

Department of Public Works,

Commissioner's Office,

No. 150 Nassau Street,

New York,

189

Oct. 3, 1896.

George Drake Smith, Esq.,
120 Broadway,

Dear Sir:-

The Mayor has referred to me your letter to him of 29th inst. in reference to buildings, outhouses etc., which remain on Webster Ave, at Woodlawn, though the City acquired title to the Avenue, and all property embraced in its lines, in 1880.

This vexatious and complicated matter was brought to the attention of this Department several months ago, and has given rise to voluminous correspondence. The present status of the case is this: The Comptroller collects rents from the occupants of the buildings, but may cause them to be vacated at any time on thirty days notice to the tenants. So long as he withholds this notice and collects or accepts rents, this Department has no right to remove the buildings.-

The Commissioner of Street Improvements, of the 23, and 24, Wards has made preparation to regulate and grade the avenue at an early day, and in the execution of that work all present incumbrances will be removed. An earlier removal might be made by this Department if deemed necessary if the Comptroller will take steps to have the buildings vacated.

Very respectfully,

(Signed) Howard Payson Wilds,

Deputy Commissioner of Public Works.

Carbon copy transmitted to the Mayor as requested.

Copy for the Mayor's information

Department of Public Works,

Commissioner's Office,

No. 150 Nassau Street,

New York, Oct. 5th 1896. 189

My dear General:

I have your letter in regard to the obstacles which will be in the way of the parade to take place on the 31st inst.

I had a conversation with the Mayor on the subject this morning, and he agrees with me that while everything should be done to keep the route of the parade free from impediments on that day, it would never do to interfere with the scheme laid out some time ago for the Fifth Avenue improvements.

I cannot possibly promise that the Avenue between 31st and 34th Streets will be fit for your use, but I see no reason why the detour could not be made at 30th Street to Madison Avenue, which is free from railway tracks and in excellent condition. At 34th Street you could again move into Fifth Avenue, which would be clear to 42nd Street.

Already the people having shops and residences on Fifth Avenue are complaining of the serious inconvenience to which they have been put, and they will continue to do so until they realize what push and energy will accomplish for them in a few weeks.

I am,

Very truly yours,

Charles H.T. Collis.

Genl. Horace Porter,
Mills Building,
City.

*Department of Public Works,
Commissioner's Office.*

150 Nassau Street,

Copy.

New York, October 6, 1896.

Messrs Goldie and Brown,
509 6th Avenue.

Dear Sirs:

I have received through the Mayor's office your letter of 30th ultimo, complaining of a show-case in front of No 507 6th Avenue.

In reply, I beg to say that the Superintendent of Incumbrances reports that no show-case was found there on the 3rd inst., when our inspector visited the place. The occupant of the store states that his show-case has not been placed on the sidewalk for several days, it having been removed by him upon receipt of a notice from this Department.

Very respectfully,

(Signed) HOWARD PAYSON WILDS,

Deputy Commissioner of Public Works.

Respectfully transmitted to
the Mayor, as requested.

Department of Public Works,

Commissioner's Office.

~~150 Nassau Street,~~

150 Nassau Street,

New York, October 15, 1896.

Copy.

James H. Craft, Esq.,

306 West 36th Street.

Dear Sir:

The Mayor has referred to this Department for attention your letter of 7th inst., complaining of the bad condition of the pavement on 8th Avenue.

In reply, I beg to say that we were obliged to issue a permit to the East River Gas Company to open the pavement and lay pipes there. After the trench was filled the asphalt pavement was properly restored, so that very small annoyance was caused by the opening. It was necessary to leave the trench unpaved for some time to allow the earth to settle, and prevent sinkage after the pavement had been restored.

Very respectfully,

(Signed) HOWARD PAYSON WILDS

Deputy Commissioner of Public Works.

Transmitted to the Mayor for his information, as requested.

V. LOEWER'S

521 TO 533
WEST 41ST STREET.

V. LOEWER'S
GAMBRINUS
BREWERY
COMPANY.

TELEPHONE
50-38TH STREET.

