatus for testing the lights and determining whether the requirements of the specifications were complied with. With this purpose in view, a set of "Ayrton and Perry's" ammeters and voltmeters were purchased, and an order was given the American Meter Company for a complete portable photometer, to be made according to specifications furnished by our electrical expert, Lieutenant John Millis, U. S. A., and under his direction. During the past year several communications from public officials of other cities have been received, asking for information as to the means employed and method adopted for testing the candle-power of the arc electric-lamp, and hence I requested Lieutenant Millis to furnish me with a statement descriptive of the apparatus used and the method of testing the lights, and his report is herewith annexed as Exhibit "J." The examinations have been made at the generating stations of the electric-light companies, by taking the photometric apparatus and electrical instruments there, and setting up the photometer as described in his report, the lamp to be tested being placed on a street-lamp current and presumed to be burning under the same conditions as the lamps on the street. Such tests, however, are in every way favorable to the electric-light company, inasmuch as its Superintendent knows that a lamp is to be tested at the station, and hence a carefully-selected lamp and the best carbons may be handed over for the test, and the electric current may be made stronger than the current generally sent out.

Yours, respectfully,

S. McCORMICK, Superintendent of Lamps and Gas.

EXHIBIT "A."

Statement showing the Amounts on Vouchers drawn for Gas to the various Public Markets, Offices, etc., and for Fitting-up, Repairing, Lighting, etc., the Public Lamps, for the First, Second, Third and Fourth Quarters of the Year 1888, with the Totals for the whole Year.

	FIRST QUARTER ENDING MARCH 31.	SECOND QUARTER ENDING JUNE 30.	THIRD QUARTER ENDING SEPT. 30.	FOURTH QUARTER ENDING DEC. 31.	TOTAL.
Washington Market.....	\$1,071 37	\$764 12	\$765 24	\$1,071 25	\$3,671 98
Catharine Country Market.....	29 88	32 25	38 75	48 62	149 50
Catharine Meat Market.....	27 37	23 00	22 87	23 25	96 49
Fulton Meat Market.....	399 24	301 12	300 25	389 62	1,390 23
Fulton Country Market.....	612 01	430 75	468 00	620 50	2,131 26
Essex Market.....	26 50	18 50	20 25	27 00	92 25
Centre Market.....	100 00	98 88	101 76	120 50	421 14
Clinton Market.....	223 88	204 87	175 87	229 75	834 37
Union Market.....	11 24	4 63	4 75	14 00	34 62
Tompkins Market.....	193 75	118 25	77 00	117 50	506 50
Jefferson Market.....	248 25	134 75	85 25	215 63	683 88
First District Police Court.....	382 51	337 99	301 51	410 50	1,432 51
Second District Police Court.....	154 75	91 50	58 25	131 50	436 00
Third District Police Court.....	43 50	25 75	25 75	42 25	137 25
Fourth District Police Court.....	125 75	85 50	68 75	121 75	401 75
Fifth District Police Court.....	29 00	15 76	14 49	24 75	84 00
First District Civil Court.....	8 24	2 12	88	5 26	16 50
Second District Civil Court.....	33 87	11 63	.....	.....	45 50
Fourth District Civil Court.....	10 75	11 75	7 25	15 50	45 25
Fifth District Civil Court.....	62 50	38 50	23 25	51 75	176 00
Sixth District Civil Court.....	2 50	2 25	1 25	2 25	8 25
Eighth District Civil Court.....	6 00	3 50	3 50	7 50	20 50
Ninth District Civil Court.....	19 51	11 00	7 12	12 62	50 25
Tenth District Civil Court.....	2 40	1 76	16	.....	4 32
Court-room, Brown-stone Building.....	252 25	200 25	160 50	249 26	862 26
New Court-house.....	1,304 12	1,057 24	854 63	1,211 99	4,427 98
City Hall.....	458 75	365 63	316 00	484 37	1,624 75
Corporation Counsel's Office.....	46 25	13 00	3 25	40 75	103 25
Corporation Attorney's Office.....	71 00	49 88	40 37	61 51	222 76
Public Administrator's Office.....	38	25	25	49	137
Department of Public Works.....	461 75	264 37	183 75	340 88	1,250 75
Department of Taxes.....	12 13	7 87	4 88	10 38	35 26
Court of Special Sessions.....	55 75	31 88	12 38	34 63	134 64
CITY RECORD Book Bindery.....	5 62	4 24	3 37	4 87	18 10
Register's Office.....	133 75	79 26	43 01	108 87	364 89
County Jail.....	336 75	262 00	229 75	344 50	1,173 00
Pipe Yard, Rivington Street.....	5 01	2 24	1 62	9 00	17 87
Pipe Yard, East Twenty-fourth Street.....	4 87	2 75	2 63	5 37	15 62
Water Purveyor's Repair Shop, Thirtieth Street.....	14 88	6 50	4 62	11 38	37 38
Water Purveyor's Repair Shop, Eighty-seventh Street.....	7 86	2 75	2 63	7 75	20 99
Water Purveyor's Repair Shop, One Hundred and Twenty-fifth Street.....	19 01	12 38	3 87	20 13	55 39
South Gate House.....	58 99	43 25	38 25	47 49	187 98
Engine-house, High Bridge.....	107 88	75 87	66 88	102 39	353 02
Engine-house, Ninety-eighth street.....	209 62	150 76	147 87	159 12	667 37
Clock Tower, Third District Court-house.....	119 75	62 25	57 75	223 25	463 00
Photometrical Rooms, Grand street.....	22 75	9 63	6 63	18 75	57 76
Photometrical Rooms, Seventy-ninth street.....	6 62	5 75	62	7 50	20 49
Corporation yard, foot East Sixteenth street.....	3 13	2 38	1 25	4 37	11 13
Dog Pound, foot of East One Hundred and Second street.....	.....	87	2 38	3 63	6 88
Seventh Regiment Armory.....	1,028 62	429 00	141 75	807 02	2,406 39
Eighth Regiment Armory.....	240 00	250 25	129 00	280 25	899 50
Ninth Regiment Armory.....	337 13	304 63	82 75	208 63	933 14
Eleventh Regiment Armory.....	97 00	105 00	57 50	105 37	364 87
Twelfth Regiment Armory.....	699 75	486 00	253 50	587 25	2,026 50
Twenty-second Regiment Armory.....	909 63	484 75	258 50	722 50	2,375 38
Sixty-ninth Regiment Armory.....	258 75	206 25	80 50	188 50	734 00
Seventy-first Regiment Armory.....	409 50	223 00	104 75	357 63	1,094 88
First Battery Armory.....	57 00	31 50	23 50	72 00	184 00
Second Battery Armory.....	140 00	83 75	29 75	140 00	393 50
Brigade Headquarters.....	4 50	22 75	29 25	112 00	168 50
Public Bath, Battery.....	.....	1 62	15 62	6 00	23 24
Public Bath, Corlears street.....	.....	.....	22 50	8 13	30 63
Public Bath, Duane street, North river.....	.....	2 88	24 51	11 63	39 02
Public Bath, Stanton street.....	.....	88	21 88	5 37	28 13
Public Bath, Horatio street.....	.....	2 00	18 99	3 50	24 49
Public Bath, Nineteenth street, East river.....	.....	2 50	25 25	5 13	32 88
Public Bath, Twenty-seventh street, North river.....	.....	1 75	33 99	10 87	46 61
Public Bath, Thirty-seventh street, East river.....	.....	.....	26 99	3 87	30 86
Public Bath, Forty-sixth street, North river.....	.....	.....	29 26	5 00	34 26
Public Bath, Fifty-first street, East river.....	.....	.....	17 75	4 12	21 87
Public Bath, One Hundred and Twelfth street, East river.....	.....	.....	41 62	7 25	48 87
Public Bath, One Hundred and Thirty-eighth street, East river.....	.....	80	21 76	3 84	26 40
Offices New York City Civil Service Board.....	.....	.....	.....	7 62	7 62
Traveling expenses.....	.....	54 20	.....	92 50	146 70
Gas examinations.....	379 50	384 00	375 50	379 50	1,518 50
Electric-light examinations.....	.....	.....	.....	600 00	600 00

RECAPITULATION.

Gas to public offices, etc.....	11,725 52	8,125 69	6,252 16	10,879 36	36,982 73
Supplies to public lamps, etc.....	4,139 62	4,803 19	4,106 95	6,923 88	19,973 64
Supplies to public lamps, etc., Twenty-third and Twenty-fourth Wards.....	.....	590 62	590 62	1,328 72	2,509 96
Fitting up new lamps.....	80 00	520 00	1,424 00	1,696 00	3,720 00
Fitting up new lamps, Twenty-third and Twenty-fourth Wards.....	.....	16 00	328 00	2,496 00	2,840 00
Resetting and repairing lamp-posts.....	297 50	1,568 00	1,821 00	2,225 00	5,911 50
Resetting and repairing lamp-posts, Twenty-third and Twenty-fourth Wards.....	226 50	271 50	707 50	1,301 00	2,506 50
Lighting public lamps.....	56,510 36	79,387 87	74,481 26	99,744 90	310,124 39
Lighting public lamps, Twenty-third and Twenty-fourth Wards.....	21,522 13	32,509 28	32,807 84	45,249 03	132,088 28
Lighting electric-lamps.....	18,209 25	20,954 83	15,415 75	11,762 10	66,341 93
Lighting naphtha-lamps.....	495 36	749 19	750 00	997 88	2,992 43
Inspectors of lamps, etc. (pay rolls).....	1,624 95	1,624 95	1,674 95	1,549 95	6,474 80
Lighting Stuyvesant Parks, additional electric-lights.....	.....	.....	.....	672 00	672 00
Totals.....	\$114,831 19	\$151,121 12	\$140,360 03	\$186,825 82	\$593,138 16

EXHIBIT "B."

Summary of the Appropriation for "Lamps and Gas and Electric Lighting—General Lighting," for 1888, showing the Amounts Expended during each of the Quarters of the Year, with the Balance standing to the Credit of the Appropriation.

Amount appropriated for "Lamps and Gas and Electric Lighting—General Lighting," 1888.....	\$632,000 00
Vouchers drawn in first quarter, ending March 31.....	\$101,480 72
Vouchers drawn in second quarter, ending June 30.....	141,370 48
Vouchers drawn in third quarter, ending September 30.....	132,432 92
Vouchers drawn in fourth quarter, ending December 31.....	173,724 51
Total amount of vouchers drawn during the year.....	549,008 63
Balance.....	\$82,991 37

LIABILITIES.

United States Illuminating Co., lighting public lamps, May 1 to December 31.....	\$34,096 00
Brush Electric Illuminating Co., lighting public lamps, May 1 to December 31.....	31,287 55
Harlem Lighting Co., lighting public lamps, May 1 to December 31.....	9,580 75
North New York Lighting Co., lighting public lamps, May 1 to December 31.....	2,223 55
Mount Morris Electric Light Co., lighting public lamps, May 1 to December 31.....	1,376 64
East River Electric Light Co., lighting public lamps, December 1 to December 31.....	3,959 20
Surplus balance.....	\$82,523 69
Surplus balance.....	\$467 68

EXHIBIT "C."

Summary of the Appropriation for "Lamps and Gas and Electric Lighting—For 1,000 Additional Electric Lights" for 1888, showing the Amounts Expended during each of the Quarters of the Year, with the Balance standing to the Credit of the Appropriation.

Amount appropriated for "Lamps and Gas and Electric Lighting—For 1,000 additional Electric Lights," 1888.....	\$12,000 00
Amount of vouchers drawn in third quarter, ending September 30.....	.....
Amount of vouchers drawn in fourth quarter, ending December 31.....	\$672 00
Balance.....	\$11,328 00
Less amount transferred by Board of Estimate and Apportionment to the appropriation for "Public Buildings—Construction and Repairs," 1888.....	3,000 00
Surplus balance.....	\$8,328 00

EXHIBIT "D."

Summary of the Appropriation for "Lamps and Gas and Electric Lighting—For Gas for Public Buildings and Offices" for 1888, showing the Amounts Expended during each of the Quarters of the Year, with the Balance standing to the Credit of the Appropriation.

Amount appropriated for "Lamps and Gas and Electric Lighting—For Gas for Public Buildings and Offices," 1888.....	\$43,000 00
Vouchers drawn in first quarter, ending March 31.....	\$11,725 52
Vouchers drawn in second quarter, ending June 30.....	8,125 69
Vouchers drawn in third quarter, ending September 30.....	6,252 16
Vouchers drawn in fourth quarter, ending December 31.....	10,879 36
Total amount of vouchers drawn during the year.....	36,982 73
Surplus balance.....	\$6,017 27

EXHIBIT "E."

Summary of the Appropriation for "Lamps and Gas and Electric Lighting—Salaries" for 1888, showing the Amounts Expended during each of the Quarters of the Year, with the Balance standing to the Credit of the Appropriation.

Amount appropriated for "Lamps and Gas and Electric Lighting—Salaries," 1888..	\$6,500 00
Vouchers drawn in first quarter, ending March 31.....	\$1,624 95
Vouchers drawn in second quarter, ending June 30.....	1,624 95
Vouchers drawn in third quarter, ending September 30.....	1,674 95
Vouchers drawn in fourth quarter, ending December 31.....	1,549 95
Total amount of vouchers drawn during the year.....	6,474 80
Surplus balance.....	\$25 20

EXHIBIT "F."

Summary of the "Lamp Account," showing the Number of New Lamps Lighted, Old Lamps Relighted and Lamps Discontinued by each Gas and Electric-light Company during the Quarter ending December 31, 1888, also a Statement for the Year.

CONSOLIDATED GAS COMPANY, BRANCH 1.			
Number of lamps lighted September 30, 1888.....	2,979		
Number of new lamps lighted during the quarter.....	11		
Number of old lamps relighted during the quarter.....	29		
Less lamps discontinued during the quarter.....	10	3,019	
Less lamps discontinued on account of electric-lights.....	38		48
Number of lamps lighted December 31, 1888.....			2,971
CONSOLIDATED GAS COMPANY, BRANCH 2.			
Number of lamps lighted September 30, 1888.....	1,626		
Number of new lamps lighted during the quarter.....	15		
Number of old lamps relighted during the quarter.....	15		
Less lamps discontinued during the quarter.....	0	1,656	
Less lamps discontinued on account of electric-lights.....	25		25
Number of lamps lighted December 31, 1888.....			1,631
CONSOLIDATED GAS COMPANY, BRANCH 3.			
Number of lamps lighted September 30, 1888.....	2,431		
Number of new lamps lighted during the quarter.....	12		
Number of old lamps relighted during the quarter.....	15		
Less lamps discontinued during the quarter.....		2,458	
		2	
Number of lamps lighted December 31, 1888.....			2,456
CONSOLIDATED GAS COMPANY, BRANCH 4.			
Number of lamps lighted September 30, 1888.....	2,933		
Number of new lamps lighted during the quarter.....	52		
Number of old lamps relighted during the quarter.....	10		
Less lamps discontinued during the quarter.....	7	2,995	
Less lamps discontinued on account of electric-lights.....	3		10
Number of lamps lighted December 31, 1888.....			2,985
CONSOLIDATED GAS COMPANY, BRANCH 6.			
Number of lamps lighted September 30, 1888.....	5,598		
Number of new lamps lighted during the quarter.....	68		
Number of old lamps relighted during the quarter.....	16		
Less lamps discontinued during the quarter.....		5,682	
		5	
Number of lamps lighted December 31, 1888.....			5,677
Total number of lamps lighted by Consolidated Gas Company, December 31, 1888.....			15,720
NEW YORK MUTUAL GAS-LIGHT COMPANY.			
Number of lamps lighted September 30, 1888.....	146		
Number of new lamps lighted during the quarter.....	0		
Number of old lamps relighted during the quarter.....	0		
Less lamps discontinued during the quarter.....		146	
		1	
Number of lamps lighted December 31, 1888.....			145
EQUITABLE GAS-LIGHT COMPANY.			
Number of lamps lighted September 30, 1888.....	1,985		
Number of new lamps lighted during the quarter.....	0		
Number of old lamps relighted during the quarter.....	5		
Less lamps discontinued during the quarter on account of electric-lights.....		1,990	
		68	
Number of lamps lighted December 31, 1888.....			1,922
CENTRAL GAS-LIGHT COMPANY.			
Number of lamps lighted September 30, 1888.....	2,358		
Number of new lamps lighted during the quarter.....	40		
Number of old lamps relighted during the quarter.....	9		
Less lamps discontinued during the quarter.....		2,407	
		12	
Number of lamps lighted December 31, 1888.....			2,395

NORTHERN GAS-LIGHT COMPANY.

Number of lamps lighted September 30, 1888.....	1,931		
Number of new lamps lighted during the quarter.....	169		
Number of old lamps relighted during the quarter.....	1		
Less lamps discontinued during the quarter.....		2,101	
		0	
Number of lamps lighted December 31, 1888.....			2,101

YONKERS GAS-LIGHT COMPANY.

Number of lamps lighted September 30, 1888.....	440		
Number of new lamps lighted during the quarter.....	9		
Number of old lamps relighted during the quarter.....	0		
Less lamps discontinued during the quarter.....		449	
		0	
Number of lamps lighted December 31, 1888.....			449
Total number of gas-lamps lighted December 31, 1888.....			22,732

NAPHTHA-LAMPS.

NEW YORK AND NEW JERSEY GLOBE GAS-LIGHT COMPANY.

Number of lamps lighted September 30, 1888.....	120		
Number of new lamps lighted during the quarter.....	0		
Number of old lamps relighted during the quarter.....	0		
Less lamps discontinued during the quarter.....		120	
		0	
Number of lamps lighted December 31, 1888.....			120

ELECTRIC-LAMPS.

BRUSH ELECTRIC ILLUMINATING COMPANY.

Number of lamps lighted September 30, 1888.....	367		
Number of new lamps lighted during the quarter.....	0		
Number of old lamps relighted during the quarter.....	0		
Less lamps discontinued during the quarter.....		367	
		0	
Number of lamps lighted December 31, 1888.....			367

UNITED STATES ILLUMINATING COMPANY.

Number of lamps lighted September 30, 1888.....	408		
Number of new lamps lighted during the quarter.....	0		
Number of old lamps relighted during the quarter.....	0		
Less lamps discontinued during the quarter.....		408	
		0	
Number of lamps lighted December 31, 1888.....			408

HARLEM LIGHTING COMPANY.

Number of lamps lighted September 30, 1888.....	101		
Number of new lamps lighted during the quarter.....	0		
Number of old lamps relighted during the quarter.....	0		
Less lamps discontinued during the quarter.....		101	
		0	
Number of lamps lighted December 31, 1888.....			101

MOUNT MORRIS ELECTRIC-LIGHT COMPANY.

Number of lamps lighted September 30, 1888.....	18		
Number of new lamps lighted during the quarter.....	0		
Number of old lamps relighted during the quarter.....	0		
Less lamps discontinued during the quarter.....		18	
		0	
Number of lamps lighted December 31, 1888.....			18

NORTH NEW YORK LIGHTING COMPANY.

Number of lamps lighted September 30, 1888.....	26		
Number of new lamps lighted during the quarter.....	0		
Number of old lamps relighted during the quarter.....	0		
Less lamps discontinued during the quarter.....		26	
		0	
Number of lamps lighted December 31, 1888.....			26

EAST RIVER ELECTRIC-LIGHT COMPANY.

Number of lamps lighted September 30, 1888.....	389		
Number of new lamps lighted during the quarter.....	19		
Number of old lamps relighted during the quarter.....	0		
Less lamps discontinued during the quarter.....		408	
		0	
Number of lamps lighted December 31, 1888.....			408
Total number of electric-lamps lighted December 30, 1888.....			1,328

RECAPITULATION FOR QUARTER.

Number of gas-lamps lighted September 30, 1888.....	22,427		
Number of naphtha-lamps lighted September 30, 1888.....	120		
Number of electric-lamps lighted September 30, 1888.....	1,309		
Number of new gas-lamps lighted during the quarter.....	376		
Number of new naphtha-lamps lighted during the quarter.....	0		
Number of new electric-lamps lighted during the quarter.....	19		
Number of gas-lamps relighted during the quarter.....	100		
Number of naphtha-lamps relighted during the quarter.....	0		
Number of electric-lamps relighted during the quarter.....	0		
Less gas-lamps discontinued during the quarter.....	37		
Less naphtha-lamps discontinued during the quarter.....	0		
Less gas-lamps discontinued during the quarter on account of electric-lights.....	134		
Total number of lamps lighted December 31, 1888.....			24,180

Summary of the "Lamp Account" for the Year 1888.

CONSOLIDATED GAS COMPANY, BRANCH 1.				YONKERS GAS-LIGHT COMPANY.			
Number of lamps lighted December 31, 1887.....	3,851			Number of lamps lighted December 31, 1887.....	428		
Number of new lamps lighted during the year.....	12			Number of new lamps lighted during the year.....	21		
Number of old lamps relighted during the year.....	68			Number of old lamps relighted during the year.....	0		
		3,931		Less lamps discontinued during the year.....		449	
Less lamps discontinued during the year.....	45			Number of lamps lighted December 31, 1888.....			449
Less lamps discontinued on account of electric-lights.....	876			Total number of gas-lamps lighted December 31, 1888.....			22,732
Less lamps transferred to Equitable Gas-light Co.....	39	960					
			2,971				
Number of lamps lighted December 31, 1888.....							
CONSOLIDATED GAS COMPANY, BRANCH 2.				NAPHTHA-LAMPS.			
Number of lamps lighted December 31, 1887.....	2,450			NEW YORK AND NEW JERSEY GLOBE GAS-LIGHT COMPANY.			
Number of new lamps lighted during the year.....	17			Number of lamps lighted December 31, 1887.....	120		
Number of old lamps relighted during the year.....	24			Number of new lamps lighted during the year.....	0		
		2,491		Number of old lamps relighted during the year.....	0		
Less lamps discontinued during the year.....	8			Less lamps discontinued during the year.....		120	
Less lamps discontinued on account of electric-light.....	543			Number of lamps lighted December 31, 1888.....			120
Less lamps transferred to Equitable Gas-light Co.....	309	860					
			1,631				
Number of lamps lighted December 31, 1888.....							
CONSOLIDATED GAS COMPANY, BRANCH 3.				ELECTRIC-LAMPS.			
Number of lamps lighted December 31, 1887.....	2,553			BRUSH ELECTRIC ILLUMINATING COMPANY.			
Number of new lamps lighted during the year.....	26			Number of lamps lighted December 31, 1887.....	354		
Number of old lamps relighted during the year.....	25			Number of new lamps lighted during the year.....	13		
Number of lamps transferred from Equitable Gas-light Co.....	47			Number of old lamps relighted during the year.....	0		
		2,651		Less lamps discontinued during the year.....		367	
Less lamps discontinued during the year.....	7			Number of lamps lighted December 31, 1888.....			367
Less lamps discontinued on account of electric-light.....	163						
Less lamps transferred to Equitable Gas-light Co.....	25	195					
			2,456				
Number of lamps lighted December 31, 1888.....							
CONSOLIDATED GAS COMPANY, BRANCH 4.				UNITED STATES ILLUMINATING COMPANY.			
Number of lamps lighted December 31, 1887.....	3,321			Number of lamps lighted December 31, 1887.....	363		
Number of new lamps lighted during the year.....	181			Number of new lamps lighted during the year.....	45		
Number of old lamps relighted during the year.....	30			Number of old lamps relighted during the year.....	0		
Number of lamps transferred from Equitable Gas-light Co.....	3			Less lamps discontinued during the year.....		408	
		3,535		Number of lamps lighted December 31, 1888.....			408
Less lamps discontinued during the year.....	32						
Less lamps discontinued on account of electric-light.....	335						
Less lamps transferred to Equitable Gas-light Co.....	183	550					
			2,985				
Number of lamps lighted December 31, 1888.....							
CONSOLIDATED GAS COMPANY, BRANCH 6.				HARLEM LIGHTING COMPANY.			
Number of lamps lighted December 31, 1887.....	5,543			Number of lamps lighted December 31, 1887.....	85		
Number of new lamps lighted during the year.....	230			Number of new lamps lighted during the year.....	12		
Number of old lamps relighted during the year.....	84			Number of old lamps relighted during the year.....	7		
		5,857		Less lamps discontinued during the year.....		104	
Less lamps discontinued during the year.....	52			Number of lamps lighted December 31, 1888.....			101
Less lamps discontinued on account of electric-light.....	128	180					
			5,677				
Number of lamps lighted December 31, 1888.....							
Total number of lamps lighted by Consolidated Gas Co. December 31, 1888.....			15,720				
NEW YORK MUTUAL GAS-LIGHT COMPANY.				MOUNT MORRIS ELECTRIC-LIGHT COMPANY.			
Number of lamps lighted December 31, 1887.....	191			Number of lamps lighted December 31, 1887.....	0		
Number of new lamps lighted during the year.....	0			Number of new lamps lighted during the year.....	18		
Number of old lamps relighted during the year.....	2			Number of old lamps relighted during the year.....	0		
		193		Less lamps discontinued during the year.....		18	
Less lamps discontinued during the year.....	1			Number of lamps lighted December 31, 1888.....			18
Less lamps discontinued on account of electric-light.....	47	48					
			145				
Number of lamps lighted December 31, 1888.....							
EQUITABLE GAS-LIGHT COMPANY.				NORTH NEW YORK LIGHTING COMPANY.			
Number of lamps lighted December 31, 1887.....	2,218			Number of lamps lighted December 31, 1887.....	26		
Number of new lamps lighted during the year.....	0			Number of new lamps lighted during the year.....	0		
Number of old lamps relighted during the year.....	14			Number of old lamps relighted during the year.....	0		
Number of lamps transferred from Consolidated Gas Co.....	556			Less lamps discontinued during the year.....		26	
		2,788		Number of lamps lighted December 31, 1888.....			26
Less lamps discontinued during the year.....	2						
Less lamps discontinued on account of electric-lights.....	814						
Less lamps transferred to Consolidated Gas Co.....	50	866					
			1,922				
Number of lamps lighted December 31, 1888.....							
CENTRAL GAS-LIGHT COMPANY.				EAST RIVER ELECTRIC-LIGHT COMPANY.			
Number of lamps lighted December 31, 1887.....	2,291			Number of lamps lighted December 31, 1887.....	0		
Number of new lamps lighted during the year.....	118			Number of new lamps lighted during the year.....	408		
Number of old lamps relighted during the year.....	41			Number of old lamps relighted during the year.....	0		
		2,450		Less lamps discontinued during the year.....		408	
Less lamps discontinued during the year.....	45			Number of lamps lighted December 31, 1888.....			408
Less lamps discontinued on account of electric-lights.....	10	55		Total number of electric-lamps lighted December 31, 1888.....			1,328
			2,395				
Number of lamps lighted December 31, 1888.....							
NORTHERN GAS-LIGHT COMPANY.				RECAPITULATION FOR YEAR.			
Number of lamps lighted December 31, 1887.....	1,873			Number of gas-lamps lighted December 31, 1888.....	24,719		
Number of new lamps lighted during the year.....	216			Number of naphtha-lamps lighted December 31, 1888.....	120		
Number of old lamps relighted during the year.....	17			Number of electric-lamps lighted December 31, 1888.....	828		
		2,106				25,667	
Less lamps discontinued during the year.....		5		Number of new gas-lamps lighted during the year.....	821		
			2,101	Number of new naphtha-lamps lighted during the year.....	0		
Number of lamps lighted December 31, 1888.....				Number of new electric-lamps lighted during the year.....	496		
						1,317	
				Number of gas-lamps relighted during the year.....	305		
				Number of naphtha-lamps relighted during the year.....	0		
				Number of electric-lamps relighted during the year.....	7		
						312	
				Less gas-lamps discontinued during the year.....	197		
				Less gas-lamps discontinued on account of electric-light.....	2,916		
				Less naphtha-lamps discontinued during the year.....	0		
				Less electric-lamps discontinued during the year.....	3		
							3,116
				Total number of lamps lighted December 31, 1888.....			24,180

EXHIBIT "G."

Statement giving the Illuminating Power in Candles of the Gas supplied to the City by the several Gas-light Companies during the Quarter ending December 31, 1888, as shown by the Daily Observations at the Photometrical Rooms of the Department of Public Works, with the Average for the Year.

FOR WHAT TIME.	CONSOLIDATED GAS CO., BRANCH 1.			CONSOLIDATED GAS CO., BRANCH 2.			CONSOLIDATED GAS CO., BRANCH 3.			CONSOLIDATED GAS CO., BRANCH 4.			CONSOLIDATED GAS CO., BRANCH 6.			N. Y. MUTUAL GAS- LIGHT CO.			EQUITABLE GAS-LIGHT CO.		
	ILLUMINATING POWER IN CANDLES.			ILLUMINATING POWER IN CANDLES.			ILLUMINATING POWER IN CANDLES.			ILLUMINATING POWER IN CANDLES.			ILLUMINATING POWER IN CANDLES.			ILLUMINATING POWER IN CANDLES.			ILLUMINATING POWER IN CANDLES.		
Week ending—	Lowest.	Highest.	Average.	Lowest.	Highest.	Average.	Lowest.	Highest.	Average.	Lowest.	Highest.	Average.	Lowest.	Highest.	Average.	Lowest.	Highest.	Average.	Lowest.	Highest.	Average.
Oct. 6, 1888.....	23.59	25.27	24.61	19.05	20.83	20.16	28.12	30.38	29.30	21.16	23.69	22.42	25.67	28.62	26.78	26.79	29.54	28.23	28.84	32.00	30.15
" 13, "	18.90	26.06	21.77	19.44	20.54	20.24	28.18	31.82	30.02	21.76	23.44	22.49	25.11	28.66	27.35	28.02	31.73	30.68	31.61	33.12	32.42
" 20, "	23.22	24.70	24.14	20.06	20.62	20.45	28.82	30.14	29.44	21.81	27.35	23.27	26.52	27.59	27.04	29.31	30.80	29.84	29.10	31.66	31.00
" 27, "	24.16	26.60	25.37	19.72	20.92	20.55	29.60	31.23	30.52	21.66	23.60	22.63	24.83	27.46	26.59	27.07	30.06	28.66	30.11	32.11	31.24
Nov. 3, "	23.44	24.81	24.22	19.95	20.62	20.42	28.57	30.87	29.93	21.17	23.56	22.29	26.22	27.71	26.97	25.12	28.71	27.09	31.66	32.14	31.90
" 10, "	24.00	27.86	25.37	20.03	21.63	21.05	28.88	31.18	30.04	22.61	25.71	23.89	25.75	27.61	26.45	25.06	29.94	27.99	31.51	32.96	32.20
" 17, "	22.48	26.64	24.03	20.00	20.99	20.43	28.11	30.00	29.09	22.15	24.24	23.42	25.67	27.11	26.09	24.95	29.14	27.44	29.76	32.40	30.85
" 24, "	19.13	23.28	21.40	19.31	20.76	19.97	29.45	31.76	30.40	21.11	23.11	21.85	23.58	26.05	24.53	27.90	30.68	29.37	29.21	31.93	30.57
Dec. 1, "	18.35	24.32	21.16	18.58	19.43	19.07	26.57	28.78	28.11	21.04	21.73	21.46	23.06	24.84	24.20	27.24	32.76	29.64	30.83	31.65	31.27
" 8, "	22.58	24.42	23.64	20.37	21.45	20.66	27.63	31.18	28.73	21.00	22.80	22.08	23.07	26.21	24.64	29.26	30.71	29.97	31.58	32.64	32.06
" 15, "	22.48	23.87	23.39	20.14	20.80	20.52	27.92	29.93	29.31	20.66	21.62	20.66	21.89	24.74	23.53	27.40	32.36	30.37	29.62	32.08	31.09
" 22, "	21.94	24.23	23.18	18.73	20.81	19.71	27.80	28.94	28.45	20.05	21.76	21.14	24.12	25.44	24.52	29.33	31.04	30.19	30.44	31.86	31.21
" 29, "	23.96	25.64	24.75	19.47	21.54	20.36	28.06	29.00	28.40	20.72	22.46	21.58	23.44	25.93	24.53	30.84	33.04	32.00	30.97	32.99	31.82
For the Quarter	18.35	27.86	23.62	18.58	21.63	20.28	26.57	31.82	29.36	20.06	27.35	22.24	21.89	28.66	25.63	24.95	33.04	29.34	28.84	33.12	31.37

Average for the Year.

FOR WHAT TIME.	CONSOLIDATED GAS CO., BRANCH 1.			CONSOLIDATED GAS CO., BRANCH 2.			CONSOLIDATED GAS CO., BRANCH 3.			CONSOLIDATED GAS CO., BRANCH 4.			CONSOLIDATED GAS CO., BRANCH 6.			N. Y. MUTUAL GAS- LIGHT CO.			EQUITABLE GAS- LIGHT CO.		
	ILLUMINATING POWER IN CANDLES.			ILLUMINATING POWER IN CANDLES.			ILLUMINATING POWER IN CANDLES.			ILLUMINATING POWER IN CANDLES.			ILLUMINATING POWER IN CANDLES.			ILLUMINATING POWER IN CANDLES.			ILLUMINATING POWER IN CANDLES.		
Month of—	Lowest.	Highest.	Average.	Lowest.	Highest.	Average.	Lowest.	Highest.	Average.	Lowest.	Highest.	Average.	Lowest.	Highest.	Average.	Lowest.	Highest.	Average.	Lowest.	Highest.	Average.
January.....	22.23	25.24	23.56	17.82	19.83	18.97	27.29	29.40	28.42	19.52	21.59	20.65	21.48	26.12	23.89	29.18	32.54	31.05	28.45	32.82	31.04
February.....	20.91	25.53	22.92	18.28	20.51	19.46	25.47	29.10	27.77	19.27	21.73	20.30	20.14	26.14	22.52	28.28	32.08	29.93	28.54	32.92	30.89
March.....	23.10	26.56	24.85	18.57	20.15	19.52	25.56	30.12	27.99	19.30	23.84	20.91	20.52	24.45	22.23	28.25	31.32	29.92	28.01	31.12	29.24
April.....	24.24	26.36	25.36	19.20	21.60	20.41	28.07	30.62	29.53	20.99	23.64	22.53	22.93	26.08	24.66	27.77	32.03	30.56	30.38	33.20	31.65
May.....	23.28	27.58	25.42	20.08	21.73	20.85	28.42	30.77	29.72	20.79	24.12	22.48	23.14	27.54	25.56	29.09	32.04	30.73	31.31	33.39	32.44
June.....	23.22	27.44	25.30	19.04	22.27	20.68	26.92	30.69	28.88	20.99	24.58	22.40	24.72	29.26	26.87	28.24	32.30	30.98	29.72	33.40	32.09
July.....	22.49	25.47	24.33	19.06	21.53	20.33	27.02	29.98	28.70	20.92	24.74	22.73	25.27	30.69	27.93	27.57	32.94	30.37	30.82	33.57	32.51
August.....	23.30	26.75	24.87	18.80	20.74	19.73	24.24	29.66	27.18	21.26	22.50	22.02	24.40	27.74	26.08	27.47	30.82	29.65	30.48	32.14	31.38
September.....	23.34	26.02	24.66	18.58	20.81	20.09	22.70	30.55	27.04	20.51	23.15	21.91	23.84	27.30	24.21	26.10	30.67	28.90	28.35	32.46	30.87
October.....	18.90	26.60	23.97	19.05	20.92	20.35	28.12	31.82	29.82	21.16	27.35	22.70	24.83	28.66	26.94	26.79	31.73	29.35	28.84	33.12	31.20
November.....	19.13	27.86	23.75	19.31	21.63	20.47	28.11	31.76	29.86	21.11	25.71	22.86	23.58	27.71	26.01	24.95	30.68	27.97	29.21	32.96	31.38
December.....	18.35	25.64	23.22	18.58	21.54	20.06	26.57	31.18	28.60	20.06	22.80	21.38	21.89	26.21	21.28	27.24	33.04	30.43	29.62	32.99	31.49
Totals for the Year.....	18.35	27.86	24.35	17.82	22.27	20.08	22.70	31.82	28.62	19.27	27.35	21.91	20.14	30.69	25.10	24.95	33.04	29.99	28.01	33.57	31.35
Distance from gas-works.....	1 ⁸⁶ / ₁₀₀ Miles			1 ⁸⁸ / ₁₀₀ Miles			3 ⁸⁴ / ₁₀₀ Miles			3 ⁸⁸ / ₁₀₀ Miles			1 ⁸⁶ / ₁₀₀ Miles.....			1 ⁶¹ / ₁₀₀ Miles.....			2 ⁷⁸ / ₁₀₀ Miles.		
Testing burner.....	Bray's Silt Union No. 7....			Empire, 5 feet			Bray's Silt Union No. 7....			Bray's Silt Union No. 6....			Bray's Silt Union No. 6....			Bray's Silt Union No. 7....			Bray's Silt Union No. 7....		
Gas.....	Water-gas (Tessie du Motay)			Coal-gas with water-gas...			Water-gas (Tessie du Motay)			Coal and naphtha			Water-gas (Tessie du Motay)			Water-gas.....			{ Water-gas (Jerzmonowski process).		

EXHIBIT "H."

Agreement.