GAMBRINUS BREWERY
CO.

New York, October 20 1896
 Nathaniel P. Fitch
 Comptroller & Offi

Sometime ago I was advised that it is proposed to repave with asphalt 41st between 10th & 11th Ave. Being particularly interested in a part of the repaving of the block between 10th & 11th Ave. I obtained a protest to be signed by every property holder on the street except Mr Campbell, (who is very sick & unable to attend to business) and the Roman Church each of whom has vacant property facing on this block.

The only residence upon this block is the one occupied by myself, the balance of the block is occupied by factories & stables, & used for very heavy trucking by my own Brewery Co. has 19 city-lots & asphalt paving will be a very great detriment & hindrance in doing our Brewery Business - We load our wagons so that when loaded the load is over six tons and our experience is that even with the trap block or present stone pavements in the winter it is necessary for us to sprinkle sand or wash to prevent horse slipping & accident, & this will be greater danger in that regard on asphalt pavement - In receiving freight consisting of malt

V. LOEWER'S

521 TO 533
WEST 41ST STREET

TELEPHONE
50-38TH STREET.

GAMBRINUS BREWERY CO.

New York,

189

Oats, Hay & feed loads of 5 & 6 tons wagon niched being received, and asphalt pavement would make it very difficult for us to handle the loads.

To message or transport heavy loads upon asphalt pavement - after the load is started is very comfortable & easy for horses, but the burden is for those whose factories & similar business face asphalt pavement -

The Deputy Com. of Public Works writes me under date Oct 16/96. that the asphaltting of this street is for the benefit of the wholesalers of this vicinity & for the purpose of opening a route to the 42nd st ferry.

Lack of a route to the 42nd st ferry is necessary why not asphalt 42nd st to the ferry, for even after asphaltting 41st to the 11th ave - it leaves the intervening space on 11th ave & also leaves 42nd st. west of 11th ave - a very long space, without asphalt. Surely the simple way to reach the 42nd st ferry by asphalt road is to asphalt that street -

I am told that 43rd st is to be asphalted, that street is very much more used as a residential street & could be thus cared for to a much less inconvenience to business interests. It does seem to me that the business interests of the city should be cared

V. LOEWER'S

521 TO 533
WEST 41ST. STREET.

V. LOEWER'S
GAMBRINUS
BREWERY
COMPANY.

TELEPHONE
50-38TH. STREET.

GAMBRINUS BREWERY
CO.

New York, _____ 189

for in preference to the interests of pharmacy
speakers on Broadway

In the same letter from the Deplom. Public Works
he refers to the regulating of the sidewalks, as a bene-
ficial reason or argument for asphaltum on
block - but he has forgotten that ^{the sidewalks in} my block ~~were~~
relaid &c - within two years of the property owners
addressed therein, as will be verified by the records
- your office

I wish something can be done to call
for the rescinding the decision to asphalt this block

Yours Very Truly
Valentine Loewer

*Department of Public Works,
Commissioner's Office.*

150 Nassau Street,

New York, **October 28,** *1896*

HON. WILLIAM L. STRONG ,
M a y o r, and
Chairman, Board of Estimate and Apportionment.

Dear Sir:

Referring to the letter of 21st inst. from the Clerk of the Board of Estimate and Apportionment, with a communication addressed to the Comptroller by Mr V. Loewer, protesting against the repaving of 41st Street, between 10th and 11th Avenues, with asphalt, I beg to say that the repaving of this block with asphalt is for the benefit of the residents of that vicinity and for the purpose of opening a route to the 42nd Street Ferry for bicyclists and for other traffic. I am still of the opinion that the public interests would be subserved by asphaltting that block.

Mr Loewer's letter is herewith returned.

Very respectfully,

James D. Wilson
DEPUTY Commissioner of Public Works.

Enclosure.

*Department of Public Works,
Commissioner's Office.*

150 Nassau Street,

New York, October 27, 1896.