This agreement, made and entered into this first day of May in the year one thousand eight hundred and eighty-eight, by and between the Mayor, Aldermen and Commonalty of the City of New York, parties of the first part, by the Commissioner of Public Works of said city, acting in conjunction with the Mayor and Comptroller thereof, and the East River Electric-light Company, party of the second part:

A. Witnesseth, that the said party of the second part hereto has agreed and by these presents does agree with the said parties of the first part, for the consideration hereinafter mentioned, and under the penalty expressed in a bond bearing even date with these presents and hereunto annexed, to furnish electric-lamps and accessories of the Thomson-Houston system, to and to operate and maintain the lamps in the portions of the City of New York, bounded and described as follows, to wit:

On Park Row, from Ann street to Bowery;
On Bowery, from Park Row to Third avenue;
On Third avenue, from Bowery to Fifty-sixth street;
On Grand street, from Broadway to East river;
On Sixth avenue, from Carmine street to Fifty-ninth street;
On Eighth avenue, from Fourteenth to Fifty-ninth street;
On Tenth avenue, from Fourteenth to Fifty-ninth street;
On Centre street, from Brooklyn Bridge to Broome street;
On Christopher street, from West street to Sixth avenue;
On Houston street, from Mulberry street to East river;
On Tenth street, from Second avenue to East river;
On Eighth street, from Sixth avenue to Cooper Union Square;
On Fourth avenue, from Bowery to Fourteenth street;
On Avenue B, from Houston to Fourteenth street;
On Avenue D, from Houston to Fourteenth street;
On First avenue, from Houston to Fourteenth street;
On West Broadway and South Fifth avenue, from Chambers street to Washington Square;
On Stuyvesant street, from Eighth to Tenth street;

—for and during the term of one year, commencing on May 1, 1888, and ending on the 30th day of April, A. D. 1889, inclusive, and during the same period to repair and paint the lamp-posts, hoods and supports of such lamps, and to clean and properly attend such lamps; and to fit up, operate and maintain such new lamps as may be required by the said parties of the first part in said portion of said city, and to repair, paint, clean, attend and replace such new lamps and the appurtenances thereof.

B. And it is further agreed that, subject to the provisions of subdivision 5 of section 86 of the New York City Consolidation Act of 1882, the said party of the second part will, upon being required so to do by the said parties of the first part, extend their conductors and erect new lamps in and along all the streets, avenues and public places within the limits aforesaid or adjacent thereto.

C. It is further agreed that all the lamps, materials and apparatus furnished, and all the work and labor done by the party of the second part hereto shall be of the kinds and qualities, and furnished and done in all respects in strict conformity to the terms, conditions and requirements of the

hereinafter contained specifications; said specifications, the proposals of the Commissioner of Public Works hereunto prefixed, and the estimate of the said party of the second part on file in the office of said Commissioners, are also to be taken as part of this contract.

D. It is further agreed that if the estimate or bid of the party hereto of the second part included any streets or parts of streets, parks or public places not lighted by electric arc-lamps, or not so lighted by the bidder at the time of making the bid, thirty days from the date of the execution of this agreement, and such further time as may be deemed reasonable by the Mayor, Comptroller and Commissioner of Public Works will be allowed the party of the second part in which to erect poles and lamps and establish conducting wires, all of which shall be done by the party of the second part without expense to the City, provided the said party of the second part have or shall procure a franchise from competent authority, authorizing the erection of poles and the stringing or laying of conductors in the streets or parts of streets in which the said lamps are located.

E. No payment will be made on account of any lamp except for the time during which all the requirements herein mentioned shall have been fully performed in accordance with the specifications.

F. It is further agreed that should there be any doubt as to the meaning of these specifications or discrepancy or any obscurity in the wording of them the Superintendent of Lamps and Gas shall explain them, and such explanation shall be final and binding upon the contractor, who will not make any charge or claim for extra work or damage in consequence of such explanation but will execute the work in accordance therewith.

Specifications.

1. Lamps.—The lamps furnished are to be of the kind known as "Arc" electric-lamps.
2. Lighting.—The lamps are to be operated continuously each and every night during the continuance of this contract. They are to be started thirty minutes after sunset and kept in operation until thirty minutes before sunrise, the time for lighting and extinguishing to be determined by tables to be furnished by the Commissioner of Public Works. Also the Department of Public Works may direct and require, by notice to that effect, that all or any portion of said public lamps shall be lighted and kept burning at any other time or times during the continuance of this contract; and the said party of the second part shall and will light the same, and continue them burning, in accordance with any and every direction of the Department of Public Works to that effect. Provided that if in compliance with the direction of the Department of Public Works, the whole number of hours during which the said lamps, or a portion of them, are kept burning, shall exceed the number of hours specified in the time-table to be furnished by the Commissioner of Public Works, which time-table shall aggregate a total of 3,950 hours for the term, then, in that case, the said party of the second part shall be entitled to claim and receive for such additional number of hours, during which the lamps, or such portion of them, in the district aforesaid, are kept burning in accordance with such direction of the said Department of Public Works, an additional compensation, equivalent to a pro rata increase of the compensation hereinafter allowed, proportioned to the increased number of hours beyond the said number and the number of lamps so kept burning. And also, provided, that if, in compliance with the direction of the said Department of Public Works, the number of hours during which the said lamps or any portion of them are kept burning shall be less than the aforesaid number of 3,950 per term, then, in that case, there shall be deducted an amount equivalent to a pro rata decrease of the compensation hereinafter allowed proportioned to the decrease of the number of hours below the said number, and to the decrease of

the number, and to the decrease of the number of lamps so kept burning. And also, provided, that said Department of Public Works shall have the right at any time to increase or diminish the number of lamps and to require such changes as may be found expedient in the location of any lamp or lamps awarded to be lighted by the party of the second part under this contract.

3. Luminous intensity—Each lamp must give a light equivalent to that of not less than one thousand standard sperm candles, weighing one sixth of a pound each, and burning as near as possible at the rate of one hundred and twenty grains of spermacet per hour. Measurement of the electric-lamp shall be made by comparison with a standard gas, oil or other lamp of at least twenty candle power, using the improved Bunsen photometer. The candle-power of the standard lamp shall be determined by direct comparison with standard candles. The electric-lamp shall be measured in a direction making an angle of 40 degrees with and below the horizontal plane, the axis of the carbons being vertical, with the positive carbon uppermost. After each observation the electric-lamp shall be revolved 90 degrees about its vertical axis, in one direction only, and the mean of ten such observations shall be taken in determining the candle power. The measurements shall be made with the globe removed from the lamp and with the light of the "Arc" unobstructed.

All lamps to be furnished and operated under this contract are expressly required to give a steady and uniform light without undue flickering, hissing or "pumping."

Each lamp must be operated at not less than four hundred and twenty-five Watts in the arc, to be determined by electrical measurements of the current and difference of potential between the carbons, using approved instruments properly tested and calibrated. An expert, to be designated by the Commissioner of Public Works, shall determine whether the lights are in accordance with and fulfill the specifications, and his determination shall be final and conclusive. It is also, provided, that in order that the party of the first part may have proper facilities for testing the candle-power of the lamps, the party of the second part will, at their own expense, extend a conductor or wire from a street-lamp circuit into a building on or near the line of such circuit to be designated by the Superintendent of Lamps and Gas, and will also furnish, erect and attend for such testing, lamps and carbons such as are used for lighting the streets under this agreement, and the party of the second part will also, when so directed by the Superintendent of Lamps and Gas furnish, erect and attend lamps and carbons for such tests at the central station or stations of the party of the second part, offering all proper and necessary facilities for such tests.

And it is further provided that in case the candle-power of any lamp or lamps shall be less than one thousand candle-power specified in this agreement, then payment will only be made for the candle power as determined by the photometric tests above mentioned; the amount so to be paid to be based pro rata upon the amount which should be paid providing the candle-power should be that of one thousand candles.

4. Carbons—The carbons used in the lamps must be of the best quality and of the size best adapted to the current use.

5. Globes—The globes of the lamps will be of clear glass unless otherwise specified, and they must be of uniform thickness and proper shape to avoid casting rings or streaks of light and shadow. All globes that may become broken must be replaced by sound ones each day before starting the lights. The clear globes used must not absorb or obstruct more than ten per cent. of the light of the lamp. The party of the first part shall have the right to require that globes partly clear and partly ground shall be used where deemed necessary.

6. Cleaning—Dirt and carbon dust must be removed from the globes and the globes thoroughly cleaned inside and outside each day before starting the lights.

7. Repairing Lamp-posts—Whenever the Department of Public Works shall require that any lamp-post or posts shall be straightened or set plumb, or that any lamp-post or posts be repaired in any other manner in this contract specified, the same shall be done within twenty-four hours after said Department shall notify said party of the second part of said requirement.

8. Painting—All poles, hoods and lamp supports must be painted two coats of paint in such colors as may be directed, and such painting shall be done within thirty days after the poles and lamp supports shall have been erected.

9. Removing lamp-posts—All lamp-posts to be taken down which the Department of Public Works may require to be removed for any purpose.

10. Safety Apparatus—All switches, cutouts and other apparatus which may be necessary to prevent danger from fire or injury of any kind to persons or property, or which may be required for the safe and proper operation of the lamps, will be furnished and applied by the party of the second part at his own cost and expense.

11. Lamp and Wire Supports—All the requirements of these specifications concerning the erecting, painting, repairing, removing and maintaining of lamp-posts, shall also apply to any other form of lamp support that may be adopted, as well as to poles, brackets or other supports that may be erected for the conducting wires.

12. Locations of Lamps—The position, height above the pavement, and number of lamps for any particular locality, shall conform to such regulations as may be made by the Commissioner of Public Works.

13. Apparatus—The lamp-posts, poles, wires, conductors, lamps, globes, carbons and each and every other article or apparatus which may be necessary for electric-lighting, are to be furnished and maintained by the party of the second part, at its own cost and expense, and the lamps, wires and other conductors shall be thoroughly insulated and shall be placed in such locations and in such manner as will prevent them from being tampered with or handled by any unauthorized person or persons, and the Corporation of the City of New York shall not be held responsible for any injury or accident which may be occasioned by the conductors or electric current. It is provided, however, that wires for conducting the electric current, shall not be attached to or placed on any of the poles of the Police or Fire Department systems, and in case clear or plain glass globes should be used on the lamps, and such globes should be deemed objectionable, then the Commissioner of Public Works shall have the right to direct that such clear globes be removed and ground glass or opal globes substituted therefor.

14. Drawings, Models and Samples—The party of the second part shall furnish such drawings or cuts as may be required by the Superintendent of Lamps and Gas, to show clearly the form and dimensions of poles, lamps, hoods or other apparatus supplied under the terms of this contract; and the party of the second part shall also submit to the Superintendent of Lamps and Gas for examination and test such samples or models of carbons, insulators, globes, conductors, switches and cut-outs or safety devices as may be required, and all such drawings, models or samples shall be furnished free of expense to the city. Nothing in this paragraph is to be construed as requiring the party of the second part to disclose any secret device or process which would thereby become known and public to the disadvantage of the party of the second part.

15. Claim for Infringement of Patent.—The party of the second part shall indemnify and hold harmless the party of the first part against any and all claims which may be made by reason of any infringement of any patent right in the use of the lamps, dynamos, or any other article, apparatus or process which may be used in operating or maintaining the lamps under this agreement.

16. Whenever in these specifications or in this agreement, of which they form part, the words "party of the second part," or pronouns in place thereof, are used, such words and pronouns are to be understood as meaning and referring to the party or parties (as the case may be) of the second part of this agreement.

G. The prices fixed for the various services herein provided to be performed by the party of the second part are as follows:

For furnishing and erecting the aforesaid electric lamps, together with all poles, supports, conductors, insulators and appliances of every kind, and for operating, maintaining, painting, cleaning and attending the same for the aforementioned period the sum of thirty-five (35) cents for each lamp for each night.

H. United States Revenue Tax.—And it is hereby agreed, by and between the parties to these presents, that the parties of the first part shall not be called upon to pay to the said parties of the second part any amount for any tax which the Government of the United States may assess upon the illuminating material consumed by the public lamps within the district aforesaid.

I. And it is further agreed that the said parties of the second part shall have the right to lay, subject to the provisions of subdivision 5 of section 86 of the New York City Consolidation Act, and subject to the provisions of chapter 716 of the Laws of 1887, pipes or conductors at any time between April 1, 1888, and April 30, 1889, upon giving forty-eight hours' written notice to the Department of Public Works, subject, however, to the approval of the Commissioner of Public Works, of its intention to break up or open any street, avenue or public place, or part thereof, or to remove any part of the pavement thereof for the purpose of laying, subject to the last before-mentioned provisions of statute, or repairing the pipes or conductors; and the party of the second part shall, whenever it shall break up or open any street, avenue or public place, replace the earth which may be removed in so doing before sunset of the day on which such opening shall be made (the earth to be thoroughly tamped as the same is thrown into the trench or excavation), and replace the pavement, and repave and repair the same in such reasonable time and manner as the Department of Public Works may direct, and in as good and firm a manner as such street, avenue or public place, or part thereof, was in before being broken up for the purpose aforesaid, and shall from time to time, as required by the Department of Public Works, readjust and fill and finish the same as long as in the opinion of the Department of Public Works may be necessary on account of the settling of the earth or pavement caused by the opening. Also, all such repairs as shall at any time become necessary to said pavement by reason of laying the said pipe or conductors shall be made and done by said party of the second part at its own cost and expense. And it is also agreed that the party of the second part shall furnish to the Commissioner of Public Works a report weekly, stating therein the location of each and every opening made in the pavements during the preceding week. And no street, avenue or public place, or part thereof, shall or will be broken up or opened, or the pavement thereof removed, or be again filled up or repaired, except under the direction and supervision of a competent person, to be appointed by the Commissioner of Public Works; but the party of the first part shall not be called upon to pay any sum to any party or parties for the inspection of any pavement which may have been removed and repaved by the party of the second part, but the expense of such inspection shall be paid by the party of the second part when required by the Com-

missioner of Public Works. And it is further agreed that the said party of the second part shall and will in all things be governed by such reasonable rules and regulations as the said Department of Public Works may from time to time establish or direct relative to the opening of such streets, avenues and public places, or parts thereof, and laying down the pipes and conductors, and for lighting, cleaning and protecting the lamps aforesaid. And it is further agreed that, in order that the Commissioner of Public Works and his assistants may determine whether the lamps are lighted and extinguished in accordance with this contract, the parties of the second part shall furnish to the Superintendent of Lamps and Gas a map or maps showing the line or lines of each electric-lamp circuit and the location of the lamps on such circuit.

And the said party of the second part hereby further agrees that he will indemnify and save harmless the parties of the first part, their officers, agents and servants, and each of them, against and from all suits and actions of every name and description brought against them or any of them, and against and from all damages and costs to which they or any of them may be put by reason of injury to the person or property of another, resulting from negligence or carelessness in the performance of said work of lighting the streets, etc., or from any improper or defective material, machinery, implements, or appliance used in performing the same, or from any act or omission of said party of the second part or his agents. And the said party of the second part hereby further agrees that so much of the moneys due to him under and by virtue of this agreement, as shall or may be deemed necessary by the Commissioner of Public Works, shall or may be retained by said parties of the first part, until all such suits, actions and claims shall have been settled, and evidence to that effect furnished to the satisfaction of said Commissioner of Public Works.

J. And it is hereby further agreed that in case the said party hereto of the second part shall fail or neglect to keep the covenants herein contained, or any of them, or neglect to operate, repair, paint, clean, or fit up the lamps as before mentioned, or any of them, it shall be lawful for the Commissioner of Public Works to cause such work to be performed by other parties, and to deduct the expense thereof from any moneys which may be due or may become due to the party of the second part, and to hold the party of the second part and its sureties liable for the amount thereof which may be in excess of the prices stipulated in this agreement.

K. And it is further agreed, that for each and every electric-lamp which shall be extinguished or not lighted during any portion of the night, the party of the first part shall deduct from the bills of the party of the second part the full amount which the party of the second part would be entitled to receive if such lamp or lamps had been lighted during the whole night; and for each and every electric-lamp which shall be extinguished or not lighted the whole night, the party of the first part shall deduct twice the amount which the party of the second part would be entitled to receive if such lamp or lamps had been lighted the whole night, which deductions are hereby agreed upon, fixed and determined as the liquidated damages which the party of the first part will suffer by reason of such lamps being extinguished as aforesaid, and not by way of penalty.

L. And it is further provided, and these presents are upon the express condition, that if the said party of the second part, or its successors, shall not well and truly observe, perform, fulfill and keep all and singular the covenants and conditions hereinbefore mentioned and contained, on its part and behalf to be observed, performed fulfilled and kept according to the true intent and meaning of these presents, then and in that case it shall and may be lawful for the Commissioner of Public Works, on the part of the said parties of the first part, to declare this contract annulled and vacated, and thereupon it shall become and be thenceforth null and void.

M. And it is further agreed, that on or after the first day of each and every month from the month of June, 1888, to the month of May, 1889, both months inclusive, the party of the second part shall furnish proof, to the satisfaction of the Commissioner of Public Works, that it has fully performed and fulfilled this contract in all the particulars and conditions aforesaid during the preceding month, and particularly that it has operated and maintained the lamps at the candle-power hereinbefore specified, and that all the lamps have been kept clean and properly attended during all the time that the lamps were required to be kept lighted. Upon so doing, the Commissioner shall certify the fact, and in his certificate state the amount to which the party of the second part shall be entitled for all the duties performed by it during such preceding month, and annex thereto a requisition upon the Comptroller to pay the party of the second part therefor the sum to which it shall be so entitled, and without such proof, to the satisfaction of the Commissioner of Public Works, he shall not make any certificate nor requisition on the Comptroller, and the party of the second part shall also furnish proof to the satisfaction of the Comptroller that it has fully performed and fulfilled this contract in all the particulars and conditions aforesaid, and without such proof the said party of the second part shall not be or become entitled to any payment in respect to services which were required to be done, or should have been done, in such preceding month. On the requisitions above provided being presented to the Comptroller of the City, he shall, within twenty days thereafter pay to the party of the second part the amount thereof in lawful money.

N. And it is further agreed by and between the parties hereto, that if, at any time before or within thirty days after the whole work herein agreed to be performed has been completed and accepted by the parties of the first part, any person or persons claiming to have performed any labor or furnished any materials towards the performance or completion of this contract shall file with the said Commissioner of Public Works, Mayor and Comptroller, or with the bureau having charge of said work, and with the head of the Finance Department of the said City of New York, any such notice as is described in the act of the Legislature of the State of New York, passed May 22, 1878, entitled "an act to secure the payment of laborers, mechanics, merchants, traders and persons furnishing materials towards the performing of any public work in the cities of the State of New York," then and in every such case the said parties of the first part shall retain, anything herein contained to the contrary thereof notwithstanding, from the moneys under their control and due or to grow due under this agreement, so much of such moneys as shall be sufficient to pay off, satisfy and discharge the amount in such notice alleged or claimed to be due to the person or persons filing such notice, together with the reasonable costs of any action or actions brought to enforce such claim or the lien created by the filing of such notice. The moneys so retained shall be retained by the said parties of the first part until the lien thereon created by the said act and the filing of the said notice shall be discharged pursuant to the provisions of the said act.

And the said party of the second part hereby further agrees that it will furnish the said Commissioner of Public Works, Mayor and Comptroller with satisfactory evidence that all persons who have done work or furnished materials under this agreement, and who may have given written notice to the said Commissioner of Public Works, Mayor and Comptroller before or within ten days after the final completion and acceptance of the whole work under this contract, that any balance for such work or material is due and unpaid, have been fully paid or satisfactorily secured. And in case such evidence be not furnished as aforesaid, such amount as may be necessary to meet the claims of the persons aforesaid shall be retained from the moneys due the said party of the second part under this agreement, until the liabilities aforesaid shall be fully discharged or such notice withdrawn.

O. And it is hereby expressly agreed and understood by and between the parties hereto that the said parties of the first part, their successors and assigns, shall not nor shall any department or officer of the City of New York be precluded or estopped by any return or certificate made or given by the Engineer, Inspector or other officer, agent or appointee of said Department of Public Works or said parties of the first part, under or in pursuance of anything in this agreement contained, from at any time showing the true and correct amount and character of the work which shall have been done and materials which shall have been furnished by the said party of the second part, or any other person or persons under this agreement.

P. It is further provided that should the Board of Electrical Control in and for the City of New York, organized under the provisions of chapter 716 of the Laws of 1887, or their successors, at any time within the period provided for in this agreement, require or cause to be removed from the surface of any or all of the streets, avenues, piers, parks and places mentioned in this agreement, and to be placed, maintained and operated under ground, any or all of the electrical wires or cables used or to be used by the said party of the second part in any or all of such streets, avenues, piers, parks and places under the terms of this agreement, or should said board refuse to permit the erection of the necessary lamp-posts, poles and wires, then and in such case the said party of the second part will be and hereby is relieved from all obligation under this agreement to furnish any light in any or all of such streets, avenues, piers, parks and places from the surface of which the said Board of Commissioners, or their successors, may require the removal and the placing, maintaining and operating under ground of any or all of the electrical wires or cables used or to be used therein under the terms of this agreement, or in which said board may refuse to permit the erection of the necessary lamp-posts, poles and wires (but only as to such streets, avenues, piers, parks and places), until such requirement shall be complied with; and in like manner until such requirements is complied with and light furnished thereunder (unless light is in the meantime furnished by the said party of the second part in conformity with the specifications contained in this agreement), the parties of the first part will be and hereby are relieved from all obligations under this agreement to pay any moneys to the said party of the second part for furnishing any light in any or all of such streets, avenues, piers, parks and places last aforesaid. Neither party to this agreement shall have or make any claims thereunder against the other (including the bondsmen of the party of the second part, on the bond given in connection with this agreement), for any damages arising, directly or indirectly, by reason of any requirement or act of the said Board of Commissioners, or their successors, as aforesaid. Nothing in this paragraph or in this agreement contained shall be taken in any way to bind the said party of the second part to comply with any requirement of the said Board of Commissioners, or their successors; neither shall anything in this paragraph or in this agreement contained be taken in anyway to exempt the said party of the second part from any requirement of the said Board of Commissioners, or their successors.

Q. And the parties hereto declare that this contract is made with reference to the proposals hereto annexed which are to be taken as part and parcel of these presents.

In witness whereof, the said Mayor, Comptroller and Commissioner of Public Works have hereunto set their hands and seals, on behalf of the said parties of the first part, and the said party of the second part has caused its corporate seal to be hereunto affixed and its President and Secretary hereto set their hands, and said parties hereto have executed triplicate copies thereof, one of which

is to remain with the Commissioner of Public Works, one other to be filed with the Comptroller of the City of New York, and the third to be delivered to the said party hereto of the second part, the day and date herein first above written.

Witness:

H. F. KENT.

ABRAM S. HEWITT, Mayor of the City of New York, [SEAL.]
THEODORE W. MYERS, Comptroller of the City of New York, [SEAL.]
JOHN NEWTON, Commissioner of Public Works, [SEAL.]
EAST RIVER ELECTRIC-LIGHT COMPANY,

By SEYMOUR G. SMITH, President,

Attest:

EDWARD DUFFY, Secretary.

EXHIBIT "I."

Time Table for Lighting and Extinguishing the Public Gas Lamps for the Year from May 1, 1888, to April 30, 1889.

MONTHS.	BEGIN TO LIGHT.	BEGIN TO EXTINGUISH.	MONTHS.	BEGIN TO LIGHT.	BEGIN TO EXTINGUISH.	MONTHS.	BEGIN TO LIGHT.	BEGIN TO EXTINGUISH.
May 1, 1888	H. M. 6.45	H. M. 4.00	Sept 3, 1888	H. M. 6.15	H. M. 4.30	Jan. 1, 1889	H. M. 4.30	H. M. 6.30
" 7, "	6.55	3.40	" 10, "	6.05	4.40	" 8, "	4.40	6.30
" 14, "	7.00	3.30	" 17, "	5.55	4.50	" 15, "	4.50	6.25
" 21, "	7.10	3.15	" 24, "	5.40	5.00	" 22, "	5.00	6.25
" 28, "	7.15	3.15	Oct. 1, "	5.30	5.00	" 29, "	5.05	6.15
June 4, "	7.25	3.15	" 8, "	5.20	5.10	Feb. 5, "	5.10	6.10
" 11, "	7.25	3.15	" 15, "	5.10	5.20	" 12, "	5.20	5.55
" 18, "	7.30	3.15	" 22, "	5.00	5.30	" 19, "	5.30	5.55
" 25, "	7.30	3.15	" 29, "	4.45	5.35	" 26, "	5.30	5.45
July 2, "	7.30	3.15	Nov. 5, "	4.40	5.45	Mar. 5, "	5.40	5.35
" 9, "	7.30	3.15	" 12, "	4.30	6.00	" 12, "	5.50	5.20
" 16, "	7.20	3.15	" 19, "	4.25	6.00	" 19, "	6.00	5.10
" 23, "	7.20	3.15	" 26, "	4.20	6.10	" 26, "	6.10	4.55
" 30, "	7.10	3.30	Dec. 3, "	4.20	6.15	April 2, "	6.15	4.40
Aug. 6, "	7.10	3.45	" 10, "	4.20	6.20	" 9, "	6.25	4.30
" 13, "	6.55	4.00	" 17, "	4.20	6.20	" 16, "	6.30	4.20
" 20, "	6.45	4.10	" 24, "	4.20	6.25	" 23, "	6.40	4.10
" 27, "	6.30	4.20				" 30, "	6.45	4.00

Total number of hours, 4,000.

All the lamps to be lighted within one hour from the time of beginning.

INSTRUCTIONS TO LAMP-LIGHTERS.

I.—The lamps must be lighted and extinguished strictly in accordance with the time specified in this Time Table, and all the lamps must be lighted within one hour from the time of beginning.

II.—The lamps must be kept clean and in good condition; the top glass, sides and bottom glass must be thoroughly cleaned, both on the outside and inside of the lantern, three times in each week, and oftener if necessary to keep them clean, and dust and dirt must be brushed from the frames, and the glass street signs must also be clean. Lighters must bear in mind that with clean glass a greater brilliancy is obtained from the flame. In the winter season the snow must be brushed from the lanterns after each snow fall. Dirty and disordered lamps will be considered as evidence of a careless and incompetent Lamp-lighter.

III.—The glass street signs and house numbers must be kept in their proper positions. The sign bearing the name of any avenue or main street must face the roadway of such avenue or street. One of the signs bearing the name of a cross street must face the roadway of such street and the other sign must be placed on the opposite side of the lantern. Be careful to observe that the name does not face the inside of the lantern.

IV.—Advertising signs on the lamp-posts or lantern, or colored or ground glass in the lantern, are a violation of a Corporation ordinance, and must not be permitted, except the red glass near the fire-alarm boxes, and these must be kept in place.

V.—If a lighter, on extinguishing a lamp, should find a glass broken, he must replace the same before lighting time of the same day. If he should find a glass broken while lighting, he must replace the same before lighting time of the following day, and the bottom glass must be kept in place as well as sides and tops. If he should find any portion of the tin work broken, he must take the lantern to his Superintendent for repairs.

VI.—The burners must be kept in good condition to burn with a full, clear, steady flame, and not with a single or forked jet. If a burner, when lighted, should not emit the proper flame, then the same must be immediately cleared from its obstruction; and if it will not burn properly, another burner must be substituted.

VII.—If a Lighter, when lighting, finds that a lamp will not burn, he will leave such lamp and finish his route. He must then return to the unlighted lamps and endeavor to get them in burning order. If he cannot make the lamp burn, he must report the same on the following morning to the Superintendent of the Gas Company.

VIII.—Lamp-lighters will not be permitted to climb the lamp-posts. The lamps must be lighted either by means of a torch or the use of a ladder.

IX.—In case a lamp-post should be found broken or taken down, or requiring repairs, or an excavation should be made near the same which would endanger its safety, he must report the same at once to the Superintendent of the Gas Company, stating the correct location of the post and what repairs are required. If the post has been taken down, he must report by whom and for what purpose, and date when done. No excuse will be accepted from any Lamp-lighter who fails to report lamp-posts taken down or broken.

X.—Lighters must not break the lamp bottoms, nor the street-sign slots. Lamps furnished with these slots should be placed on corner lamp-posts.

XI.—Ladders must not be left tied to the lamp-posts.

S. McCORMICK, Superintendent of Lamps and Gas.

CORPORATION ORDINANCES RELATING TO THE PUBLIC LAMPS.

Sec. 68. Any person breaking, mutilating or obstructing any of the public lamps in the City of New York, shall be liable to a penalty of five dollars for each offense.

Sec. 69. Any person who shall break, misplace or carry away any of the glass street-signs now or hereafter to be placed in any of the public lamps, shall be liable to a penalty of three dollars for each offense.

Sec. 70. No person without permission of the Commissioner of Public Works, shall take up, remove or carry away any public lamp-post in the City of New York, under the penalty of ten dollars for each offense.

Sec. 71. No person shall remove, or cause or permit to be removed, any public lamp-post now or hereafter to be placed in front of their premises for the purpose of constructing a vault or otherwise, without the permission of the Superintendent of Lamps and Gas; and the owner or owners of such vault shall cause the lamp-posts so removed to be reset at their own expense immediately upon the completion of the vault, under the penalty of twenty-five dollars for each offense.

Sec. 226. No person shall attach, place, or paste, or cause to be attached, placed, or pasted, any sign or advertisement, or other matter, upon any public lamp-post, now erected in the City of New York or that may hereafter be so erected, under the penalty named in the next section.

Sec. 227. The violation of any of the provisions of the preceding section shall be punishable by a fine of not less than one dollar nor more than ten dollars.

Sec. 412. It shall not be lawful to erect any telegraph-post within a distance of ten feet of any public street-lamp. Any person offending against any of the provisions of this section shall be deemed guilty of a misdemeanor, and on conviction thereof before any of the police magistrates or justices of this city, shall be punished by a fine not exceeding ten dollars, or in default of the payment of such fine, by imprisonment not exceeding ten days.

Sec. 1953 of the New York City Consolidation Act of 1882. If any person shall willfully break, take down or carry away any glass lamp hung or fixed in any of the streets of the City of New York, or extinguish the lights therein, or by aiding or abetting in the same, shall be subject to a fine of twenty-five dollars, and in default of the payment of such fine the offender shall be committed to the penitentiary for the term of two months.

EXHIBIT "J."

NEW YORK, December 31, 1888.

MR. S. McCORMICK, Superintendent Lamps and Gas, Department of Public Works:

SIR—In accordance with your directions I have the honor to submit the following report concerning the methods and apparatus employed for testing the electric arc lamps used for public lighting in this city.

The specifications of the contract under which electric-lamps are furnished and operated for lighting the streets, parks, etc., contain the following clause:

"3. Luminous Intensity—Each lamp must give a light equivalent to that of not less than one thousand standard sperm candles, weighing one-sixth of a pound each and burning as near as possible one hundred and twenty grains of spermaceti per hour. Measurement of the electric-lamp shall be made by comparison with a standard gas, oil or other lamp of at least twenty-candle power, using the improved Bunsen photometer. The candle-power of the standard lamp shall be determined by direct comparison with standard candles. The electric lamp shall be measured in a direction making an angle of 40 degrees with and below the horizontal plane, the axis of the carbons being vertical, with the positive carbon uppermost. After such observation the electric-lamp shall be revolved 90 degrees about its vertical axis, in one direction only, and the mean of ten such observations shall be taken in determining the candle-power. The measurements shall be made with the globe removed from the lamp and with the light of the 'arc' unobstructed. All lamps to be furnished and operated under this contract are expressly required to give a steady and uniform light without undue flickering, hissing or pumping. Each lamp must be operated at not less than four hundred and twenty-five Watts in the arc, to be determined by the electrical measurement of the current and difference of potential between the carbons, using approved instruments properly tested and calibrated."

In order to make the tests of the public lamps in accordance with the above requirements a set of ammeters and voltmeters of the Ayrton and Perry pattern were procured, and a special form of Bunsen photometer was designed and constructed in accordance with the following specifications:

"Photometer Bar—To be in two parts, hinged at the middle so that it may be folded for transportation, dowel or other devices to be provided at the joint, so that when opened for use the two parts will come together fair. To have two sets of graduation on each side; one set to be in inches and tenths and to extend the full length of the bar. The other set to be for direct comparison of lights placed 100 inches apart and to read ratio to one-tenth. This graduation to extend over half the bar only. Both graduations to be alike on both sides of the bar and to be made in boxwood. The bar to be made of hard wood, and to be supported on two removable brass pillars, holes for which in both bar and table to have brass bushings.

Table—To be not less than one and one-half inches thick, with cleats to prevent warping. To be hinged at middle for folding, with device to hold table straight and rigid when opened. To have brass ring-socket to receive lamp-base and cleats for base of candle-balance, so that when lamp and balance are placed on the table the lamp and candle flames will be in proper position. To have small brass hooks for plumb-lines, and to be painted dead black.

Supports for Table—Two light, wooden horses to be provided of such height that the centre of the sight box shall be five feet above the floor. Horses to be painted dead black.

Glass Prism and Tripod—The holder for the reflecting prism to be supported in a brass tube to which three light hardwood folding legs are attached. Hook for plumb-line to be placed at lower end of the tube. Hooks to be provided to connect legs with lower end of tube when legs are spread. The glass prism to be of best workmanship obtainable, to be totally reflecting, and the two faces at right angles to each other to be about two inches square. To be accurately mounted, permitting free motion about the vertical axis, the horizontal axis, and a third axis at right angles to the latter. The adjustment must be such that these three axes intersect in a single point which lies in the centre of the back of the prism, and which point always remains fixed whatever adjustment is given to the prism. Clamp screws to be provided for each axis. A removable brass pin to be fitted in the holder so that when substituted for the prism, its point will correspond in position to the centre of the back of the prism.

Sight-box and Carriage—Carriage to be alike on both sides so that readings may be taken on either side of the bar. To have index so designed that readings may be taken on either graduation and to be provided with two adjustable mirrors for illuminating the graduations. Sight-box to be of general form shown on sketch, and to be so made as to permit the ready removal of the screen. Two screens to be provided, one for measuring the power of standard lamp and the other for comparing standard with electric-lamp. The box to revolve about vertical axis and to have clamp screw for holding in position.

Standard Lamp—To be what is known as a "constant level mammoth student lamp," adapted to burn mineral oil. To be carefully made and to be provided with a blackened metal screen, having an opening so adjusted that only the "solid" or brightest part of the flame affects the screen in the sight-box, one dozen carefully selected chimneys and a supply of wicks to accompany the lamp.

Candle-Balance—To be of the most approved pattern adapted to weigh grains accurately and to have sockets for two candles.

Miscellaneous—There are also required for use with the apparatus the following articles: One stop-watch, a chalk-line and chalk, one twenty-foot tape-line, one scratch-awl, one scissors, and one wooden square, two by three feet.

Packing Arrangements, etc.—The photometer bar, table and tripod, to have straps and hooks to secure them when folded, and the photometer bar to have an oilcloth or other waterproof bag or case. A substantial wooden chest to contain all parts of the photometric and electric apparatus, except the bar, tables, horses and tripod, to be furnished and to be provided with suitable lock and key.

The above specifications in connection with the drawing, Plate I, will render the construction of the apparatus clear.

The measurements of the electric-light are made in the following manner: The electric-lamp to be tested is supported at a convenient height above the floor and in such a manner that it may be turned about its vertical axis. An ammeter is placed in circuit with the lamp and a voltmeter is connected to the terminals. A plumb-line is suspended from the lamp-frame directly under the "arc," and the point on the floor under the point of the plumb-bob is marked with chalk. Through this point a chalk-line $b c$ fig. 1, plate II, is struck in a convenient direction and on this line a distance $b c$ equal to $a b \times \tan 50^\circ$ is laid off. A cord is then stretched from c to the point of contact a between the lamp carbons, which is of course the position of the arc when the lamp is burning, and the tripod with the brass point in the socket is set so that the point just touches the cord. Through the point d indicated by the point of the plumb-bob suspended under the tripod a chalk-line $d' e$ is struck at right angles to $b' c'$ (fig. 2). Over this line the photometer is set by the aid of the plumb-lines suspended underneath the table; the position being such that the whole distance, $a f \times d' e$ from the electric-lamp to the standard is some even number of inches for convenience in making the computations.

The candle-power of the standard lamp is first determined in the usual way by comparison with the standard candles. The candle-balance is then removed, the prism placed in its support and adjusted so that the reflected beam of light from the electric-lamp is parallel to the photometer bar, and the comparison between the electric-lamp and the standard proceeded with. The readings are now taken on that portion of the bar graduated in inches and tenths, the zero being at the standard. It is not found to be practicable to have the bar graduated for a fixed distance between the electric-lamp and the standard, since it is not always convenient to set up the apparatus so that this distance shall be the same. After each set of readings on the photometer the ammeter and voltmeter are read, the electric-lamp turned 90 degrees about its vertical axis, and the observations repeated. Half of each set of photometer readings are taken on one side of the bar and half on the other.

Since the readings taken when measuring the electric-lamp are inches and tenths, the relative intensities of the lamp and the standard is determined by taking the mean of these readings and applying the well-known law of the square of the distances from the lamps to the screen. A correction for the absorption of light by the prism is afterwards applied, the amount of this absorption being determined experimentally.

At the conclusion of the observations with the electric-lamp the candle-power of the standard lamp is again determined and the mean of the two determinations is used in computing the candle-power of the electric-lamp.

The apparatus must of course be used in a room where other lights can be extinguished, or screens must be so arranged as to keep all light, except that of the lamps or candles used in the test from affecting the screen, and strong drafts which affect the oil-lamp and candles must be provided against.

As a further illustration of the methods of measurement the following details of two sets of observations are given:

"Brush" Lamp.

Candle-power of standard lamp—First measurement, 28.308.

Ammeter.	Vol meter.
9.9	45.0
9.7	45.0
9.6	46.5
9.7	46.5
9.65	47.3
Sum.....	230.3
Mean.....	46.06 volts.

Readings on photometer comparing electric-lamp with standard lamp.