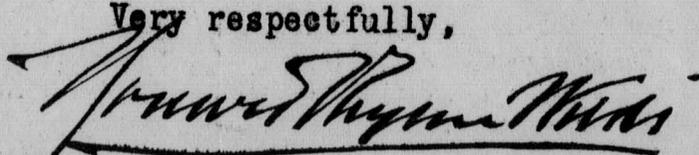
A. Minerly, Esq.,
Secretary, Property Owners' Union,
78 East 96th Street.

Dear Sir:

In response to your letter of 19th inst., I beg to say that you appear to be under a misapprehension as to the preliminaries which must be gone through before this Department can begin a public work.

Although resolutions for paving the east side of Park Avenue, between 97th and 102nd Streets, have been passed by the Board of Aldermen, they have not yet been approved by the Mayor. His approval is necessary before this Department can act. Then proposals must be called for by advertising ten days in THE CITY RECORD. Several days more are required for approval of the sureties and execution of the contract before the contractor can be ordered to begin work. It is possible if not probable that before all these preliminaries, which the law requires to be carried out, can be accomplished, the season will be too far advanced to have the pavement laid this year. Diligent efforts will be made, however, to have the work done this year if possible.

Very respectfully,



Deputy Commissioner of Public Works.

Property Owners' Union of the City of New York,

No. 78 EAST 96th STREET,

New York, October 29th 1896

Hon Wm. L. Strong
Mayor &c

Dear Sir

Enclosure,

I please find a letter from Deputy
Commissioner of Public Works in re-
lation to paving the roadway on
East side of Park Avenue paved
from 97th to 102nd Sts also 98th St
from 54th to Park Avenue. Our
Association has been over a year
trying to have these resolutions
introduced and passed in Board of
Aldermen and now have succeeded
and we ask that you honor your
promise of approval. This Avenue
and Street has never been paved
yet same is now about the center
of the City, much traffic upon
Park Ave but in such weather the
Avenue is impassable in account
of the roadway

We are trying to have this

The Commission do this work
before the rough weather sets in
but enclosed letter will explain
If you have any doubts ~~and~~ think
these improvements are necessary
we would over the ground from
97: to 102 - etc will convince
you -

Hoping you will give us
an assurance that you will
approve of same and furthermore
as Chief Magistrate - judge upon
the Commission the necessity of
this work & am

Yours Truly
A. Murray
Secty 2

THE SICILIAN ASPHALT PAVING COMPANY
TIMES BUILDING.

Copy.

November 6th 1896.

Hon. Charles H.T. Collis,
Commissioner of Public Works, etc.,
New York City.

My dear General Collis;

There was handed to me to-day a clipping from an obscure out of town paper, in which it was intimated, though not openly charged, that you had some sort of an understanding with the Asphalt Companies of this city, which resulted in financial benefit to you. This paragraph in connection with a statement of the New York business of the Sicilian Asphalt Paving Co., which has just been handed me by our auditor gave me much food for reflection. The statement in question shows that ever since you have been Commissioner of Public Works my Company has worked at a loss in the City of New York. The rivalry, I might indeed say the wildcat competition, has been so great that prices have been cut during your regime on an average about one dollar per square yard. You are now getting in the City of New York for less than three dollars per yard the very same pavement with the same guarantee for which the City of London is obliged to pay five dollars per square yard; about the same price being also paid in Paris, London and Berlin. The question is so serious a one with my Company that were it not for the advertisement which we get by reason of doing creditable work here--such work being used as an argument in our favor with smaller cities where the traffic is very light as compared to that of New York, we would be forced to resign this field to our competitors: a result which I fear will in the end follow if bankruptcy does not in the meantime overtake some of our rivals, who have erroneously supposed

2.

that there was a fortune in the asphalt business. This is the serious aspect of the case, but what I wanted to touch upon was the humorous side of it.