First.	Second.	Third.	Fourth.
31.5	31.6	29.9	31.1
30.7	31.3	31.0	31.0
31.7	31.0	30.8	31.8
31.2	31.3	30.7	31.0
31.2	30.1	30.8	31.5
30.8	31.3	31.7	31.3
32.0	32.4	31.0	31.6
31.3	32.0	30.5	31.9
31.4	32.4	30.5	31.7
31.5	32.3	29.4	32.3
Mean. 31.33	31.57	30.63	31.52

31.33
31.57
30.63
31.52

4)125.05

31.2625 Grand mean.

Distance between the electric-lamp and standard lamp, 242 inches.

 $242 - 31.2625 = 210.7.$
 $(210.7)^2$
(31.3)² = 45.314 = ratio of electric lamp to standard.

Candle-power of standard lamp—

2d measurement.....	28.545
1st	28.308

Mean 28.426

Correction factor of prison..... 1.192
 $28.426 \times 45.314 \times 1.192 = 1535.41$ mean candle-power of electric-lamp measured 40° below horizontal plane.9.71 (amperés) \times 46.06 (volts) = 447.24 mean Watts in lamp.

"Fenny" Lamp.

Candle-power of standard lamp, first measurement, 21.062.

*Ammeter.

Voltmeter.

.....	33.5
.....	32.5
.....	31.5
.....	34.5
.....	34.3
Sum.....	166.3
Mean....	22 amperés.
	33.26 volts.

(*The ammeter had not sufficient range to measure the current. Upon the statement of the Superintendent of the Station the current was assumed at 22 amperés).

Readings on photometer comparing electric-lamp with standard lamp:

First.	Second.	Third.	Fourth.
34.7	29.9	33.0	26.7
34.0	30.5	35.4	26.7
32.2	26.7	33.9	25.1
32.3	28.7	34.7	24.7
31.6	28.7	32.2	25.0
30.0	27.1	31.9	24.7
32.6	25.7	30.3	24.3
33.2	28.8	29.7	25.5
29.0	28.3	26.8	25.0
37.3	26.0	32.3	25.3
32.69	28.04	32.02	25.30

32.69
28.04
32.02
25.30

4)128.05

29.5125 Grand mean.

Distance between electric-lamp and standard = 244.56 inches.

 $244.56 - 29.51 = 215.05.$
 $(215.05)^2$
(29.51)² = 53.105 ratio of electric-lamp to standard.

Candle-power of standard lamp—

2d measurement.....	22.297
1st	21.062

Mean 21.679

Correction factor of prison..... 1.192

21.679 \times 53.105 \times 1.192 = 1372.3 mean candle-power of electric-lamp measured 40° below the horizontal plane.22 (amperés) \times 33.26 (volts) = 731.72 mean Watts in lamp.Very respectfully,
JOHN MILLIS.

Document "K."

REPORT OF THE SUPERINTENDENT OF REPAIRS AND SUPPLIES.

DEPARTMENT OF PUBLIC WORKS, BUREAU OF REPAIRS AND SUPPLIES,
NEW YORK, January 3, 1889.

Hon. D. LOWBER SMITH, Commissioner of Public Works:

SIR—I have the honor to submit to you report of the transactions of this Bureau for the quarter ended December 31, 1888, as follows:

NEW COURT-HOUSE.

A new ash rail has been constructed, leading to and from the main entrance to the building, and the same shellacked.

In the Surrogate's Court and offices linoleum has been laid.

CITY HALL.

In the office of the Supervisor of the City Record shelving has been placed for the safe keeping of City property.

Scaffolding has been erected, the dome of the clock tower repaired and the work scraped of scale, shellacked and painted. Repairs have been made to grate and fire backing reset, the chimney flue cleaned and galvanized-iron top put on.

A speaking-tube has been put up in the basement, connecting the police station with the repair shop.

In the several offices of the Third Precinct general repairs have been made; the plastering repaired, the ceilings and walls washed off and painted, the hardwood varnished, the woodwork painted and the iron railing and radiators bronzed, the flues cleaned, the chimney tops taken down and reset.

BROWN-STONE BUILDING.

The furnace in basement under the boiler has been relined, cheek-blocks put in and arch-plates on top and sides of feed-door set.

In Part I. of General Sessions the plastering has been repaired, the walls and ceilings washed off, calcimined and painted, the grained work touched and varnished. The new door at the basement entrance of the building has been painted.

Iron-wire railing has been put up in the offices of the Clerk to the District Attorney and one of the Assistants.

On the roof a portion has been stripped of all damaged sheets and repaired and painted.

The walls inside the prison pen of Part II. have been lined with galvanized iron and iron guards put on windows and top of pen.

NO. 49 BEEKMAN STREET.

Chimney tops with caps and bases have been put up.

HALL OF RECORDS.

The chimney tops have been taken down, repaired and put up, the chimneys cleaned and necessary smoke pipe and casting furnished.

Repairs and alterations have been made to the plumbing and gas-fitting.

NO. 31 CHAMBERS STREET, D. P. W.

A large rack for the safe keeping of Boulevard lamps has been constructed in basement.

In the Water Register's office repairs have been made to plastering, the walls touched up and painted, and closets relettered.

Signs on the glass panels of Chambers street entrance have been lettered in gold.

The furnaces under the steam-boilers have been relined with fire-brick, the bridge walls rebuilt, new jamb-blocks and arch brick put in.

POLICE AND CIVIL COURTS.

Third District Court-house—The slate roofs have been repaired, damaged slates removed and new ones put in; the flashings repaired; a new copper flashing put up on the ridge over the court-room; the gutters have been repaired where necessary and painted; the ventilators over the prison pen have been repaired and the roof painted.

The old casings behind the dials in the clock tower have been removed and a platform and air-shaft built in the dial room. The room has been painted, the gas-fitting altered so as to give increased light to the dials, and the clock-spindles enclosed in galvanized-iron boxes; the elevator has been repaired, the gearing altered, and a new rope put in.

CITY PRISON COURTS.

First District Police Court—Heavy iron guards have been placed in the windows on Franklin street; the bars pointed on top and leaded into the stone sills, and the cross-bars securely fastened to the jambs.

Special Sessions—An iron grating has been placed in the door of the prison pen, and the iron railings altered, and some new railing furnished.

Fourth District Police Court—An iron guard has been placed on the window of the prison pen.

Second District Civil Court—The walls, ceiling and woodwork of the hall and stairway have been washed off, plastering repaired, ceiling and walls painted and calcimined, woodwork grained and varnished. The partitions, desks, woodwork and trim in the several rooms were grained and varnished, and a sign in gold placed over the entrance; a storm-door has been put up at the entrance to clerk's office; the plumbing and gas-fitting has been completed as provided for by the contract and specifications; blackwalnut railings have been put up to enclose the judges' bench and the bar, mats, carpets, and linoleum have been laid; new desks, tables and chairs furnished, and new stoves, with necessary pipe and fixtures put up.

CORPORATION YARD, RIVINGTON STREET.

The roof and second story of the office building in the yard have been removed, a new felt and gravel roof put on, the walls repaired and pointed up with cement; a new floor laid, window sash repaired, new doors and window-shutters put in; the office plastered, the ceilings and walls calcimined, woodwork painted; a new water-closet and wash-basin put in, and gas-pipe and fixtures put up.

Repair Shops, No. 134 West Thirtieth street—A felt and gravel roof has been put on the shed, and a new galvanized gutter and leader put up.

MARKETS.

Washington Market—The roof has been repaired; a galvanized-iron flashing has been put around the gravel portion of the roof; the damaged tin removed and replaced with IX tin; leaks soldered and the tin and iron-work painted with metallic paint. The glass skylight has been puttied up where needed, and new basket strainers put in the leader openings. New galvanized-iron smoke-pipe put up, and repairs made to the iron awning on Washington and West street sides of the building. The doors have been repaired and rehung where necessary. A new door put in on Fulton street side, and glass panels and wire guards put in several of the doors, and a sash-light put over one of the Fulton street entrances. Repairs have been made to the flooring in several places in the market, and the glazing repaired where necessary.

Vesey Street Pier—Repairs have been made to the pier in several places, the damaged timbers removed and replaced with 4 inch by 12 inch spruce plank laid on 5 inch by 10 inch stringers.

West Washington Market (New)—Ten new signs in black letters have been painted on the interior of brick wall surrounding the market, to designate the several avenues therein.

Fulton Market—Repairs have been made to the gravel roof in several places; the bulkhead of the stairway relined with IX tin, three courses high, and painted with metallic paint. New basket-strainers put in the leaders. The slate roofs on the towers have been repaired, and the valleys relined with IX tin and painted with metallic paint.

Jefferson Market—The gutters of the centre building have been relined with IX tin, galvanized-iron connections made with the leaders, extra heavy basket-strainers put in. The top flashing of the skylights and the iron awning and leaders repaired.

Tompkins Market—Repairs have been made to the leaders on the porticos on Sixth and Seventh street sides of market, and iron wire guards placed on the sash in the doors and windows.

Centre Market—The tin roof on the Grand street end of the building has been repaired, the gutters relined where needed and the roof painted with metallic paint.

Clinton Market—The old flooring and timbers in the fish market have been taken up and space underneath cleaned and disinfected, and a new yellow pine floor laid on 3 inch by 9 inch spruce timbers. Repairs have also been made to the flooring in several places in the market.

The Gansevoort, now known as the new "West Washington Market," has been completed during the quarter. The name has been changed by a resolution of the Board of Aldermen. The market comprises ten buildings, each 180 feet by 50 feet, two stories high, covered with a trussed roof. Substantial foundations have been laid ten feet below the surface, constructed of concrete, brick masonry and granite blocks, upon which a heavy fine-cut granite sill-course rests and supports cast-iron columns and wrought-iron girders, filled in with rolling sheet steel. When these shutters are opened, the entire front of each building presents a continuous line of stalls. The second story is built with brick and lighted with large windows. This story is arranged for offices and store-rooms. A centre wall running lengthwise with each building is pierced with archways and provided with air-ducts carried above the roof. These ducts, together with a louver placed over the ridge of the roofs, are intended to make the ventilation of the market as perfect as possible. A sidewalk, covered with a corrugated iron awning, extends around each building. Roadways running east and west and one transverse avenue afford the means of transit through these buildings, and at the same time afford a street frontage to each stall. The exterior of the building presents a continuous line of enclosure, pierced at each roadway with a large archway opening into each of the streets. A square tower, with pointed roof, rises above the roof at each of the boundary corners. Gabled ends, heavily corniced, and deep paneled pediments and intermediate mansards on the east and west front of the buildings make the finish. On the fronts, east and west, the name of the building—West Washington Market—appears in large projecting letters on terra cotta blocks, built in the walls; the names of the streets are placed in the spandril of arches over each street, in terra cotta blocks, similar to those before described. The five interior streets are paved with granite-block pavement, have sewers and gas-mains, and electric-lights, suspended over the centre of the streets, light the roadways. The 10 market buildings contain about 440 stalls. The length of the frontage of the buildings is 4,600 feet. The plot of land on which the market buildings stand has been reclaimed from the water by filling in, embracing an area of 150,000 square feet. The work on these buildings was commenced May 9, 1887, under a contract which stipulated for their completion in 350 working days, and the work was completed in 340 working days, notwithstanding the unusual severity of the weather during the period in which the work was in progress.

ARMORIES.

Seventh Regiment Armory—Repairs have been made to the gravel roof, and the tin roof over main drill-room.

Ninth Regiment Armory—The steam boilers have been covered with asbestos fire proof plaster, and the steam and return pipes covered where needed with asbestos felt and canvas duck.

Sixty-ninth Regiment—The furnaces under the steam-boilers have been relined with fire-brick new jamb blocks and arch plates put in; the flues cleaned and repaired, and the steam-pipes covered where necessary with asbestos felting and canvas duck.

An iron gate and short piece of railing has been put up on Hall place side of the building.

FREE FLOATING BATHS.

The free floating baths have been towed from their summer stations to winter quarters in Erie Basin, South Brooklyn, where they are now safely beached.

In addition to the foregoing, repairs have been made to the glazing and furniture in the several offices. The constant repairs to the plumbing, steam and gas-fitting in the various buildings called for and made necessary through the severity of the winter and careless usage. The furnishing of law books, fuel and office supplies, form a very considerable portion of the work of the Bureau.

Respectfully,

W. G. BERGEN, Superintendent Repairs and Supplies.

Document "L."

REPORT OF THE SUPERINTENDENT OF INCUMBRANCES.

DEPARTMENT OF PUBLIC WORKS—BUREAU OF INCUMBRANCES,
No. 31 CHAMBERS STREET,
NEW YORK, January 2, 1889.

Hon. D. LOWBER SMITH, Commissioner of Public Works:

DEAR SIR—I submit herewith the following report of the operations of this Bureau for the quarter ending December 31, 1888 (months of October, November and December, 1888), together with a condensed statement of the entire business transacted during the year 1888:

1,330 complaints of obstructions etc., received and attended to.
701 seizures and removals of obstructions made.
1,648 building permits issued.
5 permits issued to cut down shade trees.
182 miscellaneous permits issued.
350 notices issued to repair defective sidewalks.
4 notices issued to repair defective vault covers.
Expense of seizing and removing 701 articles, including 2,435 loads of dirt, refuse, etc., and 180 dead and dangerous trees, also 200 telegraph poles and 540,083 lineal feet of telegraph wire. \$6,364 28

Total expenses for the quarter \$8,289 26

Received from owners for the redemption of seized articles. \$437 90

Received from public sale of unredeemed goods, etc., November 8, 1888. 305 97

Total \$743 87

All of which was duly paid over to the City Chamberlain.

Salary account—Appropriation \$7,500 00

Expended up to December 31, 1888. 7,937 92

Balance \$462 08

Appropriation for the removal of obstructions in streets and avenues \$22,000 00

Amount expended up to December 31, 1888. 18,572 06

Balance \$3,427 94

During the year 1888, the total number of complaints received and attended to regarding obstructions, etc., was 6,281.

Removals to the Corporation Yards. 2,588

Removals of loads of dirt, stone, refuse, etc. 4,505

Removals of dead and dangerous trees 778

Removals of telegraph poles. 411

Removals of lineal feet of telegraph wire. 809,810

Number of builders' permits issued. 7,772

Number of special permits issued. 1,002

Number of permits issued to cut down trees. 34

Number of notices issued to repair and reflag defective sidewalks. 1,089

Number of notices issued to repair and replace dangerous and defective vault-covers. 53

Total expenditure for the year. \$25,609 98

As follows:

Labor at the different Corporation Yards. \$460 00

Transportation expenses. 834 90

Removals of redeemable obstructions. 5,307 65

Removals of dirt, stone, refuse, etc. 3,753 75

Removals of dead and dangerous trees. 2,723 00

Removals of telegraph poles. 1,644 00

Removal of telegraph wire. 1,923 25

Salaries for Inspectors, Keepers of Corporation Yards and detailed laborers. 8,363 43

Rent of Corporation Yard. 600 00

Total \$25,609 98

Actual cost of removals of redeemable obstructions. \$5,307 65

Amount received from owners and public sales of same. \$4,320 02

Auctioneer's fees. 112 44

Difference 4,432 46

Receipts for articles redeemed by owners \$3,195 55

Receipts from public sales of unredeemed articles, etc., at the Corporation Yards. \$1,124 47

Auctioneer's fees. 112 44

Total 1,236 91

Total \$4,432 46

Very respectfully,

JOHN RICHARDSON, Superintendent of Incumbrances.

Document "M."

REPORT OF THE WATER REGISTER.

BUREAU OF WATER REGISTER, No. 31 CHAMBERS STREET,
NEW YORK, December 31, 1888.

Hon. D. LOWBER SMITH, Commissioner of Public Works:

SIR—I herewith transmit statement of moneys received for water rents, penalties and taps, for the quarter ending December 31, 1888:

	Principal.	Penalties.	Taps.
October	\$192,742 93	\$3,560 20	\$1,265 50
November	92,574 92	1,287 05	960 50
December	116,122 91	796 80	837 00
Total	\$401,440 76	\$5,644 05	\$3,063 00

Deposit to the credit of "Water-meter Fund, No. 2"—

October \$84 69

November 1,398 02

December 2,619 08

Total \$4,101 79

"Special Fund—Repaving Streets"—

October	\$1,417 00
November	839 00
December	668 00
Total	\$2,924 00

I have the honor to also submit a statement of moneys received for the year ending December 31, 1888, and placed to the credit of their respective accounts with the City Chamberlain:

TOTAL RECEIPTS.

Regular water rates and penalties	\$1,461,460 30
Water by meter measurements	937,655 92
Permits for water for building purposes	38,516 44
Penalties for using hose	330 00
Total	\$2,437,962 66
Water rates returned in arrears	\$105,557 35
Water by meter measurements returned in arrears	48,485 95
Pipe tapping receipts	154,043 30
Restoring pavements	10,788 50
Total	\$2,602,794 46
Total	\$13,146 50

Receipts for Meters and Meter Setting during the Year 1888.

"Water-meter Fund, No. 1"	\$20 15
"Water-meter Fund, No. 2"	\$10,271 21
Amount returned to Bureau of Arrears	4,465 31
Total	\$14,736 52

Croton water supplied to shipping for the year is as follows, viz.:

Receipts from meters on docks	\$88,142 62
Receipts from 598 permits for steamboats, amounting to	19,711 99
Receipts from 46 permits for engines on wharves, etc., amounting to	702 93
Total	\$108,557 54

1,394 permits were issued for building purposes during the year.

2,614 permits were issued for taps during the year.

The following table shows the work performed by the Inspectors of Waste of Water for the year ending December 31, 1888.

WHOLE NUMBER OF BUILDINGS EXAMINED.	WHOLE NUMBER WHERE PLUMBING WAS DEFECTIVE.	FAUCETS.		HYDRANTS.		URINALS.		PIPES.	BALL COCKS.	HOSE FOR WASHING.
		Leak.	Waste.	Leak.	Waste.	Leak.	Waste.	Burst.	Wanted.	Sidewalks.
6,668	823	187	123	67	55	64	52	63	15	192

The amount received during the year for restoring pavements of \$13,146.50 is reserved for repairing openings in streets made for the purpose of connecting water-pipes with buildings, etc., etc. The special meter fund account of \$10,271.36 is reserved and set apart to reimburse the city for advances made for meters and meter settings.

The provisions of chapter 559 by which the Commissioner of Public Works is authorized and empowered to cancel all charges for extra water standing on the books of the Department of Public Works and which shall have stood thereon for six years and upwards is being carried out as rapidly as possible. In regard to the rules and regulations of the Department for the prevention of waste, the following have been adopted, prescribing the penalty for each case of violation.

No owner or tenant will be allowed to supply water to another person or persons.

All persons taking water from the city must keep their own service-pipes, street-tap and all fixtures connected therewith in good repair, protected from frost, at their own risk and expense, and shall prevent all waste of water.

The use of hose to wash coaches, omnibuses, wagons, railway cars or other vehicles, or horses, cannot be permitted.

No horse-troughs or horse-watering fixtures will be permitted in the street or on the sidewalks, except upon a license or permit taken out for that purpose. All licenses or permits must be annually renewed on the 1st of May. Such fixtures must be kept in good order, and the water not allowed to drip or waste by overrunning the sidewalk or street, or to become dangerous in winter by freezing in and about such troughs or fixtures.

No hydrant will be permitted on the sidewalk or in the front area, and any hydrant standing in a yard or alley, attached to any dwelling or building, must not be left running when not in actual use; and if the drip or waste from such hydrant freezes and becomes dangerous in winter, the supply will be shut off in addition to the penalty of five dollars imposed.

Taps at wash-basins, water-closets, baths and urinals, must not be left running, under the penalty of five dollars for each offense, which will be strictly enforced. Fountains or jets in hotels, porter-houses, eating-saloons, confectioneries or other buildings, are strictly prohibited. The use of hose for washing sidewalks, stoops, areas, house-fronts, yards, court-yards, gardens, and about stables, is prohibited. Where premises are provided with wells, special permits will be issued for the use of hose, in order that the police or inspectors of this Department may understand that the permission is not for the use of Croton-water.

Opening fire-hydrants to fill hand-sprinklers or other vessels will not be allowed.

The penalty for a violation of any of the preceding rules and regulations will be five dollars for each offense, and if not paid when imposed, will become a lien on the premises in like manner as all other charges for unpaid water-rates.

WASTE OF WATER.

One of the great sources of waste throughout the city for years past, viz.: that of using hose for washing sidewalks, stoops, areas, and house-fronts during the warm months, where citizens have been in the habit of attaching a hose and serving water through a $\frac{1}{8}$ -inch tap in the hands of servants, and playing the same for hours, has, in a measure, been checked, but not entirely eradicated. It is to be hoped, however, that by a systematic effort, that this abuse in the consumption of water will be brought to an end, as the rules of the Department, under the Laws of 1887, authorizing penalties to be imposed, must soon remedy this evil which has been so difficult to entirely suppress.

A list of charitable institutions which have applied for exemption from charges for Croton water rents under the provisions of chapter 696 of the Laws of 1887 is herewith submitted, it having been decided that they are entitled to the benefits of exemption.

The provisions of the act in question are as follows:

AN ACT to provide hospitals, orphan asylums and other charitable institutions in the City of New York with water and remitting assessments therefor.

Passed June 25, 1887.

The People of the State of New York, represented in Senate and Assembly, do enact as follows:

Section 1. The several hospitals, orphan asylums and homes for the aged, now existing in the City of New York (or which may hereafter be established therein), are hereby exempted from the payment of any sum of money whatever to said city for the use of water taken by the same from said city, and water shall be supplied to the same by said city in sufficient quantity for all purposes for which it is now used by said societies and institutions, or which may be necessary to be used by the same, free of all charge whatsoever, and the real estate necessarily used as an hospital, orphan asylum or home for the aged of any such institutions aforesaid, is hereby released, discharged and exempted from all lien and charge for water heretofore used and remaining unpaid for at the time of the passage of this act, or which may hereafter be used by any such institution, society or corporation.

Section 2. The real property situate in the City of New York, necessarily now in use, or which may hereafter be necessarily used and devoted to an hospital, orphan asylum or homes for the aged, which has for its objects either the care, support or education of orphans or of the sick, the infirm or aged, shall be and hereby is declared discharged and exempt from all assessments laid or made for use of water and sales thereunder, and from all such assessments hereafter, so long as the same shall be owned by any such corporation, society or institution aforesaid, and used for the purposes herein mentioned, and whenever a sale and conveyance thereof shall be made to any person or corporation other than those mentioned in this act, thereupon the real estate so sold and conveyed and not so used, shall be thereafter subject to assessment in the same manner as other real estate situate in the City of New York.

INSTITUTIONS EXEMPTED.

Association for the relief of Aged and Indigent Females.	N. Y. Post Graduate Hospital.
Baptist House for Aged and Infirm Persons.	N. Y. Society for the relief of Ruptured and Crippled.
Colored Orphan Asylum.	Orphan Home and Asylum.
French Benevolent Society.	Presbyterian Hospital.
German Hospital and Dispensary.	Roman Catholic Orphan Asylum.
Hebrew Sheltering Guardian Society.	Roosevelt Hospital.
Home for the Aged and Indigent Woman.	Sisters of the Order of St. Dominick.
Home for the Aged and Infirm Hebrews.	Skin and Cancer Hospital.
Leake and Watts Orphan House.	St. Elizabeth's Hospital.
Manhattan Dispensary and Hospital.	St. Francis' Hospital.
Manhattan Eye and Ear Hospital.	St. James' Hospital.
Methodist Episcopal Church Home.	St. Josephs' Asylum.
Montefiore Home for Chronic Invalids.	St. Josephs' Hospital.
Mt. Sinai Hospital.	St. Josephs' Home for the Aged.
N. Y. Asylum for Lying-in-Women.	St. Luke Hospital.
Nursery and Childs Hospital.	St. Mary's Free Hospital for Children.
N. Y. Cancer Hospital.	St. Philip's Parish Home.
N. Y. Hospital and Bloomingdale Asylum.	St. Vincent's Hospital.
N. Y. Homeopathic Hospital.	Trinity Corporation (50 Varick street).
N. Y. Ophthalmic Hospital.	Womans Hospital.

REVENUE.

THE FOLLOWING TABLE EXHIBITS THE YEARLY REVENUES DERIVED FROM CROTON WATER, FROM ITS INTRODUCTION INTO THE CITY IN THE YEAR 1842 TO JANUARY 1, 1889.		STATEMENT OF ARREARS OF WATER RENTS RETURNED TO THE COMPTROLLER, CLERK OF ARREARS, ACCORDING TO LAW, AND COLLECTED BY CLERK OF ARREARS.	TOTAL REVENUE.
From Oct. 5, 1842, to May 1, 1843..	\$32,053 74	.....	\$32,053 74
" May 1, 1843, " 1, 1844..	84,444 68	.....	84,444 68
" " 1, 1844, " 1, 1845..	117,227 86	.....	117,227 86
" " 1, 1845, " 1, 1846..	163,900 52	.....	163,900 52
" " 1, 1846, " 1, 1847..	193,346 24	.....	193,346 24
" " 1, 1847, " 1, 1848..	219,416 72	.....	219,416 72
" " 1, 1848, " 1, 1849..	250,081 51	.....	250,081 51
" " 1, 1849, to Dec. 31, 1849..	259,532 97	.....	259,532 97
" Jan. 1, 1850, " 31, 1850..	458,951 87	.....	458,951 87
" " 1, 1851, " 31, 1851..	458,789 78	\$30,379 20	489,168 98
" " 1, 1852, " 31, 1852..	578,426 48	22,329 55	600,756 03
" " 1, 1853, " 31, 1853..	650,021 20	22,230 66	672,251 86
" " 1, 1854, " 31, 1854..	703,730 83	35,032 45	738,763 28
" " 1, 1855, " 31, 1855..	790,077 70	47,382 34	837,460 04
" " 1, 1856, " 31, 1856..	778,292 77	57,670 46	835,963 23
" " 1, 1857, " 31, 1857..	823,156 35	57,671 60	880,827 95
" " 1, 1858, " 31, 1858..	840,928 08	62,892 92	903,821 00
" " 1, 1859, " 31, 1859..	855,261 47	55,410 05	910,671 52
" " 1, 1860, " 31, 1860..	868,843 38	48,005 51	916,849 09
" " 1, 1861, " 31, 1861..	891,430 81	50,836 98	942,267 79
" " 1, 1862, " 31, 1862..	893,896 82	62,738 23	956,635 05
" " 1, 1863, " 31, 1863..	982,031 26	55,331 11	1,037,362 37
" " 1, 1864, " 31, 1864..	1,006,191 77	50,536 18	1,056,727 95
" " 1, 1865, " 31, 1865..	1,056,772 49	49,478 75	1,106,251 24
" " 1, 1866, " 31, 1866..	1,125,605 96	41,219 45	1,166,825 41
" " 1, 1867, " 31, 1867..	1,261,600 30	45,023 65	1,306,623 95
" " 1, 1868, " 31, 1868..	1,312,093 05	42,436 15	1,354,529 20
" " 1, 1869, " 31, 1869..	1,315,676 13	39,844 05	1,355,520 18
" " 1, 1870, to Apr. 9, 1870..	77,641 95	49,155 60	126,797 55
" Apr. 11, 1870, " 10, 1871..	1,296,383 79	51,223 30	1,347,607 09
" " 11, 1871, " 10, 1872..	1,353,591 59	49,428 15	1,403,019 74
" " 10, 1872, " 30, 1873..	1,439,349 39	50,660 25	1,490,009 64
" " 30, 1873, to Dec. 31, 1873..	1,386,132 41	48,039 53	1,434,171 94
" Jan. 1, 1874, to Jan. 1, 1875..	1,477,277 06	57,721 38	1,534,998 44
" " 1, 1875, " 1, 1876..	1,444,256 71	66,652 10	1,510,908 81
" " 1, 1876, " 1, 1877..	1,478,281 00	67,677 50	1,545,958 50
" " 1, 1877, " 1, 1878..	1,470,329 60	73,995 18	1,544,324 78
" " 1, 1878, " 1, 1879..	1,606,509 29	69,219 35	1,675,728 64
" " 1, 1879, " 1, 1880..	1,618,722 50	77,732 72	1,696,455 22
" " 1, 1880, " 1, 1881..	1,560,598 57	98,996 63	1,659,595 20
" " 1, 1881, " 1, 1882..	1,510,511 77	100,743 81	1,611,255 58
" " 1, 1882, " 1, 1883..	1,647,183 25	169,558 61	1,816,741 86
" " 1, 1883, " 1, 1884..	1,869,518 96	164,689 55	2,034,208 51
" " 1, 1884, " 1, 1885..	1,585,329 32	117,041 07	2,102,370 39
" " 1, 1885, " 1, 1886..	2,122,411 83	165,425 18	2,287,837 01
" " 1, 1886, " 1, 1887..	2,343,792 61	.....	2,343,792 61
" " 1, 1887, " 1, 1888..	2,514,343 92	.....	2,514,343 92
" " 1, 1888, " 1, 1889..	2,437,962 66	158,508 61	2,596,471 27
	\$51,612,191 12	\$2,512,917 81	\$54,125,108 93

As the water year commences on the 1st day of May in each year, the annual receipts referred to in the foregoing include necessarily a certain portion of the water-rents of each preceding year respectively. This, however, does not affect the comparative results, as the proportionate collections between the first of January and the final closing of the books of the preceding water year are about the same in each fiscal year. Upon the closing of the books, all unpaid water rents are, in pursuance of law, returned to the Clerk of Arrears, and until paid, remain as a lien upon the property on which they may be due, and are collectable at the time and in the manner provided for the collection of the annual taxes. These amounts are added to the annual collections of this Department in determining the actual revenue derived by the City from the supply and distribution of water.

The revenue this year shows a slight decrease owing to the operation of the Law of 1887, exempting asylums, hospitals and homes from the charges for Croton water. Notwithstanding this and other changes that have been made by reason of the law and authorizing the cancellation of other rates, the receipts make a large showing which induces me to renew the recommendation made in my last annual report, that such revision and reduction in the scale of water rates be made as will give an adequate revenue to the City, and at the same time contain the necessary safeguards against waste of water.

All of which is respectfully submitted.

J. H. CHAMBERS, Water Register.

BOARD OF CITY RECORD.

MAYOR'S OFFICE, CITY HALL,
NEW YORK, February 5, 1889.

The Hons. Hugh J. Grant, Henry R. Beekman and D. Lowber Smith, Mayor, Counsel to the Corporation and Commissioner of Public Works, the three officers mentioned in section 66 of the New York City Consolidation Act, met this day in the Mayor's office.

The minutes of the last meeting were read and approved.

The Supervisor submitted Requisitions Nos. 268 and 269, viz. :

No.	DATE.	APPLIED FOR.	ACTION OF BOARD.
268	Feb. 4, 1889	From Court of Common Pleas. 50 volumes of partition and foreclosure judgments and decrees ..	Laid over.
269	" 2, "	From Finance Department. 2,000 warrants	"

The following requisition from the Civil Service Boards was allowed as a substitute for Nos. 159 to 164, inclusive, heretofore submitted :

1,000 copies Form No. 1, in pads ; 250 copies Form No. 6, in pads ; 250 copies Form No. 9, in pads ; 250 copies Form No. 12, in pads ; 1,000 application papers, Form No. 1 A ; 250 blanks 1 C, in pads ; 150 blanks 2 C, in pads ; 100 blanks 3 C, in pads ; 150 blanks 10 C, in pads ; 150 blanks 11 C, in pads ; 500 blanks 12 C, in pads ; 250 blanks 13 C, in pads ; 150 blanks 14 C, in pads ; 250 blanks 1 E, in pads ; 300 questions for clerks, arithmetic, in pads ; 300 questions for clerks, city information, in pads ; 500 questions, arithmetic, several kinds, in pads ; 250 selections from the Police regulations ; 150 copies selections from the Park Police regulations ; 150 copies selections from the Fire Department regulations ; 250 covers for Patrolmen ; 150 covers for Park Policemen ; 500 official letter-heads, in pads ; 1,000 official envelopes, note size ; 500 official envelopes, letter size ; 1,000 sheets duplicating paper, 30½ x 41—90, No. 29 ; 250 sheets soft paper, 28 x 43—100, No. 29 ; 500 blank sheets, foolscap size ; 250 sheets tissue paper, foolscap size ; 4 dozen pads ; 500 newspaper wrappers ; 50 sheets carbon paper, two kinds ; 1 minute book, Supervisory Board ; 1 book record of physical examinations, Municipal Police, vol. 2 ; 1 book record of applications for appointment for Municipal Police, vol. 4 ; 1 book record of applications for appointment for Park Police, vol. 2 ; 1 book record of applications for appointment for Firemen, vol. 2 ; 1 letter-book, schedule E, vol. 3 ; 1 letter-book, miscellaneous, vol. 5 ; 1 dozen memorandum books ; 3 bottles black ink ; 1 bottle red ink ; 3 small bottles purple stamping ink ; 3 ink vents ; 3 boxes Gillott's double elastic pens ; 3 boxes Esterbrook's 048 pens ; 3 boxes Spencerian official pens, No. 16 ; 3 boxes stub pens ; 1 gross Faber's lead pencils, No. 2 ; 1 dozen red and blue pencils ; 1 dozen green pencils ; 1 box Faber's typewriter erasers, No. 102 ; 4 dozen pencil-point protectors ; 1 dozen Shannon binding cases ; 3 typewriter ribbons ; 2 typewriter brushes ; 1 bottle machine oil ; 6 boxes McGill's fasteners ; 1 large box rubber bands, assorted sizes, one dozen boxes of each size ; 6 balls twine.

The following items on requisitions previously submitted were also allowed :

No. 218 (Commissioners of Accounts)—24 dozen memorandum pads, samples Nos. 7, 8, 9 ; 2 gross Dixon's rubber top pencils, " M."

No. 250 (District Attorney's Office)—100 sheets semi-carbon paper, cap size, in tin box ; 100 sheets semi-carbon paper, letter size ; 50 sheets double carbon paper ; 12 books calendar paper ; 6 covers for testimony ; 8 typewriter record ribbons ; 2 reams typewriting paper ; 3 brushes for typewriter.

The Supervisor presented the following communication from the Comptroller :

CITY OF NEW YORK—FINANCE DEPARTMENT,
February 5, 1889.

THOS. COSTIGAN, ESQ., Supervisor of the City Record :

SIR—Herewith I transmit a communication from Mr. Stephen Angell, the Examiner of Claims in the Auditing Bureau of this Department, asking to be relieved of the duty of expert service for the Board of City Record, and a communication also from William J. Lyon, First Auditor of Accounts, recommending that his request be complied with. These communications explain the situation in regard to the matter.

Your communication to Mr. Angell is also enclosed.

Respectfully,
THEO. W. MYERS, Comptroller.

[Enclosures.]

CITY OF NEW YORK—FINANCE DEPARTMENT,
COMPTROLLER'S OFFICE,
February 5, 1889.

Hon. THEODORE W. MYERS, Comptroller :

SIR—I desire to call your attention to the enclosed communication addressed to you and by me transmitted at the request of Mr. Angell.

In view of the fact that Mr. Angell states that the work called for in the communication from the Supervisor of the Board of City Record would require constant attention for several days, and inasmuch as there has already accumulated during the time he has devoted to rendering expert assistance to the Board of City Record some three or four weeks' regular bureau work, his performance of the work suggested by the Supervisor of the Board of City Record will very seriously interfere with the proper performance of the duties of his position, and I would therefore recommend that his request to be relieved from further expert service for the Board of City Record be complied with.

Respectfully,
WILLIAM J. LYON, First Auditor of Accounts.

NEW YORK, February 5, 1889.

Hon. THEODORE W. MYERS, Comptroller :

DEAR SIR—I have received a lengthy communication from the Supervisor of the City Record, which I submit to you, and to which my immediate attention is requested. This would require my whole time for several days, even with the assistance of Mr. Foster (the expert employed by the Committee on Contracts), who can give his evenings only to the work, and who is unfamiliar with some of the details of City Department requirements.

The time already required of me by the committee has seriously interfered with my regular duties in the Bureau of Audit, so that I have an accumulation of three or four weeks' work on my hands ; and as the bills received during the first months of the year always require unremitting application, I am compelled respectfully to ask you to relieve me from further service on that committee.

Very respectfully,
STEPHEN ANGELL, Examiner of Claims.

OFFICE OF THE CITY RECORD, No. 2 CITY HALL,
NEW YORK, February 4, 1889.

S. ANGELL, ESQ., Chairman :

DEAR SIR—At the meeting of the Board of City Record held on the 4th inst., the Mayor expressed a very earnest desire that the work of preparing specifications should be expedited, so as to speedily permit public lettings to the lowest bidders. Several of the requisitions ordered to be advertised were so ordered upon the express understanding that the time consumed in preparing specifications, in advertising, in awarding contracts and in performing the work under the award should not exceed thirty days at the utmost.

Among the most emergent of the requisitions so ordered to be advertised are :

(1). The books called for by the Department of Charities and Correction, and set forth in detail on Requisitions Nos. 177 to 188, inclusive.

In this connection I may be permitted to remark that I think the specifications for binding these books, and all other books for the City Record Office, should include a clause providing that the work should be open at all times to inspection by experts representing both the Finance Department and the Record Office. Free access on the part of the City officials to the book-binders' shops during the progress of the work is, in my judgment, the only way to prevent adventurous tradesmen and reckless bidders from palming off shoddy work on the City's departments. After a book has been delivered it is too late to ascertain whether the material used and the workmanship employed were all first-class or not. Besides, under the public letting system we lose the advantage which we enjoyed under the old practice, where the book manufacturer himself was the most interested party, because by using A1 material and producing good books, he was morally certain of retaining that particular line of work for years.

(2). The books, printing and stationery called for by the Department of Public Parks, mentioned in detail on Requisition No. 232.

(3). The books, blanks, printing and stationery called for by the Surrogate on the requisitions made by him for the present year, which I have already transmitted to you.

(4). The books, stationery and printing called for by the Fire Department, mentioned in detail on Requisition No. 238.

(5). The items called for by the Department of Public Works, mentioned in detail in Requisitions Nos. 155, 242 and 243.

(6). The 500 copies report of operations of Department of Street Cleaning, 1887-1888.

(7). Also the items mentioned in Requisition No. 221 from the Armory Board, and No. 220 from the Department of Taxes and Assessments. Also another requisition from the latter Department, copy of which I have not yet received, but which will be forwarded to you as soon as it comes into my hands.

I send you a slip showing the action taken on each requisition submitted at last meeting of the Board of City Record, and the only reason I thus write you in addition is that you may, if you will, show or read it to Mr. Spencer, the expert, so that he may in every way in his power facilitate the business of drafting the necessary specifications, to the end that the Departments and Courts may suffer as little inconvenience as possible.

It would be well to advise Mr. Spencer that in preparing specifications for the annual requisitions he should first deduct from them such items as have been allowed on account of them, which he can ascertain by consulting the minutes published in the CITY RECORD. No deduction needs to be made on the Health requisition, as I understand Mr. Golderman made these deductions in advance. I believe the expert has completed his part of the specification for this Department, and I hope it may be presented at next meeting of the Board, Tuesday next.

Mr. Spencer has also received the blanks agreed upon by the Justices for the different District Courts. These, too, should be hurried up as quickly as possible, as some of these Courts are almost out of stationery supplies.

Respectfully,

THOS. COSTIGAN, Supervisor of the City Record.

The Corporation Counsel offered the following, which was adopted:

Resolved, That the Mayor be authorized to employ two experts for the purpose of preparing specifications of the printing, stationery and blank books required for the several departments, courts and offices of the City Government, so that the same may be contracted for and awarded at public letting to the lowest bidders; said experts are hereby authorized to obtain from the various departments and public officers supplied from the City Record Bureau samples of stationery, blanks, printing and such other information as they may require, and are to be paid for their services out of the appropriation for "Printing, Stationery and Blank Books."

Adjourned.

HEALTH DEPARTMENT.

HEALTH DEPARTMENT OF THE CITY OF NEW YORK,
NEW YORK, January 31, 1889.

The Board met pursuant to adjournment.

Present—Commissioners James C. Bayles, Joseph D. Bryant, and the Health Officer of the Port.

The minutes of the last meeting were read and approved.

The Attorney and Counsel Presented the following Reports:

Weekly report of suits commenced and discontinued, judgments obtained and costs collected.

Civil suits commenced for violation of ordinances (Sanitary Code).....	40
Nuisances abated after commencement of suit.....	29
Suits discontinued—By Board.....	21
Judgments for the Department—Civil suits.....	6
Executions issued.....	1
Civil suits now pending.....	226
Criminal suits now pending.....	156

Weekly report of cases wherein nuisances have been abated and recommendations that actions be discontinued.

On motion, it was

Resolved, That the actions against the following-named persons for violation of the Sanitary Code be discontinued without costs, to wit:

NAMES.	No.	NAMES.	No.
Neil McCallum.....	1454	John A. Malmberg.....	3106
John Laurence.....	1854	Robert J. Moore.....	3108
John C. Rodgers.....	2057	Frederick A. Viemeister.....	3118
David J. Stein.....	2701	William Austin.....	3125
Charles Hardman.....	2765	John D. Jones.....	3144
Francis R. Humphrey.....	2849	Jacob Miles.....	3146
Max Danziger.....	2879	Elliott Walker.....	3155
Sarah F. Hartley.....	2892	Nathan Levy.....	3176
Daniel Ahearn.....	2955	John Lessinsky.....	3177
Ambrose C. Kingsland.....	3023	Edward L. Muller.....	3178
John Noonan.....	3028	John McDermott.....	3181
Edward J. Burke.....	3046	Anne E. Pearsall.....	3186
Edward J. Butler.....	3047	James E. Pope, Jr.....	3187
George W. Churchill.....	3085	Emery M. Van Tassel.....	3233
James Kenney.....	3102		

A communication from the Attorney, stating that, in accordance with resolution passed January 24, he had notified the New York Bottling Company to discontinue the use of artesian well-water.

The Sanitary Committee Presented the following Reports:

Weekly report from Riverside Hospital (small-pox).

Weekly report from Riverside Hospital (fevers).

Weekly report from Reception Hospital.

Weekly report from Willard Parker Hospital.

Report on changes in the Hospital Service.

Resolved, That the following changes in the Hospital Service be and are hereby approved:

Julia M. Sullivan, Nurse, from January 27, at \$30.

Ellen Fitzpatrick, Laundress, from January 29, at \$12.

The Finance Committee presented the following bills, which were approved and ordered forwarded to the Comptroller for payment:

NAMES.	AMOUNT.	NAMES.	AMOUNT.
Jno. Neal's Sons.....	\$1,111 95	Gilbert & Barker Mfg. Co.....	\$55 34
Thos. F. White.....	3,000 00	Cox & Cameron.....	221 50
Perris & Browne.....	120 00	Jos. Ciccarelli.....	415 50
C. P. Woodworth's Son & Co.....	167 90	Eimer & Amend.....	174 76
Fox & Kelly.....	28 00		

The following Communications were Received from the Sanitary Superintendent:

Weekly report of the Sanitary Superintendent.

Weekly report of the Chief Sanitary Inspector.

Weekly report of the Chemist and Assistant Chemist.

Weekly report of work performed by the Inspectors of Offensive Trades.

Weekly report on manure dumps.

Weekly reports on condition of offal and night-soil boats.

Weekly reports on condition of slaughter-houses.

Monthly reports of charitable institutions.

Reports on applications for permits.

Reports on applications for relief from orders.

Reports of sanitary condition of premises No. 288 Front street; southwest corner Tenth avenue and Sixty-seventh street; north side Sixty-ninth street, one hundred feet west of West End or Eleventh avenue; north side Sixty-ninth street, one hundred and twenty-five feet west of West End or Eleventh avenue; north side Sixty-ninth street, one hundred and fifty feet west of West End or Eleventh avenue; north side of Sixty-ninth street, one hundred and seventy-five feet west of West End or Eleventh avenue; north side of Sixty-ninth street, two hundred feet west of West End or Eleventh avenue.

Report of Chemist Martin for extension of leave of absence on account of continued illness. Laid on table.

Report of Assistant Chemist on samples of cooked "oat meal" and "oat flake." Referred to the Superintendent of Police.

Report of Assistant Chemist on reinspection of New York Bottling Company as to the use of artesian well-water. Ordered on file.

Report of Inspector Veritzan with recommendation of the Sanitary Superintendent as to the necessity of a sewer in Front street, between Wall street and Old Slip.

Report on overcrowding in tenement-houses.

The following Communications were Received from the Chief Inspector of Contagious Diseases:

Weekly report of work performed by the Division of Contagious Diseases.

Weekly report of work performed by the Veterinarian.

Report of Inspector M. Morris on examination of docks and piers, etc., from Battery to Fifty-seventh street, North river. Referred to the President with power.

The following Communications were Received from the Register of Records:

Weekly letters.

Weekly abstracts of births.

Weekly abstracts of still-births.

Weekly abstract of marriages.

Weekly mortuary statement.

Weekly abstract of deaths from contagious diseases.

Weekly report of clerks.

Reports on delayed births and marriage returns.

Reports on applications to file supplemental papers.

Report on transit permit issued by Deputy Coroner Conway on January 24, 1889. Referred to the Secretary.

Report on Overcrowding in Tenements.

Whereas, The Sanitary Superintendent has certified to this Board that the following tenement-houses, situated in the City of New York, are so overcrowded that less than six hundred cubic feet of air space is afforded to each occupant in the said houses.

It is ordered, That the number of occupants in said tenement-houses in New York City be and are hereby reduced as follows:

NUMBER.	LOCATION.	FRONT OR REAR HOUSE.	FLOOR.	LESSEE.	REDUCED TO	
					Adults.	Children.
1197	55 Orchard street.....		No. 9.....	Moses Bubes.....	5	2
1198			No. 10.....	Joseph Suckman.....	5	2
1199	317 East One Hundred and Eleventh street.....	Rear.....	Fourth, e. s.	Generosa Etz.....	4	1

Permits Denied.

No.	BUSINESS-MATTER OR THING DENIED.	ON PREMISES AT
240	To maintain manure vault.....	Nos. 9 and 11 Hester street.
241	To board and care for two infants.....	No. 243 West Thirty-second street.
242	To keep chickens.....	No. 232 East Thirty-seventh street.

Permits Revoked.

No.	BUSINESS-MATTER OR THING REVOKED.	ON PREMISES AT
5246	To keep twenty chickens.....	No. 2724 Marion avenue.

Permits Granted.

No.	BUSINESS-MATTER OR THING GRANTED.	ON PREMISES AT
1170	To keep a lodging-house.....	No. 116 Mulberry street.
1171	"	No. 234 West Fourth street.
1172	"	No. 39 Bowery.
6152	To maintain manure vault.....	Northeast corner Sixty-second street and Avenue A.
6153	"	No. 234 East Sixty-third street.
6154	"	No. 120 Willett street.
6155	"	No. 123 Willett street.
6156	"	Nos. 339 and 341 East Sixty-third street.
6157	"	No. 1095 First avenue.
6158	"	No. 26 East Thirty-sixth street.
6159	"	No. 157 West Twenty-ninth street.
6160	"	Nos. 166 and 168 East Eighty-fifth street.
6161	"	No. 411 East Sixty-fifth street.
6162	"	No. 124 Clinton street.
6163	"	No. 107 West Thirty-seventh street.
6164	"	Nos. 340 to 350 East Sixty-second street.
6165	"	No. 312 East Sixty-fourth street.
6166	"	No. 412 East Sixty-second street.
6167	"	No. 333 East Sixty-fourth street.
6168	"	Nos. 423 and 430 East Sixtieth street.
6169	To construct and maintain manure vault.....	Nos. 206 and 208 East Sixty-fifth street.
6170	"	No. 421 East Ninety-first street.
6171	"	Nos. 536 and 538 West Forty-third street.
6172	To maintain manure vault.....	No. 502 East Fifty-sixth street.
6173	"	One Hundred and Seventh street, between Avenue A and First avenue.
6174	"	No. 83 Ninth avenue.
6175	"	No. 77 Mulberry street.
6176	"	No. 104 Mangin street.
6177	"	Nos. 23 and 25 East One Hundred and Eleventh street.
6178	"	No. 8 Sniffen's ct. (East Thirty-sixth street).
6179	"	No. 44 Pitt street.
6180	"	No. 111 West Twenty ninth street.
6181	"	Northeast corner Third avenue and One Hundred and Thirty-sixth street.
6182	"	No. 544 West Forty-third street.
6183	"	No. 410 East Ninety-first street.
6184	"	No. 191 Delancey street.
6185	"	No. 75 Monroe street.
6186	"	No. 510 East Seventeenth street.
6187	"	No. 304 East Fortieth street.
6188	"	No. 42 Sheriff street.
6189	"	No. 273 East Fourth street.
6190	"	No. 2 East Ninety-seventh street.
6191	"	No. 161 Madison street.
6192	"	No. 305 East Fortieth street.
6193	"	No. 309 East Fortieth street.
6194	"	No. 223 East Fifty-third street.
6195	"	No. 152 East Fifty-fifth street.
6196	"	No. 319 West Thirty-seventh street.
6197	"	No. 61 East One Hundred and Twenty-sixth street.
6198	"	No. 689 Eleventh avenue.
6199	"	No. 203 East Ninety-second street.
6200	"	No. 118 Willett street.
6201	"	No. 39 East Twelfth street.
6202	To construct and maintain manure vault.....	No. 19 Vestry street.
6203	To keep two cows.....	Gum Hill road, Kingsbridge.
6204	To maintain and stable one cow.....	No. 410 East Ninety-first street.
6205	To keep seven cows.....	West side Powell place, near One Hundred and Eighty-ninth street.
6206	To maintain manure vault.....	No. 328 East Thirty-third street.
6207	"	No. 52 New Bowery.
6208	"	No. 30 Hester street.
6209	"	No. 477 Cherry street.
6210	"	Nos. 406 and 408 East Sixty-eighth street.
6211	To occupy basement.....	No. 218 East Sixty-fifth street.
6212	"	No. 887 First avenue.

Orders Suspended, Extended, Modified, Rescinded or Referred.

No. of Order.	ON PREMISES AT	TIME EXTENDED TO	REMARKS.
106	No. 503 East Nineteenth street.....	May 1, 1889	
225	No. 235 West Thirty-seventh street.....	Feb. 15, "	
477	No. 82 Sixth avenue.....	Apr. 1, "	
515	No. 901 Forest avenue.....	May 1, "	For grading the yard, provided balance of order be complied with at once.
536	No. 130 West Fifty-second street.....	Apr. 1, "	
594	South side of One Hundred and Seventy-second street, one hundred and twenty-five feet west of Audubon avenue, extending fifty feet west.....	Mar. 1, "	
660	No. 503 East Eighty-second street.....	May 1, "	For new house-drain running trap, fresh air inlet, extending main waste-pipe and grading rear area, provided remainder of order be complied with and the defects in earthen house-drain properly repaired. Provided the privy-vault be thoroughly disinfected.
670	No. 1186 Washington avenue.....	" 1, "	
829	West One Hundred and Thirty-third street, fourth house west of Eighth avenue.....	" 1, "	
833	No. 330 East Thirty-fifth street.....	" 1, "	
893	No. 345 West Fifty-second street.....	" 1, "	Provided the water-closets be thoroughly cleaned.
1051	No. 8 North Moore street.....	" 1, "	For grading yard and area, and modification was denied.
1069	No. 437 West Fifty-second street.....	" 1, "	For flagging the yard, provided said yard be graded and drained.
1103	No. 69 St. Mark's place.....	" 1, "	For that portion of order that relates to trapping sinks, wash-tubs, and bath-tubs, provided portion of order relating to basin in basement be complied with at once.
8053	Nos. 649 and 651 East One Hundred and Fifty-fourth street.....	" 1, "	
11062	No. 150 West One Hundred and Fifth street.....	" 1, "	
11922	No. 118 Hester street.....	May 1, "	For fully complying with order, provided the manure is kept in the stable and the yard thoroughly cleaned and disinfected and kept in a sanitary condition.
13884	Nos. 108 and 108½ Bowery.....	" 1, "	
14858	North side Seventy-third street, two hundred and fifty feet east of Avenue A, extending seventy-five feet east.....	" 1, "	
14867	No. 212 East One Hundred and Twenty-sixth street.....	" 1, "	For filling privy-vault, provided that portion of order relating to the slop sink be complied with at once.
17060	No. 163 East Ninety-fifth street.....		Modified so as not to require sewer connection.
17779	No. 25 Willett street.....	May 1, 1889	For additional water-closets, provided that all obstructions be removed from water-closet traps, and water-closets be kept well flushed and disinfected.
18407	No. 172 East Sixty-third street.....	" 1, "	
22444	Fortieth street and First avenue.....	Apr. 15, "	
22779	One Hundred and Fifty-first street, east of Robbins avenue.....	Mar. 1, "	
24201	Nos. 22 and 23 West street.....		Modified so as not to require water to be provided over the sinks on fourth and fifth floors at all times.
24551			
24508	No. 404 West Nineteenth street.....	May 1, 1889	
24618	No. 2136 Second avenue.....	" 1, "	For flagging and grading the yard.
25104	No. 29 Great Jones street.....	Apr. 1, "	
25112	No. 2344 First avenue.....	May 1, "	
25516	No. 2361 First avenue.....	" 1, "	
25568	No. 232 East One Hundred and Twenty-seventh street.....	" 1, "	
26149	Eighth avenue, One Hundred and Fifty-third and One Hundred and Fifty-fourth streets.....	" 1, "	
26385	Nos. 31 and 33 James street.....		Modified so as to allow the school sink to be retained, provided the balance of order be complied with at once.
26414	Nos. 746 and 752 Eleventh avenue.....	Apr. 1, 1889	

Applications for Relief from Orders Denied.

No. of Order.	ON PREMISES AT	No. of Order.	ON PREMISES AT
390	No. 41 East Twenty-first street.	19959	No. 231 Tenth avenue.
502	No. 42 Catharine street.	22486	No. 237 Eldridge street.
806	No. 60 Third avenue.	23584	Nos. 234 and 236 West Twentieth street.
944	No. 279 Delancey street.		
949	No. 236 Madison street.	23641	No. 91 Horatio street.
1178	No. 297 East Tenth street.	23935	No. 118 Hester street.
1256	No. 237 East Thirty-second street.	25604	No. 16 Barrow street.
16621	No. 66 Willett street.	26049	Nos. 2863 and 2865 Third avenue.
18507	East side Fifth avenue, seventy-five feet north of Ninety-fifth street.		

Communications from Other Departments.

Comptroller's Office—Weekly statement.
Department of Parks—A communication acknowledging complaint from this Board relative to culvert under Westchester avenue and as to vault in the Department.
Department of Public Works—A communication as to the closing of certain wells in this city, to prevent their use for drinking purposes.
Civil Service Board—Eligible list for Milk and Meat Inspectors.

Miscellaneous Communications.

Application to substitute a corrected certificate of James C. Fargo, born May 23, 1888, in place of the one now on file. Referred to the Attorney.

Resolutions.

Resolved, That the Register of Records be and is hereby directed to record the following birth and marriage certificates:

NAMES.	RETURN.	DATE.
1. Giuseppe Belleliere.....	Born.....	May 24, 1888
2. Michele Tobbato.....	".....	July 18, "
3. Giuseppe Difemio.....	".....	" 9, "
4. Charles C. Knolls.....	".....	Aug. 28, "
5. Robert F. Foster.....	".....	" 24, "
6. Male child of William and Annie Vornhan.....	".....	" 29, "
7. Martha Howard.....	".....	Oct. 5, "
8. Giuseppe Santoro.....	".....	" 18, "
9. Patrick McMorrow.....	".....	" 18, "
10. Annie F. Hilderhof.....	".....	" 23, "
11. Willie O'Connor.....	".....	Nov. 9, "
12. Gidio Catalana.....	".....	" 15, "
13. Francesca Cafarella.....	".....	" 24, "
14. Edward Simms.....	Married.....	" 1, "
15. Thomas Shea.....	".....	" 1, "
16. Michael Bolger.....	".....	" 4, "
17. Patrick Grace.....	".....	" 4, "
18. Patrick Barnes.....	".....	" 4, "
19. James A. Butler.....	".....	" 5, "
20. Charles McAllister.....	".....	" 8, "
21. Sherman Williams.....	".....	" 9, "
22. John Maher.....	".....	" 11, "
23. Patrick Sullivan.....	".....	" 11, "
24. Bernard McKenna.....	".....	" 11, "
25. William Scott.....	".....	" 13, "

Resolved, That permission is hereby given to file supplemental papers relating to

NAMES.	RETURN.	DATE.
1. David Hayman.....	Born.....	Sept. 29, 1868
2. Joseph F. Wright.....	Died.....	May 17, 1886
3. Emma Ockel.....	".....	Apr. 15, 1888
4. Jacob Ackerly.....	".....	Aug. 24, 1888

Resolved, That the report of Inspector Veritzan, with recommendation of the Sanitary Superintendent, be forwarded to the Department of Public Works with the request that, for sanitary reasons, a sewer be constructed in Front street, between Wall street and Old Slip.

Resolved, That George A. Woods be and is hereby provisionally employed as a Meat Inspector in this Department, with salary at the rate of \$1,000 per annum, pursuant to the Rules and Regulations of the Civil Service.

Resolved, That Richard Kay be and is hereby provisionally employed as a Meat Inspector in this Department, with salary at the rate of \$1,000 per annum, pursuant to the Rules and Regulations of the Civil Service.

Resolved, That Louis T. Brennan be and is hereby provisionally employed as a Milk Inspector in this Department, with salary at the rate of \$1,200 per annum, pursuant to the Rules and Regulations of the Civil Service.

Resolved, That James W. Naughton, provisionally employed as an Inspector of Plumbing and Ventilation in this Department, having served as such six months, and his conduct and character being satisfactory, is hereby appointed an Inspector of Plumbing and Ventilation in this Department, with salary at the rate of \$1,260 per annum, pursuant to the Rules and Regulations of the Civil Service.

Whereas, The Sanitary Superintendent has certified to this Board that the building situated upon lot No. 288 Front street is unfit for human habitation because of defects in the drainage and plumbing thereof.

Ordered, That all persons in said building situated on lot No. 288 Front street be required to vacate said building on or before February 11, 1889, for the reason that said building is unfit for human habitation because of defects in the plumbing and drainage thereof; and further, that this order be affixed conspicuously on the front of and in said building and be served as the law requires, under the direction of Dr. Walter De F. Day, the Sanitary Superintendent; and further, that said building be not again used as a human habitation without a written permit from this Board.

Whereas, The Sanitary Superintendent has certified to this Board that the building situated upon lot southwest corner Tenth avenue and Sixty-seventh street is unfit for human habitation because of defects in the plumbing thereof.

Ordered, That all persons in said building situated on lot southwest corner Tenth avenue and Sixty-seventh street be required to vacate said building on or before February 6, 1889, for the reason that said building is unfit for human habitation because of defects in the plumbing thereof; and further, that this order be affixed conspicuously on the front of and in said building and be served as the law requires, under the direction of Dr. Walter De F. Day, the Sanitary Superintendent; and further, that said building be not again used as a human habitation without a written permit from this Board.

Whereas, The Sanitary Superintendent has certified to this Board that the building situated upon lot north side Sixty-ninth street, one hundred feet west of West End or Eleventh avenue, is unfit for human habitation because of defects in the plumbing thereof.

Ordered, That all persons in said building situated on lot north side Sixty-ninth street, one hundred feet west of West End or Eleventh avenue, be required to vacate said building on or before February 6, 1889, for the reason that said building is unfit for human habitation because of defects in the plumbing thereof; and further, that this order be affixed conspicuously on the front of and in said building and be served as the law requires, under the direction of Dr. Walter De F. Day, the Sanitary Superintendent; and further, that said building be not again used as a human habitation without a written permit from this Board.

Whereas, The Sanitary Superintendent has certified to this Board that the building situated upon lot north side Sixty-ninth street, one hundred and twenty-five feet west of West End or Eleventh avenue, is unfit for human habitation because of defects in the plumbing thereof.

Ordered, That all persons in said building situated on lot north side Sixty-ninth street, one hundred and twenty-five feet west of West End or Eleventh avenue, be required to vacate said building on or before February 6, 1889, for the reason that said building is unfit for human habitation because of defects in the plumbing thereof; and further, that this order be affixed conspicuously on the front of and in said building and be served as the law requires, under the direction of Dr. Walter De F. Day, the Sanitary Superintendent; and further, that said building be not again used as a human habitation without a written permit from this Board.

Whereas, The Sanitary Superintendent has certified to this Board that the building situated upon lot north side Sixty-ninth street, one hundred and fifty feet west of West End or Eleventh avenue, is unfit for human habitation because of defects in the plumbing thereof.

Ordered, That all persons in said building situated on lot north side Sixty-ninth street, one hundred and fifty feet west of West End or Eleventh avenue, be required to vacate said building on or before February 6, 1889, for the reason that said building is unfit for human habitation because of defects in the plumbing thereof; and further, that this order be affixed conspicuously on the front of and in said building and be served as the law requires, under the direction of Dr. Walter De F. Day, the Sanitary Superintendent; and further, that said building be not again used as a human habitation without a written permit from this Board.

Whereas, The Sanitary Superintendent has certified to this Board that the building situated upon lot north side Sixty-ninth street, one hundred and seventy-five feet west of West End or Eleventh avenue, is unfit for human habitation because of defects in the plumbing thereof.

Ordered, That all persons in said building situated on lot north side Sixty-ninth street, one hundred and seventy-five feet west of West End or Eleventh avenue, be required to vacate said building on or before February 6, 1889, for the reason that said building is unfit for human habitation because of defects in the plumbing thereof; and further, that this order be affixed conspicuously on the front of and in said building and be served as the law requires, under the direction of Dr. Walter De F. Day, the Sanitary Superintendent; and further, that said building be not again used as a human habitation without a written permit from this Board.

Whereas, The Sanitary Superintendent has certified to this Board that the building situated upon lot north side Sixty-ninth street, two hundred feet west of West End or Eleventh avenue, is unfit for human habitation because of defects in the plumbing thereof.

Ordered, That all persons in said building situated on lot north side Sixty-ninth street, two hundred feet west of West End or Eleventh avenue, be required to vacate said building on or before February 6, 1889, for the reason that said building is unfit for human habitation because of defects in the plumbing thereof; and further, that this order be affixed conspicuously on the front of and in said building and be served as the law requires, under the direction of Dr. Walter De F. Day, the Sanitary Superintendent; and further, that said building be not again used as a human habitation without a written permit from this Board.

The following Communications were Received from the Chief Inspector of Plumbing and Ventilation:

Weekly report of work performed by the Division of Plumbing and Ventilation.
Weekly report on light and ventilation of tenement-houses, plumbing and drainage, plans of new buildings.

Report on qualifications of James W. Naughton, an Inspector of Plumbing and Ventilation.
Resolved, That the recommendations of the Chief Inspector of Plumbing and Ventilation be and the same are hereby approved.

Action of the Board on Plans for Light and Ventilation of the following Tenement-Houses:

Resolved, That the following plans for light and ventilation of tenement-houses be and are hereby approved upon the conditions described in the permits issued in each case, and the said plans are hereby modified in accordance therewith:

- Plan No.
6563. For one tenement, north side of Seventy-fifth street, one hundred feet west of Tenth avenue, as amended.
6594. For one tenement, north side of One Hundred and Fifty-fourth street, one hundred and seventy-five feet east of Courtland avenue.
6596. For one tenement, No. 358 Grand street, as amended.
6597. For one tenement, south side of One Hundred and Forty-third street, one hundred and twenty-five feet east of Willis avenue.
6598. For four tenements, Nos. 626 to 634 East Ninth street.
6599. For one tenement, No. 329 East Twenty-fifth street.
6600. For two tenements, Nos. 24 and 26 Perry street.
6601. For five tenements, south side of One Hundred and Sixteenth street, one hundred feet east of Madison avenue, as amended.
6603. For two tenements, west side of Eighth avenue, fifty-two feet two inches south of Eighty-third street.
6604. For two tenements, Nos. 749 and 751 Ninth avenue.
6605. For one tenement, south side of One Hundred and Twenty-fifth street, one hundred and eighty-eight feet west of Second avenue.
6606. For one tenement, No. 424 West Thirty-fifth street.

6610. For three tenements, east side of Willis avenue, from One Hundred and Thirty-fourth to One Hundred and Thirty-fifth street.
6612. For five tenements, southwest corner of Eighty-ninth street and Second avenue.
6609. For one tenement, southeast corner of Grand and Suffolk streets, as amended.
6608. For three tenements, south side of Ninety-seventh street, one hundred feet east of Tenth avenue, as amended.
6637. For one extension, west side of Boulevard, one hundred feet north of Seventy-sixth street.

Tabled for Amendment.

Resolved, That the following plans for light and ventilation of tenement-houses be and are hereby tabled for amendment :

- Plan No.
6592. For one tenement, No. 47 New Bowery.
6595. For one tenement, No. 268 West Eleventh street.
6611. For two tenements, south side of Ninety-second street, one hundred and fifty feet east of Fourth avenue.

Amendments to Light and Ventilation Plans.

Resolved, That the following amendments to light and ventilation plans be and are hereby approved :

- Plan No.
4980. For one tenement, south side of Sixty-fifth street, two hundred and eighty feet east of Third avenue.
5257. For one tenement, No. 253 East Tenth street.
5976. For three tenements, east side of Madison avenue, twenty-six feet south of One Hundred and Sixteenth street.
6043. For one tenement, south side of One Hundred and Twenty-fourth street, sixty feet west of Third avenue.
6401. For one tenement, No. 441 West Thirty-ninth street.
6473. For two tenements, Nos. 151 and 153 East Fiftieth street.
6590. For one tenement, No. 403 West Twenty-first street.
Resolved, That the application of John Casey for approval of Plan No. 5060-3, for light and ventilation of three tenements, south side of Eighty-first street, eighty feet west of Lexington avenue, be and is hereby approved.

Violations to the Attorney.

Resolved, That the following violations of law in respect to light and ventilation of tenement-houses be and are hereby referred to the Attorney :
Nos. 1003, 1011, 1155, 1364 and 1372.

Action of the Board on Plans for Plumbing and Drainage of the following Houses :

Resolved, That plans for plumbing and drainage of the following houses be and are hereby approved upon the conditions contained in the statement of the action of the Board attached to the specifications submitted with the plans, and the said plans and specifications are hereby modified in accordance therewith :

- Plan No.
9113. For one dwelling, east side of Washington avenue, two hundred and nineteen feet north of Tallmadge street, as amended.
9118. For thirteen dwellings (nine) on north side of Seventy-sixth street, ninety feet east of West End avenue, and (four) on south side of Seventy-seventh street, one hundred feet east of West End avenue, as amended.
9121. For thirteen tenements, northwest corner of Second avenue and Eighty-eighth street, as amended.
9123. For one tenement, No. 1457 Avenue A.
9124. For six dwellings, south side of One Hundred and Thirty-fourth street, two hundred feet east of Willis avenue, as amended.
9126. For one stand (West Washington Market), No. 31 Grace avenue.
9132. For two dwellings, east side of Prospect avenue, three hundred and eight feet west of One Hundred and Sixty-fifth street, as amended.
9133. For one stable, south side of Eighty-sixth street, one hundred feet west of Third avenue.
9134. For five tenements, northeast corner of One Hundred and Thirty-third street and Lenox avenue.
9136. For one stand, No. 37 Hewitt avenue (West Washington Market).
9137. For two tenements, south side of One Hundred and Thirty-third street, two hundred and fifty feet north of Lenox avenue.
9138. For five tenements, southeast corner of One Hundred and Thirty-fourth street and Fifth avenue.
9140. For one tenement, north side of One Hundred and Fifty-fourth street, one hundred and seventy-five feet east of Courtland avenue, as amended.
9141. For one tenement, No. 56 Broome street.
9143. For one dwelling, east side of Washington avenue, two hundred and ten feet south of One Hundred and Seventy-second street.
9146. For one tenement, No. 251 West Thirty-ninth street, as amended.
9147. For two tenements, Nos. 253 and 255 West Thirty-ninth street, as amended.
9148. For three tenements, Nos. 259, 261 and 263 West Thirty-ninth street, as amended.
9149. For one tenement, northeast corner of One Hundred and Twenty-third street and Eighth avenue, as amended.
9151. For one office and dwelling, west side of First avenue, twenty-five feet south of One Hundred and Twenty-first street.
9152. For one stable, west side of First avenue, one hundred and eighteen feet south of One Hundred and Twenty-second street.
9153. For four tenements, south side of One Hundred and Twenty-fifth street, one hundred and ten feet west of Second avenue.
9154. For one tenement, No. 104 East Broadway, as amended.
9157. For one dwelling, north side of Third avenue, two hundred and sixty feet west of Second street (Woodlawn), as amended.
9158. For one stand, No. 75 Lowe avenue (West Washington Market).
9160. For one tenement, southeast corner of Grand and Suffolk streets, as amended.
9161. For one stable, south side of One Hundred and Fifty-third street, three hundred and seventy-five feet west of Tenth avenue, as amended.
9162. For three tenements, northeast corner of Avenue A and Eighty-fourth street, as amended.
9164. For four tenements, north side of One Hundred and Twenty-fifth street, seventy-five feet east of Eleventh avenue, as amended.
9165. For one stable, No. 376 Madison street, as amended.

Tabled for Amendment.

Resolved, That plans for plumbing and drainage of the following houses be and are hereby tabled for amendment :

- Plan No.
9117. For addition to hotel, east side of Fifth avenue, thirty feet south of Fiftieth street.
9122. For one warehouse, Nos. 203 and 205 East Ninety-ninth street.
9139. For one club house, No. 29 East Thirty-second street.
9145. For one tenement, No. 425 West Thirty-fifth street.
9155. For one dwelling, west side of Monroe place, seventy-five feet north of One Hundred and Seventy-third street.
9156. For one dwelling, west side of Chisholm street, eighty-seven feet north of Stebbins avenue.
9159. For one dwelling, southeast corner of St. Ann's and Westchester avenues.

Violations to the Attorney.

Resolved, That the following violations of law in respect to plumbing and drainage of new houses be and are hereby referred to the Attorney :
Nos. 1097, 1342, 1430, 1547, 1575, 1696.

Amendments to Plumbing Plans.

Resolved, That the following amendments to plumbing and drainage plans be and are hereby approved :

- Plan No.
6953. For one tenement, southwest corner of Third avenue and One Hundred and Sixth street.
8135. For one tenement, south side of Seventy-sixth street, one hundred feet west of West End avenue.
8171. For one store, northwest corner of Broadway and Fifty-fourth street.
8281. For three tenements, southeast corner of One Hundred and Thirty-sixth street and Western Boulevard.
8412. For one tenement, south side of Thirty-fourth street, one hundred and forty-one feet south of Lexington avenue.
8582. For four tenements, east side of Willis avenue, fifty feet north of One Hundred and Forty-fourth street.
8823. For three tenements, north side of One Hundred and Thirtieth street, one hundred feet east of Eighth avenue.
8858. For five dwellings, north side of One Hundred and Thirty-fourth street, eighty feet east of St. Ann's avenue.

8828. For eight tenements, east side of Willis avenue, between One Hundred and Forty-third and One Hundred and Forty-fourth streets.
8950. For four dwellings, west side of Union avenue, two hundred feet north of One Hundred and Sixty-seventh street.
9001. For six dwellings, five on north side of Eighty-sixth street, thirty feet east of Ninth avenue, and one on south side Eighty-seventh street, thirty feet east of Ninth avenue.
9060. For one dwelling, south side of Lenox avenue, sixty-one feet ten inches north of One Hundred and Twenty-first street.
9071. For one tenement, No. 168 East Eighty-second street.
Resolved, That the application of William Fernschild for the modification of light and ventilation (Plan No. 5749), for one tenement, southwest corner of Fourth avenue and One Hundred and Twentieth street, be and is hereby denied.

Sanitary Bureau.

The following is a record of the work performed in the Sanitary Bureau for the week ending January 26, 1889 :

There were 7,497 inspections made by the Sanitary Inspectors and the Sanitary Police.
There were 578 complaints returned by the Sanitary Inspectors and the Sanitary Police.
There were 212 complaints received from citizens and referred to the Sanitary Inspectors and Sanitary Police for investigation and report.
There were issued to the consignees of vessels, to discharge cargoes, on vouchers from the Health Officer of the Port, 37 permits.
There were issued to consignees, to discharge rags (in bulk, under bonds), 2 permits.
There were issued to scavengers to empty, clean and disinfect privy sinks, 11 permits.

Report of Vital Statistics for the Week ending January 26, 1889.

WEEK ENDING SATURDAY, 12 M.	Certificates Re- ceived and Tabulated.	Increase over Previous Week.	Decrease from Previous Week.	Annual Rate per 1,000 Population Estimated at 155,116.	Burial Permits Issued.	Transit Permits Issued.	Coroners' Cases.	Searches Made.	Transcripts Issued.	Entered in Registers.	Indexed.
Marriages.....	303	72	....	10.15	....	....	....	25	10	....	303
Births.....	715	....	55	23.95	....	....	....	20	11	....	715
Deaths.....	708	....	71	23.72	779	8	75	118	108	....	708
Still-births.....	72	8	....	2.41	72	....	5	....	....	....	....

Of the total number of deaths reported, those due to contagious diseases and to certain diseases whose prevalence may be due to variable local conditions were as follows :

CAUSE OF DEATH.	Deaths Reported.	Deaths Reported in Previous Week.	INCREASE OR DECREASE OF DEATHS, BY WARDS.										
			1	2	3	4	5	6	7	8	9	10	11
Cerebro-spinal Meningitis.	4	4	....	....	....	....	....	....	....	....	....	....	+1
Diphtheria.....	40	50	—1	....	....	....	....	....	....	....	....	....	....
Enteric Fever.....	9	4	....	....	....	....	....	....	....	....	+1	....	....
Erysipelas.....	4	6	....	....	....	....	....	—2	—1	—1	+1	....	....
Malarial Fevers.....	5	5	....	....	....	....	....	....	....	+1	....	—1	....
Measles.....	22	29	+1	....	....	....	....	+1	....	....	—1	+1	....
Scarlatina.....	55	54	—1	....	....	....	—1	....	—2	—1	—1	+1	—1
Small-pox.....	....	....	....	....	....	....	....	....	....	....	....	....	....
Typhus Fever.....	....	....	....	....	....	....	....	....	....	....	....	....	....
Whooping-cough.....	12	9	....	....	....	....	....	....	....	+1	....	....	....
Diarrhoeal Diseases.....	8	19	....	....	....	....	+1	+1	—1	....	....	+1	....
Bronchitis.....	40	45	—2	....	....	—3	....	+3	+1	—1	+2	+2	—1
Croup.....	16	9	....	....	—1	....	....	....	....	+3	....	....	....
Pneumonia.....	99	93	—1	....	+2	—1	+1	+2	+1	....	—1	—3	—5
Puerperal Diseases.....	6	7	....	....	....	....	....	....	....	—1	....	+1	....
Under 1 Month.....	41	52	—1	....	....	—1	+1	—1	—4	+1	—1	+1	—1
1 Month and under 5 Years.	248	311	—2	—1	—1	—6	....	+1	—5	+1	+3	—1	—3
65 and over.....	60	71	—1	....	....	....	....	+1	+2	....	+3	—1	—2
Total.....	708	779	+1	—2	+1	—8	+3	+6	—7	+3	+13	+2	—5

CAUSE OF DEATH.	INCREASE OR DECREASE OF DEATHS, BY WARDS.													
	12	13	14	15	16	17	18	19	20	21	22	23	24	
Cerebro-spinal Meningitis .	+1	....	....	....	....	....	....	—1	....	....	—1	....	....
Diphtheria.....	+2	+1	—2	....	+1	—2	+2	—2	—1	—3	—5	—1	+1
Enteric Fever.....	....	....	....	+1	....	....	....	+1	+1	+1	....	....	..
Erysipelas.....	....	....	....	....	....	....	+1	+1	....	....	—1	....	....
Malarial Fevers.....	+2	—1	....	....	....	....	....	—1	....	....	+1	—1	...
Measles.....	+2	—1	—1	....	—1	....	—3	—5	+1	+1	—2	....	...
Scarlatina.....	+1	+1	....	+1	+2	....	....	....	—1	—1	+3	+1	...
Small-pox.....	....	....	....	....	....	....	....	....	....	....	....	....	...
Typhus Fever.....	....	....	....	....	....	....	....	....	....	....	....	....	...
Whooping-cough.....	+2	....	....	....	....	—2	....	+3	—1	—1	+1	....	...
Diarrhoeal Diseases.....	—3	....	—1	....	—1	—1	+1	—2	—1	—3	—2	....	...
Bronchitis.....	....	+1	+1	—1	—1	—1	+2	—4	—5	—1	+2	+1	...
Croup.....	+1	....	+1	....	....	....	—1	+2	....	+2	....	....	...
Pneumonia.....	+4	....	....	....	+3	+1	+2	+5	—2	....	—3	....	+1
Puerperal Diseases.....	+2	—2	+1	—1	....	+1	—1	....	—1	—1	+1	....	...
Under 1 Month.....	—4	+2	+2	—1	+1	+1	+1	—4	+2	—4	—1	....	...
1 Month and under 5 Years.	+1	—3	—3	—1	+1	—12	—2	—11	—5	—6	—9	....	+1
65 and over.....	+2	+2	+1	....	—1	+1	—3	—7	—1	—1	—6	+1	—1
Total.....	—8	....	+2	—1	+2	—11	—9	—28	—2	—12	—14	....	+3

The 708 deaths represent a death-rate of 23.72 as against 26.11 for the previous week, and 27.66 for the corresponding week of 1888.

The decrease of 71 deaths was mainly due to a decrease of 10 in the deaths from diphtheria, 7 from measles, 11 from diarrhoeal diseases, 7 from cancer, 7 from apoplexy, 13 from diseases of the

EXECUTIVE DEPARTMENT.

MAYOR'S OFFICE,
NEW YORK, February 1, 1889.

Pursuant to section 9 of chapter 339, Laws of 1883, I hereby designate the "Daily News" and the "New York Morning Journal," two of the daily papers printed in the City of New York, in which notice of each sale of unredeemed pawns or pledges by public auction in said city, by pawnbrokers, shall be published for at least six days previous thereto, until otherwise ordered.

HUGH J. GRANT, Mayor.

OFFICIAL DIRECTORY.

STATEMENT OF THE HOURS DURING which all the Public Offices in the City are open for business, and at which each Court regularly opens and adjourns, as well as of the places where such offices are kept and such Courts are held; together with the heads of Departments and Courts:

EXECUTIVE DEPARTMENT

Mayor's Office.

No. 6 City Hall, 10 A. M. to 4 P. M.; Saturdays, 10 A. M. to 12 M.
HUGH J. GRANT, Mayor. THOMAS T. C. CRAIN, Secretary and Chief Clerk.

Mayor's Marshal's Office.

No. 1 City Hall, 9 A. M. to 4 P. M.
DANIEL ENGELHARD, First Marshal.
FRANK FOX, Second Marshal.

COMMISSIONERS OF ACCOUNTS.

Rooms 114 and 115, Stewart Building, 9 A. M. to 4 P. M.
MAURICE F. HOLAHAN, EDWARD P. BARKER.

AQUEDUCT COMMISSIONERS.

Room 209, Stewart Building, 5th floor, 9 A. M. to 5 P. M.
JAMES C. DUANE, President; JOHN C. SHEEHAN, Secretary; A. FTELEY, Chief Engineer; J. C. LULLEY, Auditor.

BOARD OF ARMOY COMMISSIONERS.

THE MAYOR, Chairman; PRESIDENT OF DEPARTMENT OF TAXES AND ASSESSMENTS, Secretary.
Address M. COLEMAN, Staats Zeitung Building, Tryon Row. Office hours, 9 A. M. to 4 P. M.; Saturdays, 9 A. M. to 12 M.

LEGISLATIVE DEPARTMENT.

Office of Clerk of Common Council.

No. 8 City Hall, 10 A. M. to 4 P. M.
JOHN H. V. ARNOLD, President Board of Aldermen.
FRANCIS J. TWOMEY, Clerk Common Council.

City Library.

No. 12 City Hall, 10 A. M. to 4 P. M.
—, City Librarian.

DEPARTMENT OF PUBLIC WORKS.

Commissioner's Office.

No. 31 Chambers street, 9 A. M. to 4 P. M.
D. LOWBER SMITH, Commissioner;
Deputy Commissioner.

Bureau of Chief Engineer.

No. 31 Chambers street, 9 A. M. to 4 P. M.
GEORGE W. BIRDSALL, Chief Engineer.

Bureau of Water Register.

No. 31 Chambers street, 9 A. M. to 4 P. M.
JOHN H. CHAMBERS, Register.

Bureau of Street Improvements.

No. 31 Chambers street, 9 A. M. to 4 P. M.
WM. M. DEAN, Superintendent.

Engineer-in-Charge of Sewers.

No. 31 Chambers street, 9 A. M. to 4 P. M.
HORACE LOOMIS, Engineer-in-Charge.

Bureau of Repairs and Supplies.

No. 31 Chambers street, 9 A. M. to 4 P. M.
WILLIAM G. BERGEN, Superintendent.

Bureau of Water Purveyor.

No. 31 Chambers street, 9 A. M. to 4 P. M.
ALSTON G. CULVER, Water Purveyor.

Bureau of Lamps and Gas.

No. 31 Chambers street, 9 A. M. to 4 P. M.
STEPHEN MCCORMICK, Superintendent.

Bureau of Streets.

No. 31 Chambers street, 9 A. M. to 4 P. M.
GEO. E. BABCOCK, Superintendent.

Bureau of Incumbrances.

No. 31 Chambers street, 9 A. M. to 4 P. M.
JOHN RICHARDSON, Superintendent.

Keeper of Buildings in City Hall Park.

MARTIN J. KEESE, City Hall.

FINANCE DEPARTMENT.

Comptroller's Office.

No. 15 Stewart Building, Chambers street and Broadway, 9 A. M. to 4 P. M.
THEODORE W. MYERS, Comptroller; RICHARD A. STORRS, Deputy Comptroller.

Auditing Bureau.

Nos. 19, 21, 23 Stewart Building, Chambers street and Broadway, 9 A. M. to 4 P. M.
WILLIAM J. LYON, First Auditor.
DAVID E. AUSTEN, Second Auditor.

Bureau for the Collection of Assessments and Arrears of Taxes and Assessments and of Water Rents.
Nos. 31, 33, 35, 37, 39 Stewart Building, Chambers street and Broadway, 9 A. M. to 4 P. M.
ARTEMAS S. CADY, Collector of Assessments and Clerk of Arrears.
No money received after 2 P. M.

Bureau for the Collection of City Revenue and of Markets.
Nos. 1 and 3 Stewart Building, Chambers street and Broadway, 9 A. M. to 4 P. M.
—, Collector of the City Revenue and Superintendent of Markets.
GRAHAM MACADAM, Chief Clerk.
No money received after 2 P. M.

Bureau for the Collection of Taxes.

No. 57 Chambers street and No. 35 Reade street, Stewart Building, 9 A. M. to 4 P. M.
GEORGE W. MCLEAN, Receiver of Taxes; ALFRED VREDENBURGH, Deputy Receiver of Taxes.
No money received after 2 P. M.

Bureau of the City Chamberlain.

Nos. 25, 27 Stewart Building, Chambers street and Broadway, 9 A. M. to 4 P. M.
WM. M. IVINS, City Chamberlain.

Office of the City Paymaster.

No. 33 Reade street, Stewart Building, 9 A. M. to 4 P. M.
JOHN H. TIMMERMAN, City Paymaster.

LAW DEPARTMENT.

Office of the Counsel to the Corporation.

Staats Zeitung Building, third floor, 9 A. M. to 5 P. M.
Saturdays, 9 A. M. to 4 P. M.
HENRY R. BEEKMAN, Counsel to the Corporation
ANDREW T. CAMPBELL, Chief Clerk.

Office of the Public Administrator.

No. 49 Beekman street, 9 A. M. to 4 P. M.
RICHARD J. MORRISON, Public Administrator.

Office of the Corporation Attorney.

No. 49 Beekman street, 9 A. M. to 4 P. M.
WILLIAM A. BOYD, Corporation Attorney.

POLICE DEPARTMENT.

Central Office.

No. 300 Mulberry street, 9 A. M. to 4 P. M.
STEPHEN B. FRENCH, President; WILLIAM H. KIPP, Chief Clerk; JOHN J. O'BRIEN, Chief Bureau of Elections.

DEPARTMENT OF CHARITIES AND CORRECTION.

Central Office.

No. 66 Third avenue, corner Eleventh street, 9 A. M. to 4 P. M.
THOMAS S. BRENNAN, President; GEORGE F. BRITTON, Secretary.

Purchasing Agent, FREDERICK A. CUSHMAN. Office hours, 9 A. M. to 4 P. M. Saturdays, 12 M.
Contracts, Proposals and Estimates for Work and Materials for Building, Repairs and Supplies, Bills and Accounts, 9 A. M. to 4 P. M. Saturdays, 12 M. CHARLES BENN, General Bookkeeper.

Out-Door Poor Department. Office hours, 8.30 A. M. to 4.30 P. M. WILLIAM BLAKE, Superintendent. Entrance on Eleventh street.

FIRE DEPARTMENT.

Office hours for all except where otherwise noted from 9 A. M. to 4 P. M. Saturdays, 12 M.

Headquarters.

Nos. 157 and 159 East Sixty-seventh street.
HENRY D. PURROY, President; CARL JUSSEN, Secretary.

Bureau of Chief of Department.

CHARLES O. SHAY, Chief of Department.

Bureau of Inspector of Combustibles.

PETER SEERY, Inspector of Combustibles.

Bureau of Fire Marshal.

JAMES MITCHELL, Fire Marshal.

Bureau of Inspection of Buildings.

ALBERT F. D'OENCH, Superintendent of Buildings.

Attorney to Department.

WM. L. FINDLEY.

Fire Alarm Telegraph

J. ELLIOT SMITH, Superintendent

Central Office open at all hours.

Repair Shops

Nos. 123 and 130 West Third street.
JOHN CASTLES, Foreman-in-Charge, 8 A. M. to 5 P. M.

Hospital Stables.

Ninety-ninth street, between Ninth and Tenth avenues.
JOSEPH SHEA, Foreman-in-Charge.
Open at all hours

HEALTH DEPARTMENT.

No. 301 Mott street, 9 A. M. to 4 P. M.
JAMES C. BAYLES, President; EMMONS CLARK, Secretary.

DEPARTMENT OF PUBLIC PARKS.

Emigrant Industrial Savings Bank Building, Nos. 49 and 51 Chambers street, 9 A. M. to 4 P. M. Saturdays, 12 M.
J. HAMPDEN ROBB, President; CHARLES DE F. BURNS, Secretary.

Office of Topographical Engineer.

Arsenal, Sixty-fourth street and Fifth avenue, 9 A. M. to 5 P. M.

Office of Superintendent of 23d and 24th Wards
One Hundred and Forty-sixth street and Third avenue, 9 A. M. to 5 P. M.

DEPARTMENT OF DOCKS.

Battery, Pier A, North River.
EDWIN A. POST, President; G. KEMBLE, Secretary.
Office hours from 9 A. M. to 4 P. M.

DEPARTMENT OF TAXES AND ASSESSMENTS

Staats Zeitung Building, Tryon Row, 9 A. M. to 4 P. M. Saturdays, 12 M.
MICHAEL COLEMAN, President; FLOYD T. SMITH, Secretary.

Office Bureau Collection of Arrears of Personal Taxes
Brown-stone Building, City Hall Park, 9 A. M. to 4 P. M.
CHARLES S. BEARDSLEY, Attorney; SAMUEL BARRY Clerk.

DEPARTMENT OF STREET CLEANING.

49 and 51 Chambers street. Office hours, 9 A. M. to 4 P. M.
JAMES S. COLEMAN, Commissioner; ALBERT H. ROGERS, Deputy Commissioner; R. W. HORNER, Chief Clerk.

CIVIL SERVICE SUPERVISORY AND EXAMINING BOARDS.

Cooper Union.
EVERETT P. WHEELER, Chairman of the Supervisory Board; LEE PHILLIPS, Secretary and Executive Officer.

BOARD OF ESTIMATE AND APPORTIONMENT
Office of Clerk, Staats Zeitung Building Room 5.
The MAYOR, Chairman; CHARLES V. ADEE, Clerk.

BOARD OF ASSESSORS.

Office City Hall, Room No. 11½, 9 A. M. to 4 P. M.
EDWARD GILON, Chairman WM. H. JASPER, Secretary

BOARD OF EXCISE.

No. 54 Bond street, 9 A. M. to 4 P. M.
CHARLES H. WOODMAN, President; GEORGE H. GALE, Secretary and Chief Clerk.

SHERIFF'S OFFICE.

Nos. 3 and 4 New County Court-house, 9 A. M. to 4 P. M.
JAMES A. FLACK, Sheriff; THOMAS F. GILROY, Under Sheriff; BERNARD F. MARTIN, Order Arrest Clerk.

REGISTER'S OFFICE.

East side City Hall Park, 9 A. M. to 4 P. M.
JAMES J. SLEVIN, Register; JAMES J. MARTIN, Deputy Register.

COMMISSIONER OF JURORS.

Room 127, Stewart Building, Chambers street and Broadway, 9 A. M. to 4 P. M.
CHARLES REILLY, Commissioner; JAMES E. CONNER, Deputy Commissioner

COUNTY CLERK'S OFFICE.

Nos. 7 and 8 New County Court-house, 9 A. M. to 4 P. M.
EDWARD F. REILLY, County Clerk; P. J. SCULLY, Deputy County Clerk.

DISTRICT ATTORNEY'S OFFICE.

Second floor, Brown-stone Building, City Hall Park, 9 A. M. to 4 P. M.
JOHN R. FELLOWS, District Attorney; JAMES MCCABE, Chief Clerk.

THE CITY RECORD OFFICE.

And Bureau of Printing, Stationery, and Blank Books.
No. 2 City Hall, 9 A. M. to 5 P. M., except Saturdays, on which days 9 A. M. to 12 M.
THOMAS COSTIGAN, Supervisor; R. P. H. ABELL, Book-keeper.

CORONERS' OFFICE.

Nos. 13 and 15 Chatham street, 8 A. M. to 5 P. M. Sundays and holidays, 8 A. M. to 12.30 P. M.
MICHAEL J. B. MESSEMER, FERDINAND LEVY, DANIEL HANLY, LOUIS W. SCHULTZE, Coroners;
Clerk of the Board of Coroners.

SUPREME COURT.

Second floor, New County Court-house, opens at 10.30 A. M.
CHARLES H. VAN BRUNT, Presiding Justice; EDWARD F. REILLY, Clerk; P. J. SCULLY, Deputy County Clerk.
General Term, Room No. 9, WILLIAM LAMB, Jr., Clerk.
Special Term, Part I., Room No. 10, HUGH DONNELLY, Clerk.
Special Term, Part II., Room No. 18, WILLIAM J. HILL, Clerk.
Chambers, Room No. 11, WALTER BRADY, Clerk.
Circuit, Part I., Room No. 12, —, Clerk.
Circuit, Part II., Room No. 14, JOHN B. MCGOLDRICK, Clerk.
Circuit, Part III., Room No. 13, GEORGE F. LYON, Clerk.
Circuit, Part IV., Room No. 15, J. LEWIS LYON, Clerk.
Judges' Private Chambers, Rooms Nos 19 and 20, EDWARD J. KNIGHT, Librarian.

SUPERIOR COURT.

Third floor, New County Court-house, 11 A. M.
General Term, Room No. 35.
Special Term, Room No. 33.
Chambers, Room No. 33, 10 A. M.
Part I., Room No. 34.
Part II., Room No. 35.
Part III., Room No. 36.
Judges' Private Chambers, Room No. 30.
Naturalization Bureau, Room No. 32.
Clerk's Office, Room No. 31, 9 A. M. to 4 P. M.
JOHN SEDGWICK, Chief Judge; THOMAS ROESE, Chief Clerk.

COURT OF COMMON PLEAS.

Third floor, New County Court-house, 9 A. M. to 4 P. M.
Assignment Bureau, Room No. 23, 9 A. M. to 4 P. M.
Clerk's Office, Room No. 22, 9 A. M. to 4 P. M.
General Term, Room No. 24, 11 o'clock A. M. to adjournment.
Special Term, Room No. 21, 11 o'clock A. M. to adjournment.
Chambers, Room No. 21, 10.30 o'clock A. M. to adjournment.
Part I., Room No. 25, 11 o'clock A. M. to adjournment.
Part II., Room No. 26, 11 o'clock A. M. to adjournment.
Part III., Room No. 27, 11 o'clock A. M. to adjournment.
Naturalization Bureau, Room No. 23, 9 A. M. to 4 P. M.
RICHARD L. LARREMORE, Chief Justice; NATHANIEL JARVIS, Jr., Chief Clerk.

COURT OF GENERAL SESSIONS.

No. 32 Chambers street. Parts I. and II. Court open at 11 o'clock A. M.
FREDERICK SMYTH, Recorder; RANDOLPH B. MARTINE, HENRY A. GILDERSLIEVE and RUFUS B. COWING, Judges of the said Court.
Terms, first Monday each month.
JOHN SPARKS, Clerk. Office, Room No. 11 10 A. M. till 4 P. M.

CITY COURT.

City Hall.
General Term, Room No. 20.
Trial Term, Part I., Room No. 20.
Part II., Room No. 19.
Part III., Room No. 15.
Special Term, Chambers, Room No. 21, 10 A. M. to 4 P. M.
Clerk's Office, Room No. 10, City Hall, 9 A. M. to 4 P. M.
DAVID MCADAM, Chief Justice; MICHAEL T. DALY Clerk.

OVER AND TERMINER COURT

New County Court-house, second floor, southeast corner, Room No. 12. Court opens at 10½ o'clock A. M.
Clerk's Office, Brown-stone Building, City Hall Park, second floor, northwest corner, Room No. 11, 10 A. M. till 4 P. M.

COURT OF SPECIAL SESSIONS.

At Tombs, corner Franklin and Centre streets, daily at 10.30 A. M., excepting Saturday.
Clerk's Office, Tombs.

DISTRICT CIVIL COURTS.

First District—First, Second, Third and Fifth Wards southwest corner of Centre and Chambers streets.
MICHAEL NORTON, Justice.
Clerk's office open from 9 A. M. to 4 P. M.
Second District—Fourth, Sixth and Fourteenth Wards, corner of Pearl and Centre streets, 9 A. M. to 4 P. M.
CHARLES M. CLANCY, Justice.
Third District—Ninth and Fifteenth Wards, south west corner Sixth avenue and West Tenth street. Court open daily (Sundays and legal holidays excepted) from 9 A. M. to 4 P. M.
GEORGE B. DEANE, Justice.
Fourth District—Tenth and Seventeenth Wards, No. 30 First street, corner Second avenue. Court opens 9 A. M. daily; continues to close of business.
ALFRED STECKLER, Justice.
Fifth District—Seventh, Eleventh and Thirteenth Wards, No. 154 Clinton street.
HENRY M. GOLDFOGLE, Justice.
Sixth District—Eighteenth and Twenty-first Wards, No. 61 Union place, Fourth avenue, southwest corner of Eighteenth street. Court opens 9 A. M. daily; continues to close of business.
SAMSON LACHMAN, Justice.
Seventh District—Nineteenth and Twenty-second Wards, No. 151 East Fifty-seventh street. Court opens every morning at 9 o'clock (except Sundays and legal holidays) and continues to the close of business.
AMORSE MONELL, Justice.
Eighth District—Sixteenth and Twentieth Wards, southwest corner of Twenty-second street and Seventh avenue. Court opens at 9 A. M. and continues to close of business. Clerk's office open from 9 A. M. to 4 P. M. each court day.
Trial days, Wednesdays, Fridays and Saturdays.
Return days, Tuesdays, Thursdays and Saturdays. JOHN JEROLAMON, Justice.
Ninth District—Twelfth Ward, No. 225 East One Hundred and Twenty-fifth street.
JOSEPH P. FALLON, Justice.
Clerk's office open daily from 9 A. M. to 4 P. M. Trial days Tuesdays and Fridays. Court opens at 9½ A. M.

Tenth District—Twenty-third and Twenty-fourth Wards, corner of Third avenue and One Hundred and Fifty-eighth street.

Office hours, from 9 A. M. to 4 P. M. Court opens at 9 A. M.

ANDREW J. ROGERS, Justice.
Eleventh District—No. 919 Eighth avenue; Twenty-second Ward, and all that part of the Twelfth Ward lying south of One Hundred and Tenth street and west of Sixth avenue. Court open daily (Sundays and legal holidays excepted) from 9 A. M. to 4 P. M.
THOMAS E. MURRAY, Justice.

POLICE COURTS.

Judges—MAURICE J. POWER, J. HENRY FORD, JACOB PATTERSON, JR., JAMES T. KILBRETH, JOHN J. GORMAN, HENRY MURRAY, SOLON B. SMITH, ANDREW J. WHITE, CHARLES WELDE, DANIEL O'REILLY, PATRICK G. DUFFY.

GEORGE W. CREGIER, Secretary.
Office of Secretary, Fifth District Police Court, One Hundred and Twenty-fifth street, near Fourth avenue.
First District—Tombs, Centre street.
Second District—Jefferson Market.
Third District—No. 69 Essex street.
Fourth District—Fifty-seventh street, near Lexington avenue.
Fifth District—One Hundred and Twenty-fifth street, near Fourth avenue.
Sixth District—One Hundred and Fifty-eighth street and Third avenue

JURORS.

NOTICE

IN RELATION TO JURORS FOR STATE COURTS.

OFFICE OF THE COMMISSIONER OF JURORS,
ROOM 127, STEWART BUILDING,
CHAMBERS STREET AND BROADWAY,
NEW YORK, June 1, 1888.

APPLICATIONS FOR EXEMPTIONS WILL BE heard here, from 9 to 4 daily, from all persons hitherto liable or recently serving, who have become exempt, and all needed information will be given.

Those who have not answered as to their liability, or proved permanent exemption, will receive a "jury enrollment notice," requiring them to appear before me this year. Whether liable or not, such notices must be answered (in person, if possible, and at this office only under severe penalties. If exempt, the party must bring proof of exemption; if liable, he must also answer in person, giving full and correct name, residence, etc., etc. No attention paid to letters.

Persons "enrolled" as liable must serve when called or pay their fines. No mere excuse will be allowed or interference permitted. The fines, if unpaid, will be entered as judgments upon the property of the delinquents. All good citizens will aid the course of justice, and secure reliable and respectable juries, and equalize their duty by serving promptly when summoned, allowing their clerks or subordinates to serve, reporting to me any attempt at bribery or evasion, and suggesting names for enrollment. Persons between sixty and seventy years of age, summer absentees, persons temporarily ill, and United States jurors are not exempt.

Every man must attend to his own notice. It is a misdemeanor to give any jury paper to another to answer. It is also punishable by fine or imprisonment to give or receive any present or bribe, directly or indirectly, in relation to a jury service, or to withhold any paper or make any false statement, and every case will be fully prosecuted.

CHARLES REILLY,
Commissioner of Jurors.

POLICE DEPARTMENT.

POLICE DEPARTMENT—CITY OF NEW YORK,
OFFICE OF THE PROPERTY CLERK (Room No. 9),
NO. 300 MULBERRY STREET,
NEW YORK, 1887.

OWNERS WANTED BY THE PROPERTY Clerk of the Police Department of the City of New York, No. 300 Mulberry street, Room No. 9, for the following property, now in his custody, without claimants: Boats, rope, iron, lead, male and female clothing, boots, shoes, wine, blankets, diamonds, canned goods, liquors, etc., also small amount money taken from prisoners and found by patrolmen of this Department.

JOHN F. HARRIOT,
Property Clerk.

DEPARTMENT OF DOCKS.

DEPARTMENT OF DOCKS,
PIER "A," NORTH RIVER.

TO CONTRACTORS.

(No. 296.)

PROPOSALS FOR ESTIMATES FOR REPAIRING THE CRIB-BULKHEAD AT THE FOOT OF EAST FIFTY-THIRD STREET, EAST RIVER.

ESTIMATES FOR REMOVING A PART OF the existing crib-bulkhead at the foot of East Fifty-third street, East river, and for building a new crib-bulkhead and appurtenances, including a sewer-box, on the site thereof, will be received by the Board of Commissioners at the head of the Department of Docks, at the office of said Department, on Pier "A," foot of Battery place, North river, in the City of New York, until 12 o'clock M. of

THURSDAY, FEBRUARY 21, 1889,

at which time and place the estimates will be publicly opened by the head of said Department. The award of the contract, if awarded, will be made as soon as practicable after the opening of the bids.

Any person making an estimate for the work shall furnish the same in a sealed envelope to said Board, at said office, on or before the day and hour above named, which envelope shall be indorsed with the name or names of the person or persons presenting the same, the date of its presentation, and a statement of the work to which it relates.

The bidder to whom the award is made shall give security for the faithful performance of the contract, in the manner prescribed and required by ordinance, in the sum of Five Hundred and Fifty Dollars.

The Engineer's estimate of the nature, quantities and extent of the work is as follows:

REPAIRS TO CRIB-BULKHEAD.

1. New crib-work complete, including all timbers and ironwork, backing-logs, earth and stone filling, box-drains, mooring-posts, fenders and chocks, etc., and measured from the top of the flooring to the under side of the backing-log.....	7,979 cubic feet.
	<hr/>
	Feet, B. M., measured in the work.
2. Yellow Pine Timber, 12" x 12",	2,064
" " 10" x 12",	107
" " 10" x 10",	207
" " 6" x 12",	189
" " 6" x 11",	281
" " 5" x 11",	468
" " 5" x 10",	289
	<hr/>
Total.....	3,665

NOTE.—The above quantity of timber is inclusive of extra lengths required for scarfs, laps, etc., but is exclusive of waste.

3. White Pine, Norway Pine, Yellow Pine or Cypress Piles 28
(It is expected that these piles will have to be from about 25 feet to about 45 feet long.)
4. White Oak Fender Piles, about 45 feet long.... 9
5. Bed Logs, about..... 119 linear feet.
6. Excavation of Old Crib-work, etc., 375 cubic yards.
7. Square Wrought-iron Dock Spikes, about..... 1,036 pounds.
8. Wrought-iron Screw-bolts and Nuts, about..... 122 "
9. Cast-iron Washers, about..... 64 "
10. Cast-iron Cleat, about..... 225 "
11. Wrought-iron Armature Plates and Washers, about..... 1,777 "
12. Back Filling and Grading, about..... 82 cubic yards.
13. Labor only on about 63 pieces of floor-logs.
14. Labor of framing and carpentry, including all moving of timber, jointing, planing, bolting, spiking, back-filling, etc., as set forth in the specifications.

N. B.—As the above-mentioned quantities, though stated with as much accuracy as is possible, *in advance*, are approximate only, bidders are required to submit their estimates upon the following express conditions, which shall apply to and become a part of every estimate received.

(1.) Bidders must satisfy themselves, by personal examination of the location of the proposed work, and by such other means as they may prefer, as to the accuracy of the foregoing Engineer's estimate, and shall not, at any time after the submission of an estimate, dispute or complain of the above statement of quantities, nor assert that there was any misunderstanding in regard to the nature or amount of the work to be done.

(2.) Bidders will be required to complete the entire work to the satisfaction of the Department of Docks, and in substantial accordance with the specifications of the contract and the plans therein referred to. No extra compensation, beyond the amount payable for the work before mentioned, which shall be actually performed, at the price therefor, to be specified by the lowest bidder, shall be due or payable for the entire work.

The work to be done under this contract is to be commenced within five days after the date of the contract, and all the work contracted for is to be fully completed on or before the fifteenth day of May, 1889, or within as many days thereafter as the premises may be occupied by the Department of Docks or by the Department of Public Works, by and with the consent of the Department of Docks, in building a brick sewer in the sewer-box to be built by the contractor under this contract, and the damages to be paid by the contractor for each day that the contract may be unfulfilled after the time fixed for the fulfillment thereof has expired, are, by a clause in the contract, determined, fixed and liquidated at Fifty Dollars per day.

All the old material taken from the structure, to be removed under the contract, will be relinquished to the contractor, and bidders must estimate the value of such material when considering the price for which they will do the work under this contract.

Bidders will state in their estimates a price for the whole of the work to be done in conformity with the approved form of agreement and the specifications therein set forth, by which price the bids will be tested. This price is to cover all expenses of every kind involved in or incidental to the fulfillment of the contract, including any claim that may arise through delay, from any cause, in the performing of the work thereunder.

Bidders must distinctly write out, both in words and in figures, the amount of their estimates for doing the work.

The person or persons to whom the contract may be awarded will be required to attend at this office with the sureties offered by him or them, and execute the contract within five days from the date of the service of a notice to that effect; and in case of failure or neglect so to do, he or they will be considered as having abandoned it, and as in default to the Corporation; and the contract will be re-advertised and relet, and so on until it be accepted and executed.

Bidders are required to state in their estimates their names and places of residence; the names of all persons interested with them therein; and if no other person be so interested, the estimate shall distinctly state the fact; also, that the estimate is made without any connection with any other person making an estimate for the same work, and that it is in all respects fair, and without collusion or fraud; and also, that no member of the Common Council, Head of a Department, Chief of a Bureau, Deputy thereof, or Clerk therein, or other officer of the Corporation, is directly or indirectly interested therein, or in the supplies or work to which it relates, or in any portion of the profits thereof; which estimate must be verified by the oath, in writing, of the party making the estimate, that the several matters stated therein are in all respects true. *Where more than one person is interested, it is requisite that the verification be made and subscribed to by all the parties interested.*

Each estimate shall be accompanied by the consent, in writing, of two householders or freeholders in the City of New York, with their respective places of business or residence, to the effect that if the contract be awarded to the person or persons making the estimate, they will, upon its being so awarded, become bound as his or their sureties for its faithful performance; and that if said person or persons shall omit or refuse to execute the contract, they will pay to the Corporation of the City of New York any difference between the sum to which said person or persons would be entitled upon its completion and that which said Corporation may be obliged to pay to the person to whom the contract may be awarded at any subsequent letting; the amount in each case to be calculated upon the estimated amount of the work to be done, by which the bids are tested. The consent above mentioned shall be accompanied by the oath or affirmation, in writing, of each of the persons signing the same, that he is a householder or freeholder in the City of New York, and is worth the amount of the security required for the completion of the contract, over and above all his debts of every nature, and over and above his liabilities as bail, surety and otherwise; and that he has offered himself as surety in good faith and with the intention to execute the bond required by law. The adequacy and sufficiency of the security offered will be subject to approval by the Comptroller of the City of New York after the award is made and prior to the signing of the contract.

No estimate will be received or considered unless accompanied by either a certified check upon one of the State or National Banks of the City of New York, drawn to the order of the Comptroller, or money, to the amount of five per centum of the amount of security required for the faithful performance of the contract. Such check or money must not be inclosed in the sealed envelope containing the estimate, but must be handed to the officer or clerk of the Department who has charge of the Estimate-box, and no estimate can be deposited in said box until such check or money has been examined by said officer or clerk and found to be correct. All such deposits, except that of the successful bidder, will be returned to the persons making the same, within three days after the contract is awarded. If the successful bidder shall refuse or neglect, within five days after notice that the contract has been awarded to him, to execute the same, the amount of the deposit made by him shall be forfeited to and retained by the City of New York as liquidated damages for such neglect or refusal; but if he shall execute the contract within the time aforesaid, the amount of his deposit will be returned to him.

Bidders are informed that no deviation from the specifications will be allowed, unless under the written instructions of the Engineer-in-Chief.

No estimate will be accepted from, or contract awarded to, any person who is in arrears to the Corporation, upon debt or contract, or who is a defaulter, as surety or otherwise, upon any obligation to the Corporation.

The right to decline all the estimates is reserved, if deemed for the interest of the Corporation of the City of New York.

Bidders are requested, in making their bids or estimates, to use the blank prepared for that purpose by the Department, a copy of which, together with the form of the agreement, including specifications, and showing the manner of payment for the work, can be obtained upon application therefor at the office of the Department.

EDWIN A. POST,
JAMES MATTHEWS,
CHARLES A. SILLIMAN,
Commissioners of the Department of Docks.
Dated New York, February 7, 1889.

DEPARTMENT OF DOCKS,
PIER "A," NORTH RIVER.

TO CONTRACTORS.

(No. 295.)

PROPOSALS FOR ESTIMATES FOR DREDGING AT PIER, NEW 57, NORTH RIVER (SOUTH SIDE).

ESTIMATES FOR DREDGING AT PIER, new 57, North river, will be received by the Board of Commissioners at the head of the Department of Docks, at the office of said Department, on Pier "A," foot of Battery place, North river, in the City of New York, until 12 o'clock M., of

TUESDAY, FEBRUARY 19, 1889,

at which time and place the estimates will be publicly opened by the head of said Department. The award of the contract, if awarded, will be made as soon as practicable after the opening of the bids.

Any person making an estimate for the work shall furnish the same in a sealed envelope to said Board, at said office, on or before the day and hour above named, which envelope shall be indorsed with the name or names of the person or persons presenting the same, the date of its presentation, and a statement of the work to which it relates.

The bidder to whom the award is made shall give security for the faithful performance of the contract, in the manner prescribed and required by ordinance, in the sum of One Thousand Three Hundred and Fifty Dollars.

The Engineer's estimate of the quantities of material necessary to be dredged in order to secure at the premises mentioned the depth of water set opposite thereto in the specifications, is as follows:

Pier, new 57, North river (south side), 27,000 cubic yards.

N. B.—Bidders are required to submit their estimates upon the following express conditions, which shall apply to and become part of every estimate received:

(1.) Bidders must satisfy themselves, by personal examination, of the location of the proposed dredging, and by such other means as they may prefer, as to the accuracy of the foregoing engineer's estimate, and shall not, at any time after the submission of an estimate, dispute or complain of the above statement of quantities, nor assert that there was any misunderstanding in regard to the nature or amount of the work to be done.

(2.) Bidders will be required to complete the entire work to the satisfaction of the Department of Docks, and in substantial accordance with the specifications of the contract. No extra compensation, beyond the amount payable for the work before-mentioned, which shall be actually performed, at the price therefor per cubic yard, to be specified by the lowest bidder, shall be due or payable for the entire work.

The work to be done under the contract is to be commenced within five days after the date of the contract, and the entire work is to be fully completed on or before the 15th day of April, 1889, and the damages to be paid by the contractor for each day that the contract may be unfulfilled after the time fixed for the fulfillment has expired, are, by a clause in the contract, fixed and liquidated at Fifty Dollars per day.

All the material excavated is to be removed by the contractor, and deposited in all respects according to law.

Bidders will state in their estimates a price per cubic yard for doing such dredging in conformity with the approved form of agreement and the specifications therein set forth, by which price the bids will be tested. This price is to cover all expenses of every kind involved in or incidental to the fulfillment of the contract, including any claim that may arise through delay, from any cause, in the performing of the work thereunder.

Bidders must distinctly write out, both in words and in figures, the amount of their estimates for doing this work.

The person or persons to whom the contract may be awarded will be required to attend at this office with the sureties offered by him or them, and execute the contract within five days from the date of the service of a notice to that effect; and in case of failure or neglect so to do, he or they will be considered as having abandoned it, and as in default to the Corporation; and the contract will be re-advertised and relet, and so on until it be accepted and executed.

Bidders are required to state in their estimates their names and places of residence; the names of all persons interested with them therein; and if no other person be so interested, the estimate shall distinctly state the fact; also, that the estimate is made without any connection with any other person making an estimate for the same work, and that it is in all respects fair and without collusion or fraud; and also, that no member of the Common Council, Head of a Department, Chief of a Bureau, Deputy thereof, or Clerk therein, or other officer of the Corporation, is directly or indirectly interested therein, or in the supplies or work to which it relates, or in any portion of the profits thereof; which estimate must be verified by the oath, in writing, of the party making the estimate, that the several matters stated therein are in all respects true. *Where more than one person is interested, it is requisite that the verification be made and subscribed to by all the parties interested.*

Each estimate shall be accompanied by the consent, in writing, of two householders or freeholders in the City of New York, with their respective places of business or residence, to the effect that if the contract be awarded to the person or persons making the estimate, they will, upon its being so awarded, become bound as his or their sureties for its faithful performance; and that if said person or persons shall omit or refuse to execute the contract, they will pay to the Corporation of the City of New York any difference between the sum to which said person or persons would be entitled upon its completion, and that which said Corporation may be obliged to pay to the person to whom the contract may be awarded at any subsequent letting; the amount, in each case, to be calculated upon the estimated amount of the work to be done, by which the bids are tested. The consent above mentioned shall be accompanied by the oath or affirmation, in writing, of each of the persons signing the same, that he is a householder or freeholder in the City of New York, and is worth the amount of the security required for the completion of the contract, over and above all his debts of every nature, and over and above his liabilities as bail, surety and otherwise; and that he has offered himself as a surety in good faith and with the intention to execute the bond required by law. The adequacy and sufficiency of the security offered will be subject to approval by the Comptroller of the City of New York after the award is made and prior to the signing of the contract.

No estimate will be received or considered unless accompanied by either a certified check upon one of the State or National Banks of the City of New York, drawn to the order of the Comptroller, or money, to the amount of five per centum of the amount of security required for the faithful performance of the contract. Such check or money must not be inclosed in the sealed envelope containing the estimate, but must be handed to the officer or clerk of the Department who has charge of the estimate-box, and no estimate can be deposited in said box until such check or money has been examined by said officer or clerk and found to be correct. All such deposits, except that of the successful bidder, will be returned to the persons making the same, within three days after the contract is awarded. If the successful bidder shall refuse or neglect, within five days after notice that the contract has been awarded to him, to execute the same, the amount of the deposit made by him shall be forfeited to and retained by the City of New York as liquidated damages for such neglect or refusal; but if he shall execute the contract within the time aforesaid, the amount of his deposit will be returned to him.

Bidders are informed that no deviation from the specifications will be allowed, unless under the written instructions of the Engineer-in-Chief.

No estimate will be accepted from, or contract awarded to, any person who is in arrears to the Corporation, upon debt or contract, or who is a defaulter, as surety or otherwise, upon any obligation to the Corporation.

The right to decline all the estimates is reserved, if deemed for the interest of the Corporation of the City of New York.

three days after the contract is awarded. If the successful bidder shall refuse or neglect, within five days after notice that the contract has been awarded to him, to execute the same, the amount of the deposit made by him shall be forfeited to and retained by the City of New York as liquidated damages for such neglect or refusal; but if he shall execute the contract within the time aforesaid, the amount of his deposit will be returned to him.

Bidders are informed that no deviation from the specifications will be allowed, unless under the written instructions of the Engineer-in-Chief.

No estimate will be accepted from, or contract awarded to, any person who is in arrears to the Corporation, upon debt or contract, or who is a defaulter, as surety or otherwise, upon any obligation to the Corporation.

The right to decline all the estimates is reserved, if deemed for the interest of the Corporation of the City of New York.

Bidders are requested, in making their bids or estimates, to use the blank prepared for that purpose by the Department, a copy of which, together with the form of agreement, including specifications, and showing the manner of payment for the work, can be obtained upon application therefor at the office of the Department.

EDWIN A. POST,
JAMES MATTHEWS,
CHARLES A. SILLIMAN,
Commissioners of the Department of Docks.
Dated New York, February 4, 1889.

DEPARTMENT OF STREET CLEANING.

DEPARTMENT OF STREET CLEANING,
CITY OF NEW YORK,
Nos. 49 AND 51 CHAMBERS STREET,
NEW YORK, February 9, 1889.

PUBLIC NOTICE IS HEREBY GIVEN THAT the following articles, the property of the Department of Street Cleaning, will be sold at public auction at the Stables of said Department, Seventeenth street and Avenue C, by William Kennelly, Auctioneer, on Thursday, the 28th day of February, 1889, at 11 o'clock in the forenoon:

1. Department of Street Cleaning Scow, known as No. 19, lying at One Hundred and Ninth street, East river, filled with water.
4. Horses, known as Nos. 12, 66, 81, and 115.
- About 2,000 pounds of Old Rope.
- About 2,000 pounds of Old Horseshoes.
- About 3,000 pounds of Old Iron.
- 12 pieces of Office Furniture.
- 1 pair of Scales.
- 1 Horse-power and Hay-cutting Machine.
- Lot of Horse Collars.
- 4 Drop Lights (gas-lamps).

TERMS OF SALE.

The purchase money to be paid in bankable funds at the time of sale or the articles will be resold.

Purchasers will be required to remove their articles from the Stables within twenty-four hours after the sale. Information in relation to the articles to be sold may be obtained from the Superintendent of Stables, at Seventeenth street and Avenue C.

JAMES S. COLEMAN,
Commissioner of Street Cleaning.

NOTICE.

PERSONS HAVING BULKHEADS TO FILL, IN the vicinity of New York Bay, can procure material for that purpose—ashes, street sweepings, etc., such as is collected by the Department of Street Cleaning—free of charge, by applying to the Commissioner of Street Cleaning, at No. 51 Chambers street.

J. S. COLEMAN,
Commissioner of Street Cleaning

DEPARTMENT OF PUBLIC PARKS.

DEPARTMENT OF PUBLIC PARKS,
Nos. 49 AND 51 CHAMBERS STREET,
NEW YORK, February 7, 1889.

NOTICE IS HEREBY GIVEN THAT THE Commissioners of the Department of Public Parks, in the City of New York, will, on February 27, 1889, at 11 o'clock A. M., at their office in the Emigrants' Savings Bank Building, Nos. 49 and 51 Chambers street, in said city, hear and consider all statements, objections and evidence that may then and there be offered in reference to proposed changes in the system of streets in a portion of the Spuyten Duyvil District of the Twenty-fourth Ward in said city, in pursuance of the provisions of chapter 721 of the Laws of 1887.

The general character and extent of the contemplated changes consist in discontinuing and closing a street laid out along the hillside leading from Palisade avenue to Spuyten Duyvil Parkway; also a street from the Spuyten Duyvil Parkway (crossing Morrison street) to a street running from Palisade avenue to the lands of John Ewen; laying out a street to take the place of a portion of this last closed street between the Spuyten Duyvil Parkway and "Independence avenue," and extending "Independence avenue" northward to Morrison street.

A map showing the contemplated changes is now on exhibition in said office.

J. HAMPDEN ROBB,
M. C. D. BORDEN,
WALDO HUTCHINS,
STEVENSON TOWLE,
Commissioners of Public Parks.

CITY OF NEW YORK—DEPARTMENT OF PUBLIC PARKS,
Nos. 49 AND 51 CHAMBERS STREET,
NEW YORK, February 7, 1889.

NOTICE IS HEREBY GIVEN THAT THE Commissioners of the Department of Public Parks, in the City of New York, will, on the 27th day of February, 1889, at 11 o'clock A. M., at their office, in the Emigrants' Savings Bank Building, Nos. 49 and 51 Chambers street, in said city, hear and consider all statements, objections and evidence that may then and there be offered in reference to a proposed change in the street system in the Woodlawn District, Twenty-fourth Ward, between Eastchester street, Mt. Vernon avenue, the north boundary of the City and the Bronx river, pursuant to the provisions of chapter 721 of the Laws of 1887.

The general character and extent of the contemplated change consist in changing the location, width, course, windings, lines and class of, and discontinuing and closing, in whole or in part, certain streets, avenues, roads, etc., and laying out and extending others to take their places, in that part of the "Woodlawn District" above described.

A map showing the proposed change is on exhibition in said office.

J. HAMPDEN ROBB,
M. C. D. BORDEN,
WALDO HUTCHINS,
STEVENSON TOWLE,
Commissioners of Public Parks.

DEPARTMENT OF PUBLIC PARKS,
Nos. 49 AND 51 CHAMBERS STREET,
NEW YORK, February 7, 1889.

NOTICE IS HEREBY GIVEN THAT THE Commissioners of the Department of Public Parks, in the City of New York, will, on the 27th day of February, 1889, at 11 o'clock A. M., at their office, in the Emigrants' Savings Bank Building, Nos. 49 and 51 Chambers street, in said city, hear and consider all statements, objections and evidence that may then and there be offered in reference to a proposed change in the street system in that part of the "Spuyten Duyvil District," Twenty-fourth Ward, lying between River-

dale avenue, Myers road, Broadway and Spuyten Duyvil creek, in pursuance of the provisions of chapter 721 of the Laws of 1887.

The general character and extent of the contemplated changes are as follows:

Changing the location, width, course and lines, and discontinuing and closing a portion of Riverdale avenue, from the west side of Tippet's brook to Broadway.

Changing the location, course and lines, and discontinuing and closing a portion of Ackerman street, and laying out again and widening a street (formerly a part of Ackerman street) from the first street north of Weber's lane to Broadway.

Discontinuing and closing "Verveelen," "Ononda," and "Tackamack" places.

Discontinuing and closing the "proposed Tippet's Brook Canal," and laying out a street to take its place, from Myers road to Riverdale avenue, and discontinuing and closing unnamed streets on each side of this last-mentioned street.

Extending Weber's lane and the next street north of it.

Laying out three new cross streets north of Weber's lane.

Changing the width of Kingsbridge avenue (former Church street) from 80 to 60 feet, from Broadway to Kingsbridge.

Discontinuing and closing a part of Broadway and changing its course at and near the crossing of the Spuyten Duyvil creek, and laying out again the part of Broadway from near said crossing to Kingsbridge.

A map showing the proposed change is on exhibition in said office.

J. HAMPDEN ROBB,
M. C. D. BORDEN,
WALDO HUTCHINS,
STEVENSON TOWLE,
Commissioners of Public Parks.

CITY OF NEW YORK—DEPARTMENT OF PUBLIC PARKS,
Nos. 49 AND 51 CHAMBERS STREET,
February 7, 1889.

NOTICE IS HEREBY GIVEN THAT THE Commissioners of the Department of Public Parks, in the City of New York, will, at their office, Nos. 49 and 51 Chambers street, in the Emigrants' Savings Bank Building, in said city, at 11 o'clock A. M. on the 27th day of February, 1889, attend and hear and consider all statements, objections and evidence which may be then and there offered in reference to the contemplated change, alteration, amendment and revision, under the authority of chapter 721 of the Laws of 1887, of the maps or plans heretofore adopted by said Department by authority of law, showing streets, avenues, roads, etc., in that part of the Kingsbridge District of the Twenty-fourth Ward bounded on the north by Van Cortlandt Park; on the east by Sedgwick avenue; on the south by Emmerich place and Heath avenue, and on the west by the Harlem river and Broadway.

The general character and extent of the contemplated change are as follows:

Laying out Hadley place, and changing the lines of Heath avenue and Emmerich place.

Changing the width of Montgomery avenue and closing a portion of same.

Changing location and width and closing a portion of Montgomery place, and readopting "Boston avenue" and "The Old Albany Post Road."

Changing the lines and closing part of Bailey avenue.

Readopting part of the old Kingsbridge road.

Changing the lines of Macomb street.

Changing the lines and width of a street between Kingsbridge road and Boston avenue.

Changing the location and lines of Fort Independence street.

Laying out Giles place.

Discontinuing and closing certain streets, and laying out others to take their places, between Broadway and Fort Independence street.

Changing the location and lines of Van Cortlandt avenue.

Extending two streets from Commerce to Bailey avenue.

A map showing the contemplated changes is on exhibition in said office.

J. HAMPDEN ROBB,
M. C. D. BORDEN,
WALDO HUTCHINS,
STEVENSON TOWLE,
Commissioners of Public Parks.

DEPARTMENT OF PUBLIC PARKS,
Nos. 49 AND 51 CHAMBERS STREET,
NEW YORK, February 7, 1889.

NOTICE IS HEREBY GIVEN THAT THE Commissioners of the Department of Public Parks, in the City of New York, will, at their office, Nos. 49 and 51 Chambers street, in the Emigrants' Savings Bank Building, in said city, on Wednesday, February 27, 1889, at 11 o'clock A. M., hear and consider all statements, objections and evidence that may then and there be offered in reference to a contemplated revision of the street system in that part of the Twenty-fourth Ward lying between Third avenue, St. John's College, the Southern Boulevard and Tremont avenue, in pursuance of the provisions of chapter 721 of the Laws of 1887.

The general character and extent of the contemplated change consist in changing the location, width, course, windings, lines and class of, and discontinuing and closing, in whole or in part, certain streets, avenues and roads, and laying out and extending others to take their places, in the former villages of "Belmont," "South Belmont" and "East Tremont," in the West Farms and Central Districts, Twenty-fourth Ward.

A map showing the proposed change is on exhibition in said office.

Parties interested in the matter of the grades of the several streets, etc., within the limits above mentioned are also requested to call and examine said map and express their views as to the grades thereon shown as proposed to be established.

J. HAMPDEN ROBB,
M. C. D. BORDEN,
WALDO HUTCHINS,
STEVENSON TOWLE,
Commissioners of Public Parks.

DEPARTMENT OF PUBLIC PARKS,
Nos. 49 AND 51 CHAMBERS STREET,
NEW YORK, February 1, 1889.

TO CONTRACTORS.

SEALED BIDS OR ESTIMATES FOR EACH OF the following-mentioned works, with the title of the work and the name of the bidder indorsed thereon, also the number of the work as in the advertisement, will be received by the Department of Public Parks, at its offices, Nos. 49 and 51 Chambers street, until eleven o'clock A. M. on Wednesday, February 13, 1889:

- No. 1. For Constructing a Sewer and Branches with Appurtenances, from Railroad Avenue, East, near One Hundred and Fifty-third Street, to and across the New York and Harlem Railroad property and land belonging to Chauncey M. Depew and Cornelius Vanderbilt, to One Hundred and Sixty-first street, and in One Hundred and Sixty-first street to Sherman avenue.
- No. 2. For furnishing and delivering Screened Gravel, of the quality known as Roa Hook Gravel, where required on the Central Park and Riverside Park and avenue.
- No. 3. For furnishing Uniforms for the Park Police Force.

Special notice is given that the works must be bid for separately, that is, more than one work must not be included in the same estimate or envelope.

The nature and extent of each of the works, as near as it is possible to state them, in advance, is as follows:

NUMBER 1, ABOVE-MENTIONED.

Sewer, Class I, 2,400 Lin. Feet.

- 470 linear feet of brick sewer, of 5 feet 4 inches by 6 feet interior diameters, including concrete foundation, and exclusive of spurs for house connections, as per section marked "A" on the plan of the work.
- 1,930 linear feet of brick sewer, of 5 feet by 6 feet interior diameters, including concrete foundation, and exclusive of spurs for house connections, as per section marked "B" on the plan of the work.

2,400

Sewer, Class II, 680 Lin. Feet.

- 680 linear feet of brick sewer, of 3 feet 2 inches interior diameters, including masonry cradle, and exclusive of spurs for house connections, as per section marked "C" on the plan of the work.

Sewer, Class III, 200 Lin. Feet.

- 190 linear feet of 18-inch pipe sewer, including concrete cradle, and exclusive of spurs for house connections.
- 5 linear feet of 15-inch pipe sewer, including concrete cradle, and exclusive of spurs for house connections.
- 5 linear feet of 12-inch pipe sewer, including concrete cradle, and exclusive of spurs for house connections.

200

- 21 manholes and ventilators complete on the sewers comprised under Classes I, II, and III., as hereinabove designated.
- 50 spurs for house connections.

- 40,000 linear feet, below caps, of Piles, including furnishing, driving and cutting off, and cast-iron shoes on the piles when required.
- 170 thousand feet, board measure, of Timber for foundations, to be furnished and laid.

- 50 cubic yards of concrete in place, exclusive of the sewer foundations and cradle for pipe sewers.
- 100 cubic yards of broken stone in place.

- 150 cubic yards of rubble masonry laid in mortar for foundations of branch sewers of Class II., exclusive of rubble masonry in the sewer sections, as shown on the plans.

In addition to the above quantities of work to be done, if sheet piling is required and ordered by the Engineer to be left in the trench, it will be measured and paid for at ONE-HALF of the price bid for timber. Also the time required for the completion of the whole work, which will be tested at the rate of \$4 per day.

NUMBER 2, ABOVE-MENTIONED.

- 9,000 cubic yards Double Screened Gravel for roads and drives.

NUMBER 3, ABOVE-MENTIONED.

- 1 Blouse for Captain.
- 6 Blouses for Sergeants.
- 12 Blouses for Roundsmen.
- 200 Blouses for Patrolmen.
- 7 pairs Winter Pants for Captain and Sergeants.
- 25 pairs Winter Pants for Mounted Policemen.
- 187 pairs Winter Pants for Roundsmen and Patrolmen.
- 7 pairs Summer Pants for Captain and Sergeants.
- 25 pairs Summer Pants for Mounted Policemen.
- 187 pairs Summer Pants for Roundsmen and Patrolmen.

As the above-mentioned quantities, though stated with as much accuracy as is possible in advance, are approximate only, bidders are required to submit their estimates upon the following express conditions, which shall apply to and become a part of every estimate received:

Bidders must satisfy themselves by personal examination of the location of the proposed work, and by such other means as they may prefer, as to the accuracy of the foregoing statement, and shall not, at any time after the submission of an estimate, dispute or complain of such statement, nor assert that there was any misunderstanding in regard to the depth of the excavation to be made, or the nature or amount of the work to be done.

Bidders will be required to complete the entire work to the satisfaction of the Department of Public Parks, and in substantial accordance with the specifications for the work and the plans therein referred to. No extra compensation beyond the amount payable for the several classes of work before enumerated, which shall be actually performed at the prices therefor, to be specified by the lowest bidder, shall be due or payable for the entire work.

The person making any bid or estimate must furnish the same, inclosed in a sealed envelope, to the head of said Department, at his office, on or before the day and hour above mentioned.

The envelope must be indorsed with the name or names of the person presenting the same, the date of its presentation, and a statement of the work to which it relates.

The estimates received will be publicly opened by the head of the said Department at the place and hour last above mentioned and read.

Each bid or estimate shall contain and state the name and place of residence of each of the persons making the same; the names of all persons interested with him or them therein; and if no other person be so interested, it shall distinctly state that fact; that it is made without any connection with any other person making an estimate for the same purpose, and is in all respects fair and without collusion or fraud; and that no member of the Common Council, Head of a Department, Chief of a Bureau, Deputy thereof, or Clerk therein, or other officer of the Corporation, is directly or indirectly interested therein, or in the supplies or work to which it relates, or in any portion of the profits thereof. The bid or estimate must be verified by the oath, in writing, of the party or parties making the estimate, that the several matters stated therein are in all respects true. Where more than one person is interested, it is requisite that the verification be made and subscribed by all the parties interested.

Each bid or estimate shall be accompanied by the consent, in writing, of two householders or freeholders in the City of New York, with their respective places of business or residence, to the effect that if the contract be awarded to the person making the estimate, they will, on its being so awarded, become bound as his sureties for its faithful performance; and that if he shall omit or refuse to execute the same, they will pay to the Corporation any difference between the sum to which he would be entitled on its completion and that which the Corporation may be obliged to pay to the person or persons to whom the contract may be awarded at any subsequent letting; the amount in each case to be calculated upon the estimated amount of work by which the bids are tested. The consent above mentioned shall be accompanied by the oath or affirmation, in writing, of each of the persons signing the same, that he is a householder or freeholder in the City of New York, and is worth the amount of the security required for the completion of this contract, over and above all his debts of every nature, and over and above his liabilities as bail, surety or otherwise; and that he has offered himself as surety in good faith and with the intention to execute the bond required by section 27 of chapter 8 of the Revised Ordinances of the City of New York, if the contract shall be awarded to the person or persons for whom he consents to become surety. The adequacy and sufficiency of the security offered to be approved by the Comptroller of the City of New York.

No bid or estimate will be received or considered unless accompanied by either a certified check upon one of the National or State Banks of the City of New York, drawn to the order of the Comptroller, or money, to the amount of five per centum of the amount of the security required for the faithful performance of the contract. Such check or money must not be inclosed in the sealed envelope containing the estimates, but must be handed to the officer or clerk of the Department who has charge of the Estimate-box, and no estimate can be deposited in said box until such check or money has been examined by said officer or clerk and found to be correct. All such deposits, except that of the successful bidder, will be returned to the persons

making the same within three days after the contract is awarded. If the successful bidder shall refuse or neglect, within five days after notice that the contract has been awarded to him, to execute the same, the amount of the deposit made by him shall be forfeited to and retained by the City of New York, as liquidated damages for such neglect or refusal; but if he shall execute the contract within the time aforesaid, the amount of his deposit will be returned to him.

N. B.—The prices must be written in the estimate and also stated in figures, and all estimates will be considered as informal which do not contain bids for all items for which bids are herein called, or which contain bids for items for which bids are not herewith called for. Permission will not be given for the withdrawal of any bid or estimate. No bid will be accepted from, or contract awarded to, any person who is in arrears to the Corporation upon debt or contract, or who is a defaulter, as surety or otherwise, upon any obligation to the Corporation.

The amount in which security will be required for the performance of the several contracts is as follows:

For Number 1, above-mentioned	\$34,000 00
" 2, " "	7,000 00
" 3, " "	3,000 00

The Department of Public Parks reserves the right to reject any or all the bids received in response to this advertisement if it should deem it for the interest of the City so to do, and to readvertise until satisfactory bids or proposals shall be received. But the contracts when awarded will, in each case, be awarded to the lowest bidder.

Blank forms for proposals and forms of the several contracts which the successful bidders will be required to execute, can be had at the office of the Secretary, and the plans can be seen and information relative to them can be had, at the office of the Department, Nos. 49 and 51 Chambers street.

J. HAMPDEN ROBB,
M. C. D. BORDEN,
WALDO HUTCHINS,
STEVENSON TOWLE,
Commissioners of Public Parks.

DEPARTMENT OF PUBLIC CHARITIES AND CORRECTION.

DEPARTMENT OF PUBLIC CHARITIES AND CORRECTION,
No. 66 THIRD AVENUE.

TO CONTRACTORS.

PROPOSALS FOR FLOUR.

SEALED BIDS OR ESTIMATES FOR FURNISHING AND DELIVERING, FREE OF ALL EXPENSE, AT THE BAKE-HOUSE DOCK, BLACKWELL'S ISLAND (east side), 4,000 barrels extra Wheat Flour, in lots of 500 to 1,000 barrels, one-half of each quality, as follows:

- 2,000 barrels of sample marked No. 1.
- 2,000 barrels of sample marked No. 2.

—will be received at the office of the Department of Public Charities and Correction, No. 66 Third Avenue, in the City of New York, until 9.30 o'clock A. M. of Thursday, February 21, 1889. The person or persons making any bid or estimate shall furnish the same in a sealed envelope, indorsed "Bid or Estimate for Flour," and with his or their name or names, and the date of presentation, to the head of said Department, at the said office, on or before the day and hour above named, at which time and place the bids or estimates received will be publicly opened by the President of said Department and read.

The contractor shall furnish a certificate of inspection by the Flour Inspector of the New York Produce Exchange, also an award from the Committee on Flour of the Exchange, that the flour offered is equal to the standards of the Department, and which certificate shall accompany each delivery of flour, the expense of such inspection and award to be borne by the contractor, also certificate of weight and tare to be furnished with each delivery.

THE BOARD OF PUBLIC CHARITIES AND CORRECTION RESERVES THE RIGHT TO REJECT ALL BIDS OR ESTIMATES IF DEEMED TO BE FOR THE PUBLIC INTEREST, AS PROVIDED IN SECTION 64, CHAPTER 410, LAWS OF 1882.

No bid or estimate will be accepted from, or contract awarded to, any person who is in arrears to the Corporation upon debt or contract, or who is a defaulter, as surety or otherwise, upon any obligation to the Corporation.

The award of the contract will be made as soon as practicable after the opening of the bids.

Delivery will be required to be made from time to time, and in such quantities as may be directed by the said Commissioners.

Any bidder for this contract must be known to be engaged in and well prepared for the business, and must have satisfactory testimonials to that effect; and the person or persons to whom the contract may be awarded will be required to give security for the performance of the contract by his or their bond, with two sufficient sureties, each in the penal amount of fifty (50) per cent. of the ESTIMATED amount of the contract.

Each bid or estimate shall contain and state the name and place of residence of each of the persons making the same; the names of all persons interested with him or them therein; and if no other person be so interested, it shall distinctly state that fact; also that it is made without any connection with any other person making an estimate for the same purpose, and is in all respects fair and without collusion or fraud; and that no member of the Common Council, Head of a Department, Chief of a Bureau, Deputy thereof, or Clerk therein, or other officer of the Corporation, is directly or indirectly interested therein, or in the supplies or work to which it relates, or in any portion of the profits thereof. The bid or estimate must be verified by the oath, in writing, of the party or parties making the estimate, that the several matters stated therein are in all respects true. Where more than one person is interested, it is requisite that the verification be made and subscribed by all the parties interested.

Each bid or estimate shall be accompanied by the consent, in writing, of two householders or freeholders in the City of New York, with their respective places of business or residence, to the effect that if the contract be awarded to the person making the estimate, they will, on its being so awarded, become bound as his sureties for its faithful performance; and that if he shall omit or refuse to execute the same, they will pay to the Corporation any difference between the sum to which he would be entitled on its completion, and that which the Corporation may be obliged to pay to the person or persons to whom the contract may be awarded at any subsequent letting; the amount in each case to be calculated upon the estimated amount of the work by which the bids are tested. The consent above mentioned shall be accompanied by the oath or affirmation, in writing, of each of the persons signing the same, that he is a householder or freeholder in the City of New York, and is worth the amount of the security required for the completion of this contract, over and above all his debts of every nature, and over and above his liabilities as bail, surety or otherwise; and that he has offered himself as surety in good faith and with the intention to execute the bond required by section 12 of chapter 7 of the Revised Ordinances of the City of New York, if the contract shall be awarded to the person or persons for whom he consents to become surety. The adequacy and sufficiency of the security offered to be approved by the Comptroller of the City of New York.

No bid or estimate will be considered unless accompanied by either a certified check upon one of the State or National banks of the City of New York, drawn to the order of the Comptroller, or money, to the amount of five per centum of the amount of the security required for the faithful performance of

the contract. Such check or money must not be enclosed in the sealed envelope containing the estimate, but must be handed to the officer or clerk of the Department who has charge of the Estimate-box, and no estimate can be deposited in said box until such check or money has been examined by said officer or clerk and found to be correct. All such deposits, except that of the successful bidder, will be returned to the persons making the same within three days after the contract is awarded. If the successful bidder shall refuse or neglect, within five days after notice that the contract has been awarded to him, to execute the same, the amount of the deposit made by him shall be forfeited to and retained by the City of New York, as liquidated damages for such neglect or refusal; but if he shall execute the contract within the time aforesaid, the amount of his deposit will be returned to him.

Should the person or persons to whom the contract may be awarded neglect or refuse to accept the contract within five days after written notice that the same has been awarded to his or their bid or proposal, or if he or they accept, but do not execute the contract and give the proper security, he or they shall be considered as having abandoned it, and as in default to the Corporation; and the contract will be readvertised and relet as provided by law.

The quality of the articles, supplies, goods, wares, and merchandise must conform in every respect to the samples of the same on exhibition at the office of the said Department. Bidders are cautioned to examine the specifications for particulars of the articles, etc., required, before making their estimates.

Bidders will state the price for each article, by which the bids will be tested.

Bidders will write out the amount of their estimate in addition to inserting the same in figures.

Payment will be made by a requisition on the Comptroller, in accordance with the terms of the contract, or from time to time, as the Commissioners may determine. The form of the contract, including specifications, and showing the manner of payment, can be obtained at the office of the Department, and bidders are cautioned to examine each and all of its provisions carefully, as the Board of Public Charities and Correction will insist upon its absolute enforcement in every particular.

Dated New York, February 9, 1889.

THOMAS S. BRENNAN, President,
HENRY H. PORTER, Commissioner,
CHARLES E. SIMMONS, M. D., Commissioner,
Public Charities and Correction.

DEPARTMENT OF PUBLIC CHARITIES AND CORRECTION,
No. 66 THIRD AVENUE.

TO CONTRACTORS.

PROPOSALS FOR GROCERIES, DRY GOODS, C. I. GAS-PIPE, HARDWARE, ETC., AND LUMBER.

SEALED BIDS OR ESTIMATES FOR FURNISHING

GROCERIES, ETC.

- 10,400 pounds Fairly Butter, sample on exhibition Wednesday, February 20, 1889.
- 1,500 pounds Cheese.
- 5,000 pounds Prunes.
- 100 barrels Crackers.
- 100 barrels prime quality American Salt, 320 pounds net each, to be delivered at Blackwell's Island within twenty days.
- 40 boxes Candles, 40 pounds each, 16 ounces to the pound.
- 4,016 dozen Fresh Eggs, all to be candled.
- 50 dozen Canned Peas.
- 100 pieces prime quality City Cured Bacon, to average about 6 pounds each.
- 100 prime quality City Cured Smoked Hams, to average about 14 pounds each.
- 611 barrels good, sound White Potatoes, to weigh 172 pounds net per barrel.
- 50 barrels prime Red or Yellow Onions, to weigh 150 pounds net per barrel.
- 100 barrels prime Carrots, 130 pounds net per barrel.
- 1,600 heads prime good sized Cabbage, to be delivered in crates or barrels.
- 100 bales prime quality Timothy Hay, tare not to exceed 3 pounds; weight charged as received at Blackwell's Island.
- 500 bales prime quality long, bright Rye Straw, tare and weight same as on Hay.
- 100 bags Coarse Meal, 100 pounds net each.

DRY GOODS, ETC.

- 20 bales Cotton Batts, 50 pounds each; 16 ounces to the pound.
- 500 dozen pairs Men's Socks.
- 100 pieces Crinoline.
- 500 pounds pure S. A. Curled Hair.

GAS-PIPE, HARDWARE, WOODEN-WARE, ETC.

- 1000 pipes Sand-paper, 20 each Nos. 1 and 1½; 30 each Nos. 2 and 2½.
- 6 dozen Garden Rakes.
- 3 dozen Mortice Locks, sample.
- 2 dozen Sicksles.
- 1 dozen Scythe Stones, round.
- 1 dozen Tailors' Shears.
- 100 dozen Cotton Mops.
- 48 dozen Mop Handles, "Star."
- 300 sides prime quality Waxed Kip Leather, to average about 11 feet.
- 40 barrels first quality Plaster Paris.
- 2,250 linear feet first quality Cast-iron Gas-pipe, 4-inch.
- 2,700 linear feet first quality Cast-iron Gas-pipe, 5-inch.
- 1,500 linear feet first quality Cast-iron Gas-pipe, 6-inch.
- 8 boxes first quality I. C. Roofing Tin, 14 x 20.
- 2 kegs each first quality Cut Nails, 8d, rod, 12d, 20d.

LUMBER.

- 500 first quality clear White Pine Boards, thoroughly seasoned, free from loose and black knots, tongued and grooved, dressed one side, 1" x 10" x 13 feet.
- 10,000 square feet first quality, thoroughly seasoned, edged or vertical grained Georgia Yellow Pine Flooring, dressed, tongued and grooved, 1½" x 3½".
- 500 square feet clear, thoroughly seasoned White Pine, ½".
- 1,000 feet first quality, thoroughly seasoned, edged or vertical grained Georgia Yellow Pine Flooring, dressed, tongued and grooved, ¾" x 3½".
- 600 square feet first quality, thoroughly seasoned, edged or vertical grained Georgia Yellow Pine Plank, 2", undressed.
- 50 first quality Spruce Joists, 4" x 6" x 18 feet.
- 50 first quality Spruce Joists, 2" x 3" x 13 feet.
- 50 first quality Spruce Joists, 3" x 4" x 13 feet.
- 500 feet first quality clear, thoroughly seasoned White Pine Partition Boards, ¾" x 3½", tongued and grooved, beaded and dressed two sides.
- 1 first quality Spruce Spar, 45 feet long; other dimensions as per specifications furnished.
- 1,600 square feet first quality clear, thoroughly seasoned White Pine Sheathing, dressed, tongued and grooved, ¾" x 10" x 12 feet.
- 2,000 square feet first quality thoroughly seasoned, clear White Pine Ceiling Boards, tongued and grooved, beaded and dressed one side, ¾" x 4½" x 16 feet.
- 72 White Pine Studs, first quality, thoroughly seasoned, 3 x 4 x 16 feet.
- 24 first quality Spruce Joists, 3" x 6" x 16 feet.

600 square feet first quality thoroughly seasoned Georgia Yellow Pine Flooring, dressed, tongued and grooved, 1½" x 3½".

150 first quality clear, thoroughly seasoned White Pine Strips, dressed, ¾" x 2".

All lumber to be delivered at Blackwell's Island.

—will be received at the Department of Public Charities and Correction, in the City of New York, until 9.30 o'clock A. M. of Thursday, February 21, 1889. The person or persons making any bid or estimate shall furnish the same in a sealed envelope indorsed "Bid or Estimate for Groceries, Dry Goods, Cast-iron Gas-pipe, Hardware, etc., and Lumber," with his or their name or names, and the date of presentation, to the head of said Department, at the said office, on or before the day and hour above named, at which time and place the bids or estimates received will be publicly opened by the President of said Department and read.

THE BOARD OF PUBLIC CHARITIES AND CORRECTION RESERVES THE RIGHT TO REJECT ALL BIDS OR ESTIMATES IF DEEMED TO BE FOR THE PUBLIC INTEREST, AS PROVIDED IN SECTION 64, CHAPTER 410, LAWS OF 1882.

No bid or estimate will be accepted from, or contract awarded to, any person who is in arrears to the Corporation upon debt or contract, or who is a defaulter, as surety or otherwise, upon any obligation to the Corporation.

The award of the contract will be made as soon as practicable after the opening of the bids.

Delivery will be required to be made from time to time, and in such quantities as may be directed by the said Commissioners.

Any bidder for this contract must be known to be engaged in and well prepared for the business, and must have satisfactory testimonials to that effect, and the person or persons to whom the contract may be awarded will be required to give security for the performance of the contract by his or their bond, with two sufficient sureties, in the penal amount of fifty (50) per cent. of the ESTIMATED amount of the contract.

Each bid or estimate shall contain and state the name and place of residence of each of the persons making the same; the names of all persons interested with him or them therein; and if no other person be so interested, it shall distinctly state that fact; also that it is made without any connection with any other person making an estimate for the same purpose, and is in all respects fair and without collusion or fraud; and that no member of the Common Council, Head of a Department, Chief of a Bureau, Deputy thereof or Clerk therein; or other officer of the Corporation, is directly or indirectly interested therein, or in the supplies or work to which it relates, or in any portion of the profits thereof. The bid or estimate must be verified by the oath, in writing, of the party or parties making the estimate, that the several matters stated therein are in all respects true. Where more than one person is interested, it is requisite that the verification be made and subscribed by all the parties interested.

Each bid or estimate shall be accompanied by the consent, in writing, of two householders or freeholders in the City of New York, with their respective places of business or residence, to the effect that if the contract be awarded to the person making the estimate, they will, on its being so awarded, become bound as his sureties for its faithful performance, and that if he shall omit or refuse to execute the same, they shall pay to the Corporation any difference between the sum to which he would be entitled on its completion, and that which the Corporation may be obliged to pay to the person or persons to whom the contract may be awarded at any subsequent letting; the amount in each case to be calculated upon the estimated amount of the work by which the bids are tested. The consent above mentioned shall be accompanied by the oath or affirmation, in writing, of each of the persons signing the same, that he is a householder or freeholder in the City of New York, and is worth the amount of the security required for the completion of this contract, over and above all his debts of every nature, and over and above his liabilities as bail, surety and otherwise; and that he has offered himself as a surety in good faith and with the intention to execute the bond required by section 12 of chapter 7 of the Revised Ordinances of the City of New York, if the contract shall be awarded to the person or persons for whom he consents to become surety. The adequacy and sufficiency of the security offered to be approved by the Comptroller of the City of New York.

No bid or estimate will be considered unless accompanied by either a certified check upon one of the State or National banks of the City of New York, drawn to the order of the Comptroller, or money to the amount of five per centum of the amount of the security required for the faithful performance of the contract. Such check or money must not be inclosed in the sealed envelope containing the estimate, but must be handed to the officer or clerk of the Department who has charge of the Estimate-box, and no estimate can be deposited in said box until such check or money has been examined by said officer or clerk and found to be correct. All such deposits, except that of the successful bidder, will be returned to the persons making the same within three days after the contract is awarded. If the successful bidder shall refuse or neglect, within five days after notice that the contract has been awarded to him, to execute the same, the amount of the deposit made by him shall be forfeited to and retained by the City of New York, as liquidated damages for such neglect or refusal; but if he shall execute the contract within the time aforesaid, the amount of his deposit will be returned to him.

Should the person or persons to whom the contract may be awarded neglect or refuse to accept the contract within five days after written notice that the same has been awarded to his or their bid or proposal, or if he or they accept but do not execute the contract and give the proper security, he or they shall be considered as having abandoned it, and as in default to the Corporation, and the contract will be readvertised and relet, as provided by law.

The quality of the articles, supplies, goods, wares, and merchandise must conform in every respect to the samples of the same on exhibition at the office of the said Department. Bidders are cautioned to examine the specifications for particulars of the articles, etc., required, before making their estimates.

Bidders will state the price for each article, by which the bids will be tested.

Bidders will write out the amount of their estimate in addition to inserting the same in figures.

Payment will be made by a requisition on the Comptroller, in accordance with the terms of the contract, or from time to time, as the Commissioners may determine. The form of the contract, including specifications, and showing the manner of payment, will be furnished at the office of the Department, and bidders are cautioned to examine each and all of its provisions carefully, as the Board of Public Charities and Correction will insist upon its absolute enforcement in every particular.

Dated New York, February 9, 1889.

THOMAS S. BRENNAN, President,
HENRY H. PORTER, Commissioner,
CHARLES E. SIMMONS, M. D., Commissioner,
Public Charities and Correction.

DEPARTMENT OF PUBLIC CHARITIES AND CORRECTION,
No. 66 THIRD AVENUE,
New York, February 4, 1889.

IN ACCORDANCE WITH AN ORDINANCE OF the Common Council, "In relation to the burial of strangers or unknown persons who may die in any of the public institutions of the City of New York," the Commissioners of Public Charities and Correction report as follows:

At Morgue, Bellevue Hospital, from foot of Stanton street—Unknown man, aged about 50 years; 5 feet 7 inches high; gray hair and eyes, dark moustache. Had on chinchilla overcoat, brown vest, gray pants, plaid cotton shirt, gray woolen undershirt, red cotton socks, gaiters, black Derby hat.

At Charity Hospital, Blackwell's Island—Hugh McCall, aged 46 years; 5 feet 7 inches high; blue eyes, black hair. Had on when admitted 2 dark coats, vest and pants, colored shirt, white drawers, shoes, black Derby hat.

At Workhouse, Blackwell's Island—Maggie Ryan, aged 30 years. Committed January 27, 1889.
 Mary Arthur, aged 60 years. Committed January 16, 1889.
 At Lunatic Asylum, Blackwell's Island—Annie Thompson, aged 60 years; 5 feet 2 inches high; gray hair, brown eyes. Had on when admitted plaid shawl, black sash, black petticoat, shoes.
 Mary A. Fitzpatrick, aged 58 years; 5 feet 2 inches high; gray hair, blue eyes. Transferred from Workhouse, December 20, 1888, and had on Corporation clothing.
 At N. Y. City Asylum for Insane, Ward's Island—Marcus Neuringberg, aged 39 years; 5 feet 5½ inches high; brown hair, black eyes.
 Nothing known of their friends or relatives.

By order,

G. F. BRITTON,
Secretary.**AQUEDUCT COMMISSION.**

AQUEDUCT COMMISSIONERS' OFFICE,
 ROOM 209, STEWART BUILDING, NO. 180 BROADWAY,
 NEW YORK, FEBRUARY 8, 1889.

TO CONTRACTORS.

BIDS OR PROPOSALS FOR FURNISHING the roof, double doors, windows, railing, floor plates and copper leaders, including the furnishing of all the materials, labor, transportation, etc., necessary or required to put the same in complete working order at the Ardley Gate-house, on Section 7 of the New Aqueduct, as called for in the approved forms of contract and specifications on file in the office of the Aqueduct Commissioners, will be received at this office until **WEDNESDAY, FEBRUARY 27, 1889, at 3 o'clock P. M.**, at which place and hour they will be publicly opened by the Aqueduct Commissioners, and the award for doing said work and furnishing said material will be made by said Commissioners as soon thereafter as possible.

Blank forms of said approved contract and the specifications therefor, and bids or proposals and proper envelopes for their enclosure, and form of bond, and also the plans for said work and all other information, can be obtained at the above office of the Aqueduct Commissioners on application to the Secretary.

By order of the Aqueduct Commissioners,
JAMES C. DUANE,
President.JOHN C. SHEEHAN,
Secretary.**SUPREME COURT.**

In the matter of the application of the Board of Street Opening and Improvement of the City of New York, for and on behalf of the Mayor, Aldermen and Commonality of the City of New York, relative to the opening of AVENUE B, from Eighty-sixth street to the marginal street, bulkhead line, Harlem river, in the Twelfth Ward of the City of New York.

PURSUANT TO THE STATUTES IN SUCH cases made and provided, notice is hereby given that an application will be made to the Supreme Court of the State of New York, at a Special Term of said Court, to be held at Chambers thereof, in the County Court-house, in the City of New York, on Saturday, the 2d day of March, 1889, at the opening of Court on that day, or as soon thereafter as counsel can be heard thereon, for the appointment of Commissioners of Estimate and Assessment in the above-entitled matter. The nature and extent of the improvement hereby intended is the acquisition of title, in the name and on behalf of the Mayor, Aldermen and Commonality of the City of New York, for the use of the public, to all the lands and premises, with the buildings thereon and the appurtenances thereto belonging, required for the opening of a certain street or avenue known as Avenue B, from Eighty-sixth street to the marginal street, bulkhead line, Harlem river, in the Twelfth Ward of the City of New York, being the following described lots, pieces or parcels of land, viz.:

Beginning at a point in the northerly line of Eighty-sixth street, distant 646 feet easterly from the easterly line of Avenue A; thence northerly and parallel with said avenue, distance 1,011 feet 4¼ inches to the bulkhead line, Harlem river; thence southeasterly along said line 130 feet 11 inches; thence southerly and parallel with Avenue A, and distant 746 feet easterly therefrom, distance 926 feet 10½ inches to the northerly line of Eighty-sixth street; thence westerly along said line 100 feet, to the point or place of beginning.

Said avenue to be 100 feet wide between the northerly line of Eighty-sixth street and the bulkhead line, Harlem river.

Dated NEW YORK, January 31, 1889.

HENRY R. BEEKMAN,

Counsel to the Corporation,
No. 2 Tryon Row, New York City.

In the matter of the application of the Board of Street Opening and Improvement of the City of New York, for and on behalf of the Mayor, Aldermen and Commonality of the City of New York, relative to acquiring title, wherever the same has not been heretofore acquired, to EAST ONE HUNDRED AND SEVENTY-FIFTH STREET (although not yet named by proper authority), extending from Carter avenue to the Southern Boulevard, in the Twenty-fourth Ward of the City of New York, as the same has been heretofore laid out and designated as a first-class street or road by the Department of Public Parks.

PURSUANT TO THE STATUTES IN SUCH cases made and provided, notice is hereby given that an application will be made to the Supreme Court of the State of New York, at a Special Term of said Court, to be held at Chambers thereof, in the County Court-house, in the City of New York, on Saturday, the 2d day of March, 1889, at the opening of the Court on that day, or as soon thereafter as counsel can be heard thereon, for the appointment of Commissioners of Estimate and Assessment in the above-entitled matter. The nature and extent of the improvement hereby intended is the acquisition of title, in the name and on behalf of the Mayor, Aldermen and Commonality of the City of New York, for the use of the public, to all the lands and premises, with the buildings thereon and the appurtenances thereto belonging, required for the opening of a certain street or avenue known as East One Hundred and Seventy-fifth street, extending from Carter avenue to the Southern Boulevard, in the Twenty-fourth Ward of the City of New York, as the same has been heretofore laid out and designated as a first-class street or road by the Department of Public Parks, being the following-described lots, pieces or parcels of land, viz.:

PARCEL A.

Beginning at a point in the western line of Webster avenue, distant 736.69 feet southerly from the intersection of the southern line of Tremont avenue with the western line of Webster avenue.

1st. Thence southerly along the western line of Webster avenue for 60 feet.

2d. Thence westerly deflecting 90° 22' 43" to the right for 110.39 feet.

3d. Thence northerly deflecting 89° 38' 48" to the right for 60 feet.

4th. Thence easterly for 110.36 feet to the point of beginning.

PARCEL B.

Beginning at a point in the eastern line of Webster avenue, distant 740.84 feet southerly from the intersection of the southern line of Tremont avenue with the eastern line of Webster avenue.

1st. Thence southerly along the eastern line of Webster avenue for 60 feet.

2d. Thence easterly deflecting 89° 37' 17" to the left for 1,308.98 feet to the western line of Third avenue.

3d. Thence northerly along the western line of Third avenue for 60.66 feet.

4th. Thence westerly for 1,306.80 feet to the point of beginning.

PARCEL C.

Beginning at a point in the eastern line of Third avenue, distant 932.27 feet southerly from the intersection of the southern line of Tremont avenue with the eastern line of Third avenue.

1st. Thence southerly along the eastern line of Third avenue for 60.66 feet.

2d. Thence easterly deflecting 87° 29' 20" to the left for 177.05 feet.

3d. Thence easterly, curving to the left on the arc of a circle, tangent to the preceding course, whose radius is 300 feet, for 100.79 feet.

4th. Thence easterly on a line tangent to the preceding course for 395.98 feet.

5th. Thence easterly deflecting 33° 36' 05" to the right for 471.12 feet to the western line of Broadway.

6th. Thence northerly along the western line of Broadway for 60 feet.

7th. Thence westerly deflecting 90° 12' 40" to the left for 489.46 feet.

8th. Thence westerly deflecting 33° 36' 05" to the left for 414.09 feet.

9th. Thence westerly curving to the right on the arc of a circle, tangent to the preceding course, whose radius is 240 feet, for 80.63 feet.

10th. Thence westerly for 179.68 feet to the point of beginning.

PARCEL D.

Beginning at a point in the western line of Southern Boulevard, distant 718.08 feet northerly from the intersection of the northern line of Boston Road with the western line of Southern Boulevard.

1st. Thence northerly along the western line of Southern Boulevard for 60.04 feet.

2d. Thence westerly deflecting 87° 53' 14" to the left for 637.57 feet.

3d. Thence westerly deflecting 11° 16' 20" to the right for 1,581.20 feet to the eastern line of Broadway.

4th. Thence southerly along the eastern line of Broadway for 60 feet.

5th. Thence easterly deflecting 90° 12' 40" to the left for 1,587.34 feet.

6th. Thence easterly for 645.71 feet to the point of beginning.

And as shown on certain maps filed by the Commissioners of the Department of Public Parks, in the office of the Register of the City and County of New York, in the office of the Secretary of State of the State of New York, and in the Department of Public Parks.

Dated NEW YORK, January 31, 1889.

HENRY R. BEEKMAN,

Counsel to the Corporation,
No. 2 Tryon Row, New York City.

In the matter of the application of the Board of Street Opening and Improvement of the City of New York, for and on behalf of the Mayor, Aldermen and Commonality of the City of New York, relative to acquiring title, wherever the same has not been heretofore acquired, to EAST ONE HUNDRED AND SEVENTY-FOURTH STREET (although not yet named by proper authority), extending from Carter avenue to Third avenue, in the Twenty-fourth Ward of the City of New York, as the same has been heretofore laid out and designated as a first-class street or road by the Department of Public Parks.

PURSUANT TO THE STATUTES IN SUCH cases made and provided, notice is hereby given that an application will be made to the Supreme Court of the State of New York, at a Special Term of said Court, to be held at Chambers thereof, in the County Court-house, in the City of New York, on Saturday, the 2d day of March, 1889, at the opening of the court on that day, or as soon thereafter as counsel can be heard thereon, for the appointment of Commissioners of Estimate and Assessment in the above-entitled matter. The nature and extent of the improvement hereby intended is the acquisition of title, in the name and on behalf of the Mayor, Aldermen and Commonality of the City of New York, for the use of the public, to all the lands and premises, with the buildings thereon and the appurtenances thereto belonging, required for the opening of a certain street or avenue known as East One Hundred and Seventy-fourth street, extending from Carter avenue to Third avenue, in the Twenty-fourth Ward of the City of New York, as the same has been heretofore laid out and designated as a first-class street or road by the Department of Public Parks, being the following described lots, pieces or parcels of land, viz.:

PARCEL A.

Beginning at a point in the western line of Webster avenue, distant 1,321.51 feet southerly from the intersection of the southern line of Tremont avenue with the western line of Webster avenue.

1st. Thence southerly along the western line of Webster avenue for 50.06 feet.

2d. Thence westerly deflecting 87° 10' 03" to the right for 110.78 feet.

3d. Thence northerly deflecting 92° 51' 29" to the right for 50.06 feet.

4th. Thence easterly for 110.76 feet to the point of beginning.

PARCEL B.

Beginning at a point in the eastern line of Webster avenue, distant 1,320.05 feet southerly from the intersection of the southern line of Tremont avenue with the eastern line of Webster avenue.

1st. Thence southerly along the eastern line of Webster avenue for 50.06 feet.

2d. Thence easterly deflecting 92° 49' 57" to the left for 337.45 feet.

3d. Thence northerly deflecting 87° 06' 07" to the left for 50.06 feet.

4th. Thence westerly for 337.51 feet to the point of beginning.

PARCEL C.

Beginning at a point in the western line of Third avenue, distant 1,613.08 feet southerly from the intersection of the southern line of Tremont avenue with the western line of Third avenue.

1st. Thence southerly along the western line of Third avenue for 50.03 feet.

2d. Thence westerly deflecting 92° 07' 40" to the right for 921.59 feet.

3d. Thence northerly deflecting 90° 04' 12" to the right for 50 feet.

4th. Thence easterly for 929.62 feet to the point of beginning.

And as shown on certain maps filed by the Commissioners of the Department of Public Parks, in the office of the Register of the City and County of New York, in the office of the Secretary of State of the State of New York, and in the Department of Public Parks.

Dated NEW YORK, January 31, 1889.

HENRY R. BEEKMAN,

Counsel to the Corporation,
No. 2 Tryon Row, New York City.

In the matter of the application of the Board of Street Opening and Improvement of the City of New York, for and on behalf of the Mayor, Aldermen and Commonality of the City of New York, relative to the opening of ONE HUNDRED AND EIGHTEENTH STREET, from Tenth avenue to Morningside avenue, west, in the Twelfth Ward of the City of New York.

PURSUANT TO THE STATUTES IN SUCH cases made and provided, notice is hereby given that an application will be made to the Supreme Court of the State of New York, at a Special Term of said Court, to be held at Chambers thereof in the County Court-house, in the City of New York, on Thursday, the 28th day of February, 1889, at the opening of court on that day, or as soon thereafter as counsel can be heard thereon, for the appointment of Commissioners of Estimate and Assessment in the above-entitled matter. The nature and extent of the improvement hereby intended is the acquisition of title, in the name and on behalf of the Mayor, Aldermen and Commonality of the City of New York, for the use of the public, to all the lands and premises, with the buildings thereon and the appurtenances thereto belonging, required for the opening of a certain street or avenue known as One Hundred and Eighteenth street, extending from Tenth avenue to Morningside avenue, west, in the Twelfth Ward of the City of New York, being the following described lots, pieces or parcels of land, viz.:

appurtenances thereto belonging, required for the opening of a certain street or avenue known as One Hundred and Eighteenth street, from Tenth avenue to Morningside avenue, west, in the Twelfth Ward of the City of New York, being the following described lots, pieces or parcels of land, viz.:

Beginning at a point in the easterly line of Tenth avenue, distant 463 feet 8 inches northerly from the northerly line of One Hundred and Sixteenth street; thence easterly and parallel with One Hundred and Sixteenth street 450 feet, to the westerly line of Morningside avenue, west; thence northerly along said line 60 feet; thence westerly 450 feet to the easterly line of Tenth avenue; thence southerly along said line 60 feet, to the point or place of beginning.

Said street to be 60 feet wide between the line of Tenth avenue and Morningside avenue, west.

Dated NEW YORK, January 28, 1889.

HENRY R. BEEKMAN,

Counsel to the Corporation,
No. 2 Tryon Row, New York City.

In the matter of the application of the Board of Street Opening and Improvement of the City of New York, for and on behalf of the Mayor, Aldermen and Commonality of the City of New York, relative to the opening of ONE HUNDRED AND THIRTY-SECOND STREET, from Twelfth avenue to the bulkhead-line, Hudson river, in the Twelfth Ward of the City of New York.

PURSUANT TO THE STATUTES IN SUCH cases made and provided, notice is hereby given that an application will be made to the Supreme Court of the State of New York, at a Special Term of said Court, to be held at Chambers thereof in the County Court-house, in the City of New York, on Thursday, the 28th day of February, 1889, at the opening of court on that day, or as soon thereafter as counsel can be heard thereon, for the appointment of Commissioners of Estimate and Assessment in the above-entitled matter. The nature and extent of the improvement hereby intended is the acquisition of title, in the name and on behalf of the Mayor, Aldermen and Commonality of the City of New York, for the use of the public, to all the lands and premises, with the buildings thereon and the appurtenances thereto belonging, required for the opening of a certain street or avenue known as One Hundred and Thirty-second street, from Twelfth avenue to the bulkhead-line, Hudson river, in the Twelfth Ward of the City of New York, being the following described lots, pieces or parcels of land, viz.:

Beginning at a point in the westerly line of Twelfth avenue, distant 199 feet 10 inches northerly from the northerly line of One Hundred and Thirty-first street; thence westerly and parallel with said street 273 feet 3¼ inches to the bulkhead-line, Hudson river; thence northerly along said line 60 feet 2½ inches; thence easterly 308 feet 2¼ inches to the westerly line of Twelfth avenue; thence southerly along said line 60 feet to the point or place of beginning.

Said street to be 60 feet wide between the line of Twelfth avenue and bulkhead-line, Hudson river.

Dated NEW YORK, January 28, 1889.

HENRY R. BEEKMAN,

Counsel to the Corporation,
No. 2 Tryon Row, New York City.

In the matter of the application of the Board of Street Opening and Improvement of the City of New York, for and on behalf of the Mayor, Aldermen and Commonality of the City of New York, relative to acquiring title, wherever the same has not been heretofore acquired, to that part of MELROSE AVENUE (although not yet named by proper authority) extending from Third avenue to East One Hundred and Sixty-third street, in the Twenty-third Ward of the City of New York, as the same has been heretofore laid out and designated as a first-class street or road by the Department of Public Parks.

PURSUANT TO THE STATUTES IN SUCH cases made and provided, the Mayor, Aldermen and Commonality of the City of New York hereby give notice that the Counsel to the Corporation will apply to the Supreme Court, in the First Judicial District of the City of New York, at a Special Term thereof, to be held at the Chambers of said Court, in the County Court-house, in the City of New York, on the 28th day of February, 1889, at 10.30 o'clock in the forenoon of that day, or as soon thereafter as counsel can be heard thereon, for the appointment of a Commissioner of Estimate and Assessment in the above-entitled proceeding in the place and stead of Edward L. Parris, resigned.

Dated NEW YORK, January 28, 1889.

HENRY R. BEEKMAN,

Counsel to the Corporation,
No. 2 Tryon Row, New York City.

In the matter of the application of the Board of Education by the Counsel to the Corporation of the City of New York, relative to acquiring title by the Mayor, Aldermen and Commonality of the City of New York, to certain lands at the northwest corner of Ninety-third street and Tenth avenue, in the Twelfth Ward of said City, duly selected and approved by said Board as a site for school purposes, under and in pursuance of the provisions of chapter 191 of the Laws of 1888.

PURSUANT TO THE PROVISIONS OF CHAPTER 191 of the Laws of 1888, the Board of Education hereby gives notice that the Counsel to the Corporation will make application to a Special Term of the Supreme Court of the State of New York, in and for the First Department, to be held at the Chambers of said Court in the County Court-house in the City of New York, on the 14th day of February, 1889, at the opening of the court on that day, or as soon thereafter as Counsel can be heard thereon, for the appointment of a Commissioner of Estimate in the above-entitled proceeding, in the place and stead of Edward L. Parris, who declines to serve.

Dated, NEW YORK, January 17, 1889.

HENRY R. BEEKMAN,

Counsel to the Corporation,
No. 2 Tryon Row, New York City.

In the matter of the application of the Board of Street Opening and Improvement of the City of New York, for and on behalf of the Mayor, Aldermen and Commonality of the City of New York, relative to acquiring title to certain lands in the Sixth Ward of the City of New York, bounded by Park, Mulberry, Bayard and Baxter streets, for a public park, as laid out by said Board, under and in pursuance of chapter 30 of the Laws of 1887.

PURSUANT TO THE PROVISIONS OF CHAPTER 30 of the Laws of 1887, the Mayor, Aldermen and Commonality of the City of New York hereby give notice that the Counsel to the Corporation will make application to a Special Term of the Supreme Court of the State of New York in and for the First Department, to be held at the Chambers of said Court in the County Court-house in the City of New York, on the 14th day of February, 1889, at the opening of the Court on that day, or as soon thereafter as Counsel can be heard thereon, for the appointment of a Commissioner of Estimate in the above-entitled proceeding in the place and stead of Edward L. Parris, resigned.

Dated NEW YORK, January 17, 1889.

HENRY R. BEEKMAN,

Counsel to the Corporation,
No. 2 Tryon Row, New York City.

In the matter of the application of the Board of Street Opening and Improvement of the City of New York, for and on behalf of the Mayor, Aldermen and Commonality of the City of New York, relative to the opening of FIFTY-FOURTH STREET, from Tenth avenue to the bulkhead-line, Hudson river, in the Twenty-second Ward of the City of New York.

PURSUANT TO THE STATUTES IN SUCH cases made and provided, notice is hereby given that an application will be made to the Supreme Court of the State of New York, at a Special Term of said

Court, to be held at Chambers thereof in the County Court-house, in the City of New York, on Thursday, the 14th day of February, 1889, at the opening of court on that day, or as soon thereafter as Counsel can be heard thereon, for the appointment of Commissioners of Estimate and Assessment in the above-entitled matter. The nature and extent of the improvement hereby intended is the acquisition of title, in the name and on behalf of the Mayor, Aldermen and Commonality of the City of New York, for the use of the public, to all the lands and premises, with the buildings thereon and the appurtenances thereto belonging, required for the opening of a certain street or avenue known as Fifty-fourth street, from Tenth avenue to the bulkhead-line, Hudson river, in the Twenty-second Ward of the City of New York, being the following described lots, pieces or parcels of land, viz.:

Beginning at a point in the westerly line of Eleventh avenue, distant 200 feet 10 inches southerly from the southerly line of Fifty-fifth street; thence westerly and parallel with said street 1,050 feet to the bulkhead-line, Hudson river; thence southerly along said line 60 feet; thence easterly 1,050 feet to the westerly line of Eleventh avenue; thence northerly 60 feet to the point or place of beginning.

Also, beginning at a point in the westerly line of Tenth avenue, distant 200 feet 10 inches southerly from the southerly line of Fifty-fifth street; thence westerly and parallel with said street 800 feet to the easterly line of Eleventh avenue; thence southerly along said line 60 feet; thence easterly 800 feet to the westerly line of Tenth avenue; thence northerly along said line 60 feet to the point or place of beginning.

Said street to be 60 feet wide between the Tenth avenue and bulkhead-line, Hudson river.

Dated NEW YORK, January 8, 1889.

HENRY R. BEEKMAN,

Counsel to the Corporation,
No. 2 Tryon Row, New York City.

In the matter of the application of the Board of Street Opening and Improvement of the City of New York, for and on behalf of the Mayor, Aldermen and Commonality of the City of New York, relative to acquiring title to that part of EAST ONE HUNDRED AND FORTY-SECOND STREET (although not yet named by proper authority) extending from Rider avenue to St. Ann's avenue, in the Twenty-third Ward of the City of New York, as the same has been heretofore laid out and designated as a first-class street or road by the Department of Public Parks.

WE, THE UNDERSIGNED COMMISSIONERS of Estimate and Assessment in the above-entitled matter, hereby give notice to the owner or owners, occupant or occupants, of all houses and lots and improved or unimproved lands affected thereby, and to all others whom it may concern, to wit:

First—That we have completed our estimate and assessment, and that all persons interested in these proceedings, or in any of the lands affected thereby, and who may be opposed to the same, do present their objections in writing, duly verified, to us at our office, No. 200 Broadway (fifth floor), in the said City, on or before the 28th day of February, 1889, and that we, the said Commissioners, will hear parties so objecting within the ten week days next after the said 28th day of February, 1889, and for that purpose will be in attendance at our said office on each of said ten days at 3 o'clock, P. M.

Second—That the abstract of the said estimate and assessment, together with our maps, and also all the affidavits, estimates and other documents which were used by us in making our report, have been deposited in the office of the Department of Public Works, in the City of New York, there to remain until the 28th day of February, 1889.

Third—That the limits embraced by the assessment aforesaid are as follows, to wit: All those lots, pieces or parcels of land, situate, lying and being in the City of New York which, taken together, are bounded and described as follows, viz.: Northerly by the centre line of the blocks between East One Hundred and Forty-second street and East One Hundred and Forty-third street; easterly by the westerly side of St. Ann's avenue; southerly by the centre line of the blocks between East One Hundred and Forty-first street and East One Hundred and Forty-second street, and westerly by the easterly side of Rider avenue; excepting from said area all the streets, avenues and roads, or portions thereof, heretofore legally opened, and all the unimproved land included within the lines of streets, avenues, roads, public squares and places shown and laid out upon any map or maps filed by the Commissioners of the Department of Public Parks, pursuant to the provisions of chapter 604 of the Laws of 1874, and the laws amendatory thereof, or of chapter 410 of the Laws of 1882, as such area is shown upon our benefit map deposited as aforesaid.

Fourth—That our report herein will be presented to the Supreme Court of the State of New York, at a Special Term thereof, to be held at the Chambers thereof, in the County Court-house, at the City Hall, in the City of New York, on the twenty-ninth day of March, 1889, at the opening of the court on that day, and that then and there, or as soon thereafter as counsel can be heard thereon, a motion will be made that the said report be confirmed.

Dated NEW YORK, January 18, 1889.

JAMES J. TRAYNOR,

PETER MCGINNIS,

MAX MOSES,

Commissioners.

CARROLL BERRY,
Clerk.

In the matter of the application of the Board of Street Opening and Improvement of the City of New York, for and on behalf of the Mayor, Aldermen and Commonality of the City of New York, relative to acquiring title, wherever the same has not been heretofore acquired, to BOSCOBEL AVENUE (although not yet named by proper authority), extending from the easterly approach to the bridge over the Harlem river at West One Hundred and Eighty-first street to Jerome avenue, in the Twenty-third and Twenty-fourth Wards of the City of New York, as the same has been heretofore laid out and designated as a first-class street or road by the Department of Public Parks.

PURSUANT TO THE STATUTES IN SUCH cases made and provided, notice is hereby given that an application will be made to the Supreme Court of the State of New York, at a Special Term of said Court, to be held at Chambers thereof in the County Court-house, in the City of New York, on Thursday, the 14th day of February, 1889, at the opening of the court on that day, or as soon thereafter as Counsel can be heard thereon, for the appointment of Commissioners of Estimate and Assessment in the above-entitled matter. The nature and extent of the improvement hereby intended is the acquisition of title, in the name and on behalf of the Mayor, Aldermen and Commonality of the City of New York, for the use of the public, to all the lands and premises, with the buildings thereon and the appurtenances thereto belonging, required for the opening of a certain street or avenue known as Boscobel avenue, extending from the easterly approach to the bridge over the Harlem river at West One Hundred and Eighty-first street to Jerome avenue, in the Twenty-third and Twenty-fourth Wards of the City of New York, as the same has been heretofore laid out and designated as a first-class street or road by the Department of Public Parks, being the following described lots, pieces or parcels of land, viz.:

Beginning at the intersection of the northern and eastern lines of the land acquired for the approach to the bridge over the Harlem river at West One Hundred and Eighty-first street.

1st. Thence easterly along the prolongation of the northern line of said approach for 23.87 feet.

2d. Thence southeasterly, deflecting 17° 14' 26" to the right, for 66.8 feet.

3d. Th

the southwest with the prolongation of the preceding course, and is 230 feet for 208.65 feet.

4th. Thence southerly on a line tangent to the preceding course for 324.28 feet.

5th. Thence southerly, curving to the left on the arc of a circle tangent to the preceding course, whose radius is 300 feet for 164.76 feet.

6th. Thence southeasterly on a line tangent to the preceding course for 1,021.31 feet.

7th. Thence southerly, deflecting 30° 39' 30" to the right, for 299.50 feet.

8th. Thence southwesterly, curving to the right on the arc of a circle tangent to the preceding course, whose radius is 440 feet for 161.27 feet.

9th. Thence southwesterly on a line tangent to the preceding course for 437.54 feet.

10th. Thence southerly, curving to the left on the arc of a circle tangent to the preceding course, whose radius is 135 feet for 57.75 feet.

11th. Thence southerly on a line tangent to the preceding course for 528.15 feet to the western line of Jerome avenue.

12th. Thence southwesterly along the western line of Jerome avenue for 108.95 feet.

13th. Thence northerly, deflecting 132° 45' 10" to the right, for 602.11 feet.

14th. Thence northerly, curving to the right on the arc of a circle tangent to the preceding course, whose radius is 215 feet for 91.98 feet.

15th. Thence northeasterly on a line tangent to the preceding course for 437.54 feet.

16th. Thence northeasterly, curving to the left on the arc of a circle tangent to the preceding course, whose radius is 360 feet for 131.95 feet.

17th. Thence northerly on a line tangent to the preceding course for 277.57 feet.

18th. Thence northwesterly, deflecting 30° 39' 30" to the left, for 999.38 feet.

19th. Thence northerly, curving to the right on the arc of a circle tangent to the preceding course, whose radius is 380 feet for 208.70 feet.

20th. Thence northerly on a line tangent to the preceding course for 286.97 feet.

21st. Thence northerly, curving to the left on the arc of a circle tangent to the preceding course, whose radius is 145.63 feet for 158.29 feet.

22d. Thence northwesterly on a line which forms an angle of 113° 21' 36" to the right with the radius drawn through the northern extremity of the preceding course for 67.81 feet.

23d. Thence westerly, deflecting 26° 27' 35" to the left for 20.41 feet, to the intersection of the southern and eastern lines of the approach to the bridge over the Harlem river at West One Hundred and Eighty-first street.

24th. Thence northeasterly along the eastern line of said approach for 101.98 feet to the point of beginning.

And as shown on certain maps filed by the Commissioners of the Department of Public Parks, in the office of the Register of the City and County of New York, in the office of the Secretary of State of the State of New York, and in the Department of Public Parks.

Dated New York, January 8, 1889.

HENRY R. BECKMAN,
Counsel to the Corporation,
No. 2 Tryon Row, New York City.

In the matter of the application of the Board of Street Opening and Improvement of the City of New York, for and on behalf of the Mayor, Aldermen and Commonality of the City of New York, relative to acquiring title, wherever the same has not been heretofore acquired, to EAST ONE HUNDRED AND SEVENTY-SECOND STREET (although not yet named by proper authority), extending from Vanderbilt avenue East to Third avenue, in the Twenty-fourth Ward of the City of New York, as the same has been heretofore laid out and designated as a first-class street or road by the Department of Public Parks.

PURSUANT TO THE STATUTES IN SUCH cases made and provided, notice is hereby given that an application will be made to the Supreme Court of the State of New York, at a Special Term of said Court, to be held at Chambers thereof in the County Court-house, in the City of New York, on Thursday, the 14th day of February, 1889, at the opening of the Court on that day, or as soon thereafter as Counsel can be heard thereon, for the appointment of Commissioners of Estimate and Assessment in the above-entitled matter. The nature and extent of the improvement hereby intended is the acquisition of title, in the name and on behalf of the Mayor, Aldermen and Commonality of the City of New York, for the use of the public, to all the lands and premises, with the buildings thereon and the appurtenances thereto belonging, required for the opening of a certain street or avenue known as East One Hundred and Seventy-second street, extending from Vanderbilt avenue East to Third avenue, in the Twenty-fourth Ward of the City of New York, as the same has been heretofore laid out and designated as a first-class street or road by the Department of Public Parks, being the following described lots, pieces or parcels of land, viz.:

Beginning at a point in the western line of Third avenue, distant 527.87 feet northerly from the intersection of the northern line of Wendover avenue with the western line of Third avenue.

1st. Thence northerly along the western line of Third avenue for 60.29 feet.

2d. Thence westerly, deflecting 95° 39' 04" to the left, for 869.31 feet.

3d. Thence southerly, deflecting 89° 55' 46" to the left, for 60 feet.

4th. Thence easterly, for 863.44 feet, to the point of beginning.

And as shown on certain maps filed by the Commissioners of the Department of Public Parks, in the office of the Register of the City and County of New York, in the office of the Secretary of State of the State of New York, and in the Department of Public Parks.

Dated New York, January 8, 1889.

HENRY R. BECKMAN,
Counsel to the Corporation,
No. 2 Tryon Row, New York City.

In the matter of the application of the Board of Street Opening and Improvement of the City of New York, for and on behalf of the Mayor, Aldermen and Commonality of the City of New York, relative to acquiring title, wherever the same has not been heretofore acquired, to BIRCH STREET (although not yet named by proper authority), extending from Wolf street to Marcher avenue, in the Twenty-third Ward of the City of New York, as the same has been heretofore laid out and designated as a first-class street or road by the Department of Public Parks.

Beginning at a point in the western line of Third avenue, distant 527.87 feet northerly from the intersection of the northern line of Wendover avenue with the western line of Third avenue.

1st. Thence northerly along the western line of Third avenue for 60.29 feet.

2d. Thence westerly, deflecting 95° 39' 04" to the left, for 869.31 feet.

3d. Thence southerly, deflecting 89° 55' 46" to the left, for 60 feet.

4th. Thence easterly, for 863.44 feet, to the point of beginning.

And as shown on certain maps filed by the Commissioners of the Department of Public Parks, in the office of the Register of the City and County of New York, in the office of the Secretary of State of the State of New York, and in the Department of Public Parks.

Dated New York, January 8, 1889.

HENRY R. BECKMAN,
Counsel to the Corporation,
No. 2 Tryon Row, New York City.

In the matter of the application of the Board of Street Opening and Improvement of the City of New York, for and on behalf of the Mayor, Aldermen and Commonality of the City of New York, relative to acquiring title, wherever the same has not been heretofore acquired, to BIRCH STREET (although not yet named by proper authority), extending from Wolf street to Marcher avenue, in the Twenty-third Ward of the City of New York, as the same has been heretofore laid out and designated as a first-class street or road by the Department of Public Parks.

Beginning at a point in the western line of Third avenue, distant 527.87 feet northerly from the intersection of the northern line of Wendover avenue with the western line of Third avenue.

1st. Thence northerly along the western line of Third avenue for 60.29 feet.

2d. Thence westerly, deflecting 95° 39' 04" to the left, for 869.31 feet.

3d. Thence southerly, deflecting 89° 55' 46" to the left, for 60 feet.

4th. Thence easterly, for 863.44 feet, to the point of beginning.

And as shown on certain maps filed by the Commissioners of the Department of Public Parks, in the office of the Register of the City and County of New York, in the office of the Secretary of State of the State of New York, and in the Department of Public Parks.

Dated New York, January 8, 1889.

HENRY R. BECKMAN,
Counsel to the Corporation,
No. 2 Tryon Row, New York City.

In the matter of the application of the Board of Street Opening and Improvement of the City of New York, for and on behalf of the Mayor, Aldermen and Commonality of the City of New York, relative to acquiring title, wherever the same has not been heretofore acquired, to BIRCH STREET (although not yet named by proper authority), extending from Wolf street to Marcher avenue, in the Twenty-third Ward of the City of New York, as the same has been heretofore laid out and designated as a first-class street or road by the Department of Public Parks.

Beginning at a point in the western line of Third avenue, distant 527.87 feet northerly from the intersection of the northern line of Wendover avenue with the western line of Third avenue.

1st. Thence northerly along the western line of Third avenue for 60.29 feet.

2d. Thence westerly, deflecting 95° 39' 04" to the left, for 869.31 feet.

3d. Thence southerly, deflecting 89° 55' 46" to the left, for 60 feet.

4th. Thence easterly, for 863.44 feet, to the point of beginning.

And as shown on certain maps filed by the Commissioners of the Department of Public Parks, in the office of the Register of the City and County of New York, in the office of the Secretary of State of the State of New York, and in the Department of Public Parks.

Dated New York, January 8, 1889.

HENRY R. BECKMAN,
Counsel to the Corporation,
No. 2 Tryon Row, New York City.

70° 27' 45" to the northeast with a line parallel to the Tenth avenue for 1,342.90 feet.

2d. Thence southerly on the arc of a circle whose centre lies easterly of the eastern extremity of the first course and whose radius, drawn through said eastern extremity, forms an angle of 5° 21' 35" northwardly with the eastern prolongation of the preceding course and is 680 feet for 60.11 feet.

3d. Thence westerly, on a line which forms an angle of 178° 38' 43" southerly with a radius of the preceding course drawn through its southern extremity, for 1,304.61 feet.

4th. Thence northerly for 69.35 feet to the point of beginning.

And as shown on certain maps filed by the Commissioners of the Department of Public Parks, in the office of the Register of the City and County of New York, in the office of the Secretary of State of the State of New York, and in the Department of Public Parks.

Dated New York, January 8, 1889.

HENRY R. BECKMAN,
Counsel to the Corporation,
No. 2 Tryon Row, New York City.

In the matter of the application of the Board of Education by the Counsel to the Corporation of the City of New York, relative to acquiring title by the Mayor, Aldermen and Commonality of the City of New York, to certain lands at the northwest corner of Sixty-eighth street and Tenth avenue, in the Twenty-second Ward of said city, duly selected and approved by said Board as a site for school purposes, under and in pursuance of the provisions of chapter 191 of the Laws of 1888.

PURSUANT TO THE PROVISIONS OF CHAPTER 191 of the Laws of 1888, the Board of Education hereby gives notice that the Counsel to the Corporation will make application to a Special Term of the Supreme Court of the State of New York in and for the First Department, to be held at the Chambers of said Court in the County Court-house, in the City of New York, on the 14th day of February, 1889, at the opening of the Court on that day, or as soon thereafter as Counsel can be heard thereon, for the appointment of a Commissioner of Estimate in the above-entitled proceeding, in the place and stead of Edward L. Parris, who declines to serve.

Dated New York, January 17, 1889.

HENRY R. BECKMAN,
Counsel to the Corporation,
No. 2 Tryon Row, New York City.

In the matter of the application of the Board of Street Opening and Improvement of the City of New York, for and on behalf of the Mayor, Aldermen and Commonality of the City of New York, relative to the opening of FIFTY-SECOND STREET, from Eleventh avenue to the bulkhead-line, Hudson river, in the Twenty-second Ward of the City of New York.

PURSUANT TO THE STATUTES IN SUCH cases made and provided, notice is hereby given that an application will be made to the Supreme Court of the State of New York, at a Special Term of said Court, to be held at Chambers thereof in the County Court-house, in the City of New York, on Thursday, the 14th day of February, 1889, at the opening of court on that day, or as soon thereafter as Counsel can be heard thereon, for the appointment of Commissioners of Estimate and Assessment in the above-entitled matter. The nature and extent of the improvement hereby intended is the acquisition of title, in the name and on behalf of the Mayor, Aldermen and Commonality of the City of New York, for the use of the public, to all the lands and premises, with the buildings thereon and the appurtenances thereto belonging, required for the opening of a certain street or avenue known as Fifty-second street, from Eleventh avenue to the bulkhead-line, Hudson river, in the Twenty-second Ward of the City of New York, being the following described lots, pieces, or parcels of land, viz.:

Beginning at a point in the westerly line of Eleventh avenue, distant 200 feet 10 inches northerly from the northerly line of Fifty-first street; thence westerly and parallel with said street 1,050 feet to the bulkhead-line, Hudson river; thence northerly along said line 60 feet; thence easterly 1,050 feet to the westerly line of Eleventh avenue; thence southerly along said line 60 feet to the point or place of beginning.

Said street to be 60 feet wide between the Eleventh avenue and bulkhead-line, Hudson river.

Dated New York, January 8, 1889.

HENRY R. BECKMAN,
Counsel to the Corporation,
No. 2 Tryon Row, New York City.

In the matter of the application of the Board of Street Opening and Improvement of the City of New York, for and on behalf of the Mayor, Aldermen and Commonality of the City of New York, relative to the opening of ONE HUNDRED AND THIRTY-FOURTH STREET, from the Boulevard to Tenth avenue, in the Twelfth Ward of the City of New York.

PURSUANT TO THE STATUTES IN SUCH cases made and provided, notice is hereby given that an application will be made to the Supreme Court of the State of New York, at a Special Term of said Court, to be held at Chambers thereof in the County Court-house, in the City of New York, on Thursday, the 14th day of February, 1889, at the opening of Court on that day, or as soon thereafter as Counsel can be heard thereon, for the appointment of Commissioners of Estimate and Assessment in the above-entitled matter. The nature and extent of the improvement hereby intended is the acquisition of title, in the name and on behalf of the Mayor, Aldermen and Commonality of the City of New York, for the use of the public, to all the lands and premises, with the buildings thereon and the appurtenances thereto belonging, required for the opening of a certain street or avenue known as One Hundred and Thirty-fourth street, from the Boulevard to Tenth avenue, in the Twelfth Ward of the City of New York, being the following described lots, pieces or parcels of land, viz.:

Beginning at a point in the westerly line of Tenth avenue, distant 199 feet 10 inches northerly from the northerly line of One Hundred and Thirty-third street; thence westerly and parallel with said street, distance 775 feet, to the easterly line of the Boulevard; thence northerly along said line 60 feet; thence easterly 775 feet to the westerly line of Tenth avenue; thence southerly along said line 60 feet, to the point or place of beginning.

Said street to be 60 feet wide between the Boulevard and Tenth avenue.

Dated New York, January 8, 1889.

HENRY R. BECKMAN,
Counsel to the Corporation,
No. 2 Tryon Row, New York City.

In the matter of the application of the Board of Street Opening and Improvement of the City of New York, for and on behalf of the Mayor, Aldermen and Commonality of the City of New York, relative to the opening of ONE HUNDRED AND THIRTY-FOURTH STREET, from the Boulevard to Tenth avenue, in the Twelfth Ward of the City of New York.

PURSUANT TO THE STATUTES IN SUCH cases made and provided, notice is hereby given that an application will be made to the Supreme Court of the State of New York, at a Special Term of said Court, to be held at Chambers thereof in the County Court-house, in the City of New York, on Thursday, the 14th day of February, 1889, at the opening of Court on that day, or as soon thereafter as Counsel can be heard thereon, for the appointment of Commissioners of Estimate and Assessment in the above-entitled matter. The nature and extent of the improvement hereby intended is the acquisition of title, in the name and on behalf of the Mayor, Aldermen and Commonality of the City of New York, for the use of the public, to all the lands and premises, with the buildings thereon and the appurtenances thereto belonging, required for the opening of a certain street or avenue known as One Hundred and Thirty-fourth street, from the Boulevard to Tenth avenue, in the Twelfth Ward of the City of New York, being the following described lots, pieces or parcels of land, viz.:

Beginning at a point in the westerly line of Tenth avenue, distant 199 feet 10 inches northerly from the northerly line of One Hundred and Thirty-third street; thence westerly and parallel with said street, distance 775 feet, to the easterly line of the Boulevard; thence northerly along said line 60 feet; thence easterly 775 feet to the westerly line of Tenth avenue; thence southerly along said line 60 feet, to the point or place of beginning.

Said street to be 60 feet wide between the Boulevard and Tenth avenue.

Dated New York, January 8, 1889.

HENRY R. BECKMAN,
Counsel to the Corporation,
No. 2 Tryon Row, New York City.

In the matter of the application of the Board of Street Opening and Improvement of the City of New York, for and on behalf of the Mayor, Aldermen and Commonality of the City of New York, relative to the opening of ONE HUNDRED AND THIRTY-FOURTH STREET, from the Boulevard to Tenth avenue, in the Twelfth Ward of the City of New York.

PURSUANT TO THE STATUTES IN SUCH cases made and provided, notice is hereby given that an application will be made to the Supreme Court of the State of New York, at a Special Term of said Court, to be held at Chambers thereof in the County Court-house, in the City of New York, on Thursday, the 14th day of February, 1889, at the opening of Court on that day, or as soon thereafter as Counsel can be heard thereon, for the appointment of Commissioners of Estimate and Assessment in the above-entitled matter. The nature and extent of the improvement hereby intended is the acquisition of title, in the name and on behalf of the Mayor, Aldermen and Commonality of the City of New York, for the use of the public, to all the lands and premises, with the buildings thereon and the appurtenances thereto belonging, required for the opening of a certain street or avenue known as One Hundred and Thirty-fourth street, from the Boulevard to Tenth avenue, in the Twelfth Ward of the City of New York, being the following described lots, pieces or parcels of land, viz.:

Beginning at a point in the westerly line of Tenth avenue, distant 199 feet 10 inches northerly from the northerly line of One Hundred and Thirty-third street; thence westerly and parallel with said street, distance 775 feet, to the easterly line of the Boulevard; thence northerly along said line 60 feet; thence easterly 775 feet to the westerly line of Tenth avenue; thence southerly along said line 60 feet, to the point or place of beginning.

Said street to be 60 feet wide between the Boulevard and Tenth avenue.

Dated New York, January 8, 1889.

HENRY R. BECKMAN,
Counsel to the Corporation,
No. 2 Tryon Row, New York City.

In the matter of the application of the Board of Street Opening and Improvement of the City of New York, for and on behalf of the Mayor, Aldermen and Commonality of the City of New York, relative to the opening of ONE HUNDRED AND THIRTY-FOURTH STREET, from the Boulevard to Tenth avenue, in the Twelfth Ward of the City of New York.

PURSUANT TO THE STATUTES IN SUCH cases made and provided, notice is hereby given that an application will be made to the Supreme Court of the State of New York, at a Special Term of said Court, to be held at Chambers thereof in the County Court-house, in the City of New York, on Thursday, the 14th day of February, 1889, at the opening of Court on that day, or as soon thereafter as Counsel can be heard thereon, for the appointment of Commissioners of Estimate and Assessment in the above-entitled matter. The nature and extent of the improvement hereby intended is the acquisition of title, in the name and on behalf of the Mayor, Aldermen and Commonality of the City of New York, for the use of the public, to all the lands and premises, with the buildings thereon and the appurtenances thereto belonging, required for the opening of a certain street or avenue known as One Hundred and Thirty-fourth street, from the Boulevard to Tenth avenue, in the Twelfth Ward of the City of New York, being the following described lots, pieces or parcels of land, viz.:

Beginning at a point in the westerly line of Tenth avenue, distant 199 feet 10 inches northerly from the northerly line of One Hundred and Thirty-third street; thence westerly and parallel with said street, distance 775 feet, to the easterly line of the Boulevard; thence northerly along said line 60 feet; thence easterly 775 feet to the westerly line of Tenth avenue; thence southerly along said line 60 feet, to the point or place of beginning.

Said street to be 60 feet wide between the Boulevard and Tenth avenue.

Dated New York, January 8, 1889.

HENRY R. BECKMAN,
Counsel to the Corporation,
No. 2 Tryon Row, New York City.

In the matter of the application of the Board of Street Opening and Improvement of the City of New York, for and on behalf of the Mayor, Aldermen and Commonality of the City of New York, relative to the opening of ONE HUNDRED AND THIRTY-FOURTH STREET, from the Boulevard to Tenth avenue, in the Twelfth Ward of the City of New York.

PURSUANT TO THE STATUTES IN SUCH cases made and provided, notice is hereby given that an application will be made to the Supreme Court of the State of New York, at a Special Term of said Court, to be held at Chambers thereof in the County Court-house, in the City of New York, on Thursday, the 14th day of February, 1889, at the opening of Court on that day, or as soon thereafter as Counsel can be heard thereon, for the appointment of Commissioners of Estimate and Assessment in the above-entitled matter. The nature and extent of the improvement hereby intended is the acquisition of title, in the name and on behalf of the Mayor, Aldermen and Commonality of the City of New York, for the use of the public, to all the lands and premises, with the buildings thereon and the appurtenances thereto belonging, required for the opening of a certain street or avenue known as One Hundred and Thirty-fourth street, from the Boulevard to Tenth avenue, in the Twelfth Ward of the City of New York, being the following described lots, pieces or parcels of land, viz.:

Beginning at a point in the westerly line of Tenth avenue, distant 199 feet 10 inches northerly from the northerly line of One Hundred and Thirty-third street; thence westerly and parallel with said street, distance 775 feet, to the easterly line of the Boulevard; thence northerly along said line 60 feet; thence easterly 775 feet to the westerly line of Tenth avenue; thence southerly along said line 60 feet, to the point or place of beginning.

Said street to be 60 feet wide between the Boulevard and Tenth avenue.

Dated New York, January 8, 1889.

HENRY R. BECKMAN,
Counsel to the Corporation,
No. 2 Tryon Row, New York City.

In the matter of the application of the Board of Street Opening and Improvement of the City of New York, for and on behalf of the Mayor, Aldermen and Commonality of the City of New York, relative to the opening of ONE HUNDRED AND THIRTY-FOURTH STREET, from the Boulevard to Tenth avenue, in the Twelfth Ward of the City of New York.

PURSUANT TO THE STATUTES IN SUCH cases made and provided, notice is hereby given that an application will be made to the Supreme Court of the State of New York, at a Special Term of said Court, to be held at Chambers thereof in the County Court-house, in the City of New York, on Thursday, the 14th day of February, 1889, at the opening of Court on that day, or as soon thereafter as Counsel can be heard thereon, for the appointment of Commissioners of Estimate and Assessment in the above-entitled matter. The nature and extent of the improvement hereby intended is the acquisition of title, in the name and on behalf of the Mayor, Aldermen and Commonality of the City of New York, for the use of the public, to all the lands and premises, with the buildings thereon and the appurtenances thereto belonging, required for the opening of a certain street or avenue known as One Hundred and Thirty-fourth street, from the Boulevard to Tenth avenue, in the Twelfth Ward of the City of New York, being the following described lots, pieces or parcels of land, viz.:

Beginning at a point in the westerly line of Tenth avenue, distant 199 feet 10 inches northerly from the northerly line of One Hundred and Thirty-third street; thence westerly and parallel with said street, distance 775 feet, to the easterly line of the Boulevard; thence northerly along said line 60 feet; thence easterly 775 feet to the westerly line of Tenth avenue; thence southerly along said line 60 feet, to the point or place of beginning.

Said street to be 60 feet wide between the Boulevard and Tenth avenue.

Dated New York, January 8, 1889.

HENRY R. BECKMAN,
Counsel to the Corporation,
No. 2 Tryon Row, New York City.

In the matter of the application of the Board of Street Opening and Improvement of the City of New York, for and on behalf of the Mayor, Aldermen and Commonality of the City of New York, relative to the opening of ONE HUNDRED AND THIRTY-FOURTH STREET, from the Boulevard to Tenth avenue, in the Twelfth Ward of the City of New York.

PURSUANT TO THE STATUTES IN SUCH cases made and provided, notice is hereby given that an application will be made to the Supreme Court of the State of New York, at a Special Term of said Court, to be held at Chambers thereof in the County Court-house, in the City of New York, on Thursday, the 14th day of February, 1889, at the opening of Court on that day, or as soon thereafter as Counsel can be heard thereon, for the appointment of Commissioners of Estimate and Assessment in the above-entitled matter. The nature and extent of the improvement hereby intended is the acquisition of title, in the name and on behalf of the Mayor, Aldermen and Commonality of the City of New York, for the use of the public, to all the lands and premises, with the buildings thereon and the appurtenances thereto belonging, required for the opening of a certain street or avenue known as One Hundred and Thirty-fourth street, from the Boulevard to Tenth avenue, in the Twelfth Ward of the City of New York, being the following described lots, pieces or parcels of land, viz.:

Beginning at a point in the westerly line of Tenth avenue, distant 199 feet 10 inches northerly from the northerly line of One Hundred and Thirty-third street; thence westerly and parallel with said street, distance 775 feet, to the easterly line of the Boulevard; thence northerly along said line 60 feet; thence easterly 775 feet to the westerly line of Tenth avenue; thence southerly along said line 60 feet, to the point or place of beginning.

HEALTH DEPARTMENT.

HEALTH DEPARTMENT OF THE CITY OF NEW YORK,
No. 301 MOTT STREET,
NEW YORK, August 2, 1888.

AT A MEETING OF THE BOARD OF HEALTH of the Health Department of the City of New York, held at its office, No. 301 Mott street, August 2, 1888, the following resolution was adopted:

Resolved, That under the power conferred by law upon the Health Department, the following additional section to the Sanitary Code for the security of life and health, be and the same is hereby adopted and declared to form a portion of the Sanitary Code:

Section 219. In every public hospital and dispensary in the City of New York there shall be provided and maintained a suitable room or rooms and place for the temporary isolation of persons infected with contagious disease, who shall immediately be separated from the other persons and other patients at such dispensary or hospital. It shall be the duty of the physician or physicians, of the officers, managers and of every one in charge of a hospital or dispensary, and of every one who has any duty or office in respect to patients in the course of treatment, or persons who apply for treatment or care at a dispensary or hospital, to see that a report is immediately made to the Health Department of the City of New York of every person infected with a contagious disease who comes to their knowledge, and that such person or persons so infected are properly isolated and kept separate from other persons and patients.

[L. S.] JAMES C. BAYLES,
President.

EMMONS CLARK,
Secretary.

HEALTH DEPARTMENT, No. 301 MOTT STREET,
NEW YORK, January 31, 1888.

AT A MEETING OF THE BOARD OF HEALTH of the Health Department of the City of New York, held at its office, No. 301 M

amount of the security required for the completion of the contract, over and above all his debts of every nature, and over and above his liabilities as bail, surety, or otherwise, and that he has offered himself as surety in good faith, with the intention to execute the bond required by law.

No estimate will be considered unless accompanied by either a certified check upon one of the State or National Banks of the City of New York, drawn to the order of the Comptroller, or money, to the amount of five per centum of the amount of the security required for the faithful performance of the contract. Such check or money must not be inclosed in the sealed envelope containing the estimate, but must be handed to the officer or clerk of the Department who has charge of the Estimate-box, and no estimate can be deposited in said box until such check or money has been examined by said officer or clerk and found to be correct. All such deposits, except that of the successful bidder, will be returned to the persons making the same within three days after the contract is awarded. If the successful bidder shall refuse or neglect, within five days after notice that the contract has been awarded to him, to execute the same, the amount of the deposit made by him shall be forfeited to and retained by the City of New York as liquidated damages for such neglect or refusal; but if he shall execute the contract within the time aforesaid, the amount of his deposit will be returned to him.

THE COMMISSIONER OF PUBLIC WORKS RESERVES THE RIGHT TO REJECT ALL BIDS RECEIVED FOR ANY PARTICULAR WORK IF HE DEEMS IT FOR THE BEST INTERESTS OF THE CITY.

Blank forms of bid or estimate, the proper envelopes which to inclose the same, the specifications and agreements, and any further information desired, can be obtained at Room 10, No. 31 Chambers street.

D. LOWBER SMITH,
Commissioner of Public Works.

DEPARTMENT OF PUBLIC WORKS,
COMMISSIONER'S OFFICE,
ROOM 6, NO. 31 CHAMBERS STREET,
NEW YORK, February 4, 1889.

TO CONTRACTORS.

BIDS OR ESTIMATES, INCLOSED IN A sealed envelope, with the title of the work and the name of the bidder indorsed thereon, also the number of the work as in the advertisement, will be received at this office until 12 o'clock m., Tuesday, February 19, 1889, at which place and hour they will be publicly opened by the head of the Department.

No. 1. FOR SEWER IN TENTH AVENUE, west side, between a point about 316 feet north of One Hundred and Seventy-eighth street and a point about 10 feet north of One Hundred and Ninetieth street.

Each estimate must contain the name and place of residence of the person making the same, the names of all persons interested with him therein, and if no other person be so interested, it shall distinctly state that fact. That it is made without any connection with any other person making an estimate for the same work, and is in all respects fair and without collusion or fraud. That no member of the Common Council, head of a Department, Chief of a Bureau, Deputy thereof, or Clerk therein, or other officer of the Corporation, is directly or indirectly interested in the estimate or in the work to which it relates or in the profits thereof.

Each estimate must be verified by the oath, in writing, of the party making the same, that the several matters therein stated are true, and must be accompanied by the consent, in writing, of two householders or freeholders in the City of New York, to the effect that if the contract is awarded to the person making the estimate, they will, upon its being so awarded, become bound as his sureties for its faithful performance; and that if he shall refuse or neglect to execute the same, they will pay to the Corporation any difference between the sum to which he would be entitled upon its completion, and that which the Corporation may be obliged to pay to the person to whom the contract shall be awarded at any subsequent letting; the amount to be calculated upon the estimated amount of the work by which the bids are tested.

The consent last above mentioned must be accompanied by the oath or affirmation, in writing, of each of the persons signing the same, that he is a householder or freeholder in the City of New York, and is worth the amount of the security required for the completion of the contract, over and above all his debts of every nature, and over and above his liabilities as bail, surety, or otherwise, and that he has offered himself as surety in good faith, with the intention to execute the bond required by law.

No estimate will be considered unless accompanied by either a certified check upon one of the State or National banks of the City of New York, drawn to the order of the Comptroller, or money to the amount of five per centum of the amount of the security required for the faithful performance of the contract. Such check or money must not be inclosed in the sealed envelope containing the estimate, but must be handed to the officer or clerk of the Department who has charge of the Estimate-box, and no estimate can be deposited in said box until such check or money has been examined by said officer or clerk and found to be correct. All such deposits, except that of the successful bidder, will be returned to the persons making the same, within three days after the contract is awarded. If the successful bidder shall refuse or neglect, within five days after notice that the contract has been awarded to him, to execute the same, the amount of the deposit made by him shall be forfeited to and retained by the City of New York, as liquidated damages for such neglect or refusal; but if he shall execute the contract within the time aforesaid, the amount of his deposit will be returned to him.

THE COMMISSIONER OF PUBLIC WORKS RESERVES THE RIGHT TO REJECT ALL BIDS RECEIVED FOR ANY PARTICULAR WORK IF HE DEEMS IT FOR THE BEST INTERESTS OF THE CITY.

Blank forms of bid or estimate, the proper envelopes in which to inclose the same, the specifications and agreements, and any further information desired, can be obtained at Room 9, No. 31 Chambers street.

D. LOWBER SMITH,
Commissioner of Public Works.

DEPARTMENT OF PUBLIC WORKS,
COMMISSIONER'S OFFICE,
ROOM 6, NO. 31 CHAMBERS ST.,
NEW YORK, February 4, 1889.

TO CONTRACTORS.

BIDS OR ESTIMATES, INCLOSED IN A sealed envelope, with the title of the work and the name of the bidder indorsed thereon, also the number of the work as in the advertisement, will be received at this office until 12 o'clock m., Tuesday, February 19, 1889, at which place and hour they will be publicly opened by the head of the Department.

No. 1. FOR FURNISHING THE DEPARTMENT OF PUBLIC WORKS WITH FOUR THOUSAND GROSS TONS (2,240 pounds to a ton) OF EGG SIZE LEHIGH AND WILKESBARRE COAL COMPANY'S BEST WILKESBARRE COAL.

No. 2. FOR FURNISHING THE DEPARTMENT OF PUBLIC WORKS WITH THREE THOUSAND SEVEN HUNDRED GROSS TONS (2,240 pounds to a ton) OF BROKEN SIZE LEHIGH AND WILKESBARRE COAL COMPANY'S BEST LEHIGH AND WILKESBARRE COAL AND THIRTY TONS OF ENGLISH CANNEL COAL.

No. 3. FOR FURNISHING, DELIVERING AND LAYING WATER-MAINS IN NINETEENTH STREET, EIGHTH AVENUE AND CENTRAL PARK.

No. 4. FOR FURNISHING AND DELIVERING STOP-COCKS, HYDRANTS, WOODEN HYDRANT BOXES AND CAST-IRON STOP-COCK BOXES.

No. 5. FOR FURNISHING AND DELIVERING ICE TO THE DEPARTMENT OF PUBLIC WORKS AND THE PUBLIC BUILDINGS AND OFFICES IN CARE OF SAID DEPARTMENT, FOR THE YEAR ENDING DECEMBER 31, 1889.

Each estimate must contain the name and place of residence of the person making the same, the names of all persons interested with him therein, and if no other person be so interested it shall distinctly state that fact. That it is made without any connection with any other person making an estimate for the same work, and is in all respects fair and without collusion or fraud. That no member of the Common Council, head of a department, chief of a bureau, deputy thereof, or clerk therein, or other officer of the Corporation, is directly or indirectly interested in the estimate or in the work to which it relates or in the profits thereof.

Each estimate must be verified by the oath, in writing, of the party making the same, that the several matters therein stated are true, and must be accompanied by the consent, in writing, of two householders or freeholders in the City of New York, to the effect that if the contract is awarded to the person making the estimate, they will, upon its being so awarded, become bound as his sureties for its faithful performance; and that if he shall refuse or neglect to execute the same, they will pay to the Corporation any difference between the sum to which he would be entitled upon its completion, and that which the Corporation may be obliged to pay to the person to whom the contract shall be awarded at any subsequent letting; the amount to be calculated upon the estimated amount of the work by which the bids are tested.

The consent last above mentioned must be accompanied by the oath or affirmation, in writing, of each of the persons signing the same, that he is a householder or freeholder in the City of New York, and is worth the amount of the security required for the completion of the contract, over and above all his debts of every nature, and over and above his liabilities as bail, surety, or otherwise, and that he has offered himself as a surety in good faith, with the intention to execute the bond required by law.

No estimate will be considered unless accompanied by either a certified check upon one of the State or National banks of the City of New York, drawn to the order of the Comptroller, or money to the amount of five per centum of the amount of the security required for the faithful performance of the contract. Such check or money must not be inclosed in the sealed envelope containing the estimate, but must be handed to the officer or clerk of the Department who has charge of the Estimate-box, and no estimate can be deposited in said box until such check or money has been examined by said officer or clerk and found to be correct. All such deposits, except that of the successful bidder, will be returned to the persons making the same, within three days after the contract is awarded. If the successful bidder shall refuse or neglect, within five days after notice that the contract has been awarded to him, to execute the same, the amount of the deposit made by him shall be forfeited to and retained by the City of New York, as liquidated damages for such neglect or refusal; but if he shall execute the contract within the time aforesaid, the amount of his deposit will be returned to him.

THE COMMISSIONER OF PUBLIC WORKS RESERVES THE RIGHT TO REJECT ALL BIDS RECEIVED FOR ANY PARTICULAR WORK IF HE DEEMS IT FOR THE BEST INTERESTS OF THE CITY.

Blank forms of bid or estimate, the proper envelopes in which to inclose the same, the specifications and agreements, and any further information desired, can be obtained at Rooms 10 and 15, No. 31 Chambers street.

D. LOWBER SMITH,
Commissioner of Public Works.

REGULATIONS ESTABLISHING A SCALE OF WATER RENTS AND RULES GOVERNING THE USE OF WATER, FOR THE CITY OF NEW YORK, BY ORDER OF JOHN NEWTON, COMMISSIONER OF PUBLIC WORKS.

UNDER CHAPTER 410, LAWS 1882, SECTIONS 350, 351, 352 and 353, and as amended by chapter 559, Laws 1887, as follows:

"The Commissioner of public works shall, from time to time, establish scales of rents for the supplying of water, which rents shall be collected in the manner now provided by law, and which shall be apportioned to different classes of buildings in said city in reference to their dimensions, values, exposure to fires, ordinary uses for dwellings, stores, shops, private stables and other common purposes, number of families or occupants, or consumption of water, as near as may be practicable, and modify, alter, amend and increase such scale from time to time, and extend it to other descriptions of buildings and establishments. All extra charges for water shall be deemed to be included in the regular rents, and shall become a charge and lien upon the buildings upon which they are respectively imposed, and, if not paid, shall be returned as arrears to the clerk of arrears. Such regular rents, including the extra charges above mentioned, shall be collected from the owners or occupants of all such buildings respectively, which shall be situated upon lots adjoining any street or avenue in said city in which the distributing water-pipes are or may be laid, and from which they can be supplied with water. Said rents, including the extra charges aforesaid, shall become a charge and lien upon such houses and lots, respectively, as herein provided, but no charge whatever shall be made against any building in which a water-meter may have been, or shall be placed as provided in this act. In all such cases the charge for water shall be determined only by the quantity of water actually used as shown by said meters. * * * * *

The regular annual rents to be collected by the Department of Public Works shall be as follows, to wit:

FRONT WIDTH.	1 Story.	2 Stories.	3 Stories.	4 Stories.	5 Stories.
16 feet and under.	\$4 00	\$5 00	\$6 00	\$7 00	\$8 00
16 to 18 feet....	5 00	6 00	7 00	8 00	9 00
18 to 20 feet....	6 00	7 00	8 00	9 00	10 00
20 to 22½ feet...	7 00	8 00	9 00	10 00	11 00
22½ to 25 feet...	8 00	9 00	10 00	11 00	12 00
25 to 30 feet....	10 00	11 00	12 00	13 00	14 00
30 to 37½ feet...	12 00	13 00	14 00	15 00	16 00
37½ to 50 feet...	14 00	15 00	16 00	17 00	18 00

The rent of all tenements which shall exceed in width fifty feet shall be the subject of special contract with the Commissioner of Public Works.

The apportionment of the regular rents upon dwelling-houses are on the basis that but one family is to occupy the same, and for each additional family, one dollar per year shall be charged.

Meters will be placed on all houses where waste of water is found, and they will be charged at rates fixed by the Department for all the water passing through them.

The extra and miscellaneous rates shall be as follows, to wit:

BAKERIES.—For the average daily use of flour, for each barrel, three dollars per annum.

BARBER SHOPS shall be charged from five to twenty dollars per annum each in the discretion of the Commissioner of Public Works; an additional charge of five dollars per annum shall be made for each bathtub therein.

BATHING TUBS in private houses, beyond one, shall be charged at three dollars per annum each, and five dollars per annum each in public houses, boarding-houses, and bathing establishments. Combination stationary wash-tubs, having a movable division in the centre and capable of use for bathing, shall be charged the same as bathing tubs.

BUILDING PURPOSES.—For each one thousand bricks laid, or for stone-work—to be measured as brick—ten cents per thousand. For plastering, forty cents per hundred yards.

COWS.—For each and every cow, one dollar per annum.

DINING SALOONS shall be charged an annual rate of from five to twenty dollars, in the discretion of the Commissioner of Public Works.

FISH STANDS (retail) shall be charged five dollars per annum each.

For all stables not metered, the rates shall be as follows:

HORSES, PRIVATE.—For two horses there shall be charged six dollars per annum; and for each additional horse, two dollars.

HORSES, LIVERY.—For each horse up to and not exceeding thirty in number, one dollar and fifty cents each per annum; and for each additional horse, one dollar.

HORSES, OMNIBUS AND CART.—For each horse, one dollar per annum.

HORSE TROUGHS.—For each trough, and for each half barrel or tub on sidewalk or street, twenty dollars per annum; each trough is to be fitted with a proper ball-cock to prevent waste.

HOTELS AND BOARDING HOUSES shall, in addition to the regular rate for private families, be charged for each lodging room, at the discretion of the Commissioner of Public Works.

LAUNDRIES shall be charged from eight to twenty dollars per annum, in the discretion of the Commissioner of Public Works.

LIQUOR AND LAGER BEER SALOONS shall be charged an annual rate of ten dollars each. An additional charge of five dollars per annum shall be made for each tap or wash-box.

PHOTOGRAPH GALLERIES shall be charged an annual rate of from five to twenty dollars, in the discretion of the Commissioner of Public Works.

PRINTING OFFICES, when not metered, shall be charged at such rates as may be determined by the Commissioner of Public Works.

SODA, MINERAL WATER and ROOT BEER FOUNTAINS shall be charged five dollars per annum each.

STEAM ENGINES, where not metered, shall be charged by the horse-power, as follows: For each horse-power up to and not exceeding ten, the sum of ten dollars per annum; for each exceeding ten, and not over fifteen, the sum of seven dollars and fifty cents each and for each horse-power over fifteen, the sum of five dollars.

WATER-CLOSETS AND URINALS.—To each building on a lot one water-closet having sewer connection is allowed without charge; each additional water-closet or urinal will be charged as hereinafter stated. All closets connected in any manner with sewer shall be charged two dollars for each seat per annum, whether in a building or on any other portion of the premises. Urinals shall be charged two dollars per annum each.

WATER-CLOSET RATES.—For hoppers of any form, when water is supplied direct from the Croton supply, through any form of the so-called single or double valves, hopper-cocks, stop-cocks, self-closing cocks, or any valve or cock of any description attached to the closet, each, per year, twenty dollars.

For any pan closet, or any of the forms of valve, plunger, or other water-closet not before mentioned, supplied with water as above described, per year, ten dollars.

For any form of hopper or water-closet, supplied from the ordinary style of cistern filled with ball-cock, and overflow pipe that communicates with the pipe to the water-closet, so that overflow will run into the hopper or water-closet, when ball-cock is defective, or from which an unlimited amount of water can be drawn by holding up the handle, per year, five dollars.

For any form of hopper or water-closet, supplied from any of the forms of waste-preventing cisterns, that are approved by the Engineer of the Croton Aqueduct, which are so constructed that not more than three gallons of water can be drawn at each lift of the handle, or depression of the seat, if such cisterns are provided with an overflow pipe, such overflow pipe must not connect with the water-closet, but be carried like a safe-waste, as provided by the Board of Health regulations, per year, two dollars.

Cistern answering this description can be seen at this Department.

METERS.

Under the provisions of section 352, Consolidated Act 1882, water-meters, of approved pattern, shall be hereafter placed on the pipes supplying all stores, workshops, hotels, manufactories, public edifices, at wharves, ferry-houses, stables, and in all places where water is furnished for business consumption, except private dwellings.

It is provided by section 353, Laws of 1882, that "all expenses of meters, their connections and setting, water rates, and other lawful charges for the supply of Croton water, shall be a lien upon the premises where such water is supplied, as now provided by law." * * *

All manufacturing and other business requiring a large supply of water will be fitted with a meter.

Water measured by meter, ten cents per one hundred cubic feet.

Rate Without Meters.

PER DAY, GALLONS.	PER 100 GALLONS, RATE.	PER ANNUM, AMOUNT.
25	05	\$3 75
50	05	7 50
60	05	9 00
70	05	10 50
80	05	12 00
90	05	13 50
100	05	15 00
150	05	22 50
200	05	30 00
250	04½	33 75
300	04	36 00
350	03½	36 75
400	03½	42 00
500	03½	52 50
600	03½	63 00
700	03½	73 50
800	03½	82 00
900	03½	94 50
1,000	03½	105 00
1,500	03	135 00
2,000	02½	150 00
2,500	02½	180 00
3,000	02½	225 00
4,000	02½	280 00
4,500	02½	303 75
5,000	02½	333 50
6,000	02	360 00
7,000	02	420 00
8,000	02	480 00
9,000	02	540 00
10,000	02	600 00

The rate charged for steam-vessels taking water daily or belonging to daily lines, is one-half cent per ton (Custom House measurement) for each time they take water.

Steamers taking water other than daily, one cent per ton (Custom House measurement).

Water supplied to sailing vessels and put on board, twenty-five cents per hundred gallons.

All matters not hereinbefore embraced are reserved for special contract by and with the Commissioner of Public Works.

HYDRANTS, HOSE, TROUGHS, FOUNTAINS, ETC., ETC.

No owner or tenant will be allowed to supply water to another person or persons.

All persons taking water from the City must keep their own service-pipes, street tap, and all fixtures connected therewith, in good repair, protected from frost, at their own risk and expense, and shall prevent all waste of water.

The use of hose to wash coaches, omnibuses, wagons, railway cars or other vehicles or horses, cannot be permitted.

No horse-troughs or horse-watering fixtures will be permitted in the street or on the sidewalk, except upon a license or permit taken out for that purpose. All licenses or permits must be annually renewed on the first of May. Such fixtures must be kept in good order and the water not allowed to drip or waste by overrunning the sidewalk or street, or to become dangerous in winter by freezing in and about such troughs or fixtures.

No hydrant will be permitted on the sidewalk or in the front area, and any hydrant standing in a yard or alley, attached to any dwelling or building, must not be left running when not in actual use, and if the drip or waste from such hydrant freezes and becomes dangerous in winter, the supply will be shut off in addition to the penalty of five dollars imposed.

Taps at wash-basins, water-closets, baths and urinals must not be left running, under the penalty of five dollars for each offense, which will be strictly enforced.

Fountains or jets in hotels, porter-houses, eating-saloons, confectioneries or other buildings are strictly prohibited.

The use of hose for washing sidewalks, stoops, areas, house-fronts, yards, court-yards, gardens, and about stables, is prohibited. Where premises are provided with wells, special permits will be issued for the use of hose, in order that the police or inspectors of this department may understand that the permission is not for the use of Croton water.

Opening fire-hydrants to fill hand sprinklers or other vessels will not be allowed.

The penalty for a violation of any of the preceding rules and regulations will be five dollars for each offense, and if not paid when imposed will become a lien on the premises in like manner as all other charges for unpaid water rates.

JOHN NEWTON,
Commissioner of Public Works.

DEPARTMENT OF PUBLIC WORKS,
COMMISSIONER'S OFFICE,
NO. 31 CHAMBERS STREET,
NEW YORK, June 21, 1887.

PUBLIC NOTICE AS TO WATER RATES.

PUBLIC NOTICE IS HEREBY GIVEN THAT in compliance with the provisions of chapter 559, Laws of 1887, amending sections 350 and 351 of the New York City Consolidation Act of 1882, passed June 9, 1887, the following changes are made in charging and collecting water rents:

1st. All extra charges for water incurred from and after June 9, 1887, shall be treated, collected and returned in arrears in the same manner as regular rents have heretofore been treated.

2d. In every building where a water meter or meters are now, or shall hereafter be in use, the charge for water by meter measurement shall be the only charge against such building, or such part thereof as is supplied through meter.

3d. The returns of arrears of water rents, including the year 1887, shall be made as heretofore on the confirmation of the tax levy by the Board of Aldermen, and shall include all charges and penalties of every nature.

4th. A penalty of five dollars (\$5) is hereby established, and will be imposed in each and every case where the rules and regulations of the Department prohibiting the use of water through hose, or in any other wasteful manner, are violated, and such penalties will be entered on the books of the Bureau against the respective buildings or property, and, if not collected, be returned in arrears in like manner as other charges for water.

5th. Charges for so-called extra water rents of every nature, imposed or incurred prior to June 9, 1887, will be canceled of record on the books of the Department.

D. LOWBER SMITH,
Deputy and Acting Commissioner of Public Works.

DEPARTMENT OF PUBLIC WORKS,
COMMISSIONER'S OFFICE,
NO. 31 CHAMBERS STREET,
NEW YORK, November 10, 1886.

NOTICE TO CROTON WATER CONSUMERS.

NUMEROUS APPLICATIONS HAVE BEEN made to this Department by citizens claiming reductions or rebates on bills for water supplied through meters, on the alleged ground of leakage caused by defective plumbing and worn-out service pipes, or by willful waste of water by tenants allowing the faucets to be turned on in full force in water-closets, sinks, etc., without the knowledge or consent of the owners of the premises.

The main object of the use of water-meters is to enable this Department to detect and check the useless and unwarrantable waste of an element so valuable and essential to the health and comfort of all the citizens, and this object can only be accomplished by enforcing payment for the water wasted.

Under the law all charges for water supplied through meters are a lien against the respective premises, and the law therefore holds the owner of the premises responsible for the amount of water used or wasted.

Notice is therefore given to all householders that, in all further applications for reduction of water rents, no allowance will be made on account of waste of water occurring through leaks, from defective service pipes or plumbing, or wasteful use of water by tenants or occupants of buildings, though such leakage or waste may have occurred without the knowledge or consent of the owners of the buildings.

House-owners are further notified that whenever their premises become vacant, and are likely to remain vacant, they must notify this Department in writing, and that unless this requirement is complied with no deductions in extra water rents will be allowed for any portion of one year.

JOHN NEWTON,
Commissioner of Public Works.

GRANTS OF LANDS UNDER WATER.

THE OWNERS OF LANDS IN THE CITY OF New York, which were formerly under water, and which were granted by the City of New York, are notified that nearly all of the grants of such lands contain covenants, on the part of the grantees, and their successors and assigns, to maintain and keep in repair the adjacent streets. The condition of many of these streets is such as to make it necessary that they should be repaired and repaved, and that the obligation resting upon the present owners of adjacent lots to do this work should now be enforced. Many of such owners have requested that such covenants be commuted, and wholly released, upon the payment by them of a certain sum per lot.

The matter will shortly be presented to the Commissioners of the Sinking Fund for their consideration, and the adjustment of the basis of commutation, and application for releases should therefore be made at once.

They may be sent to the undersigned.

Dated New York City, August 7, 1888.

JOHN NEWTON,
Commissioner of Public Works.

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THOMAS COSTIGAN,
Supervisor.