You have secured for the City of New York a standard asphalt pavement at 2 dollars per yard less than is now being paid by the Cities of Europe. Under your regime the Asphalt companies have all lost money, and still some political opponent or disappointed office-seeker intimates that you are profiting through us by our discomfiture. Let me congratulate you, my dear Mr. Commissioner, you are the first man in the City of New York against whom it has ^{ever} been charged that he was of large benefit to the City, that he bankrupted contractors who did work under him, and that still through those contractors he received large financial benefits! All hail Collis! You have discovered a new way to make money out of city contracts.

With great admiration for you as a financier, but, arguing from the standpoint of my own pocket, with hearty anathemas upon you as a Commissioner of Public Works, I am,

Sincerely yours,

(signed) Howard Carroll.

Department of Public Works,
Commissioner's Office.

150 Nassau Street,

Copy.

New York, November 9, 1896

James L. Brown, Esq.,
16 East 114th Street.

Dear Sir:

The Mayor has referred to this Department for attention your letter of 27th ultimo, complaining of the defective condition of the sidewalk on the S. E. corner of 114th Street and 5th Avenue.

In reply, I beg to inform you that the owner of the property fronting on the defective sidewalk has been notified to make the necessary repairs.

Very respectfully,

(Signed) HOWARD PAYSON WILDS,

Deputy Commissioner of Public Works.

Respectfully transmitted to
the Mayor, as requested.

*Department of Public Works,
Commissioner's Office.*

Copy.

~~150 Nassau Street,~~
150 Nassau Street,

New York, November 9, 1896.

Messrs Hamilton and Sweetser,
45 Broadway.

Dear Sirs:

Referring to my letter to you of October 29th in reference to alleged violations of chapter 622 of the Laws of 1894, in the performance of work by Messrs Norton and Dalton under orders from this Department for the relaying of pavement on 8th Avenue, from 108th to 113th Street, in that it is claimed that Messrs Norton and Dalton do not pay the prevailing rate of wages to mechanics engaged on the work, I beg to say that as the work in question is being done under orders, and not under a contract by public letting, the provisions of law referred to do not apply to it. I would further state that, in a letter received from Messrs Norton and Dalton, they state that they pay their pavers \$3.50 per day, which, I believe, is equal to the average or prevailing rate in this City and vicinity.

Very respectfully,

(Signed) HOWARD PAYSON WILDS,

Deputy Commissioner of Public Works.

Respectfully transmitted to the
Comptroller for his information.

Department of Public Works,

Commissioner's Office,

No. 150 Nassau Street,

New York, November 9, 1896

Hon. Wm. L. Strong,

M a y o r.

My dear Sir:-

Referring to the letter of Messrs. A. T. Demarest & Co., complaining of the condition of Fifth Avenue at 33rd Street, I desire to say:

That the sewer being constructed at that point is absolutely essential to the health and comfort of the people living on Fifth Avenue between 30th and 34th streets, especially ^{of} with the large number of persons who occupy the Waldorf Hotel, and will occupy the new hotel being erected at the corner of 34th Street. In former times, when work of this kind was being done, very little care was taken to prevent obstruction to traffic upon the streets; but this Department has now inaugurated the system of fencing in such work, so that at least one-half of the roadway may be kept continually open for the public. But for this fence the traffic in the vicinity of Messrs. Demarest & Co. would be so choked that it would have to avail itself of Madison Avenue and Sixth Avenue.

This sewer has to be laid at a depth varying from 14 feet to 17 feet below the surface, in order to provide proper drainage facilities to abutting property; and this has involved the excavation of considerable rock. It had been suggested that this rock could be taken out without

Department of Public Works,

Commissioner's Office,

No. 150 Nassau Street,

New York, _____ 189

the aid of steam drills; but that would have kept Fifth Avenue blocked up for several months. I determined, therefore, to have it done by machinery, and this has involved the necessity of locating a steam boiler in the locality; and in order to insure safety to the travelling public I have required the contractor to carry his exhaust steam from the boiler into the sewer trench, in preference to having it escape on the Avenue, to the annoyance of Messrs. Demarest & Co., and others in the vicinity. This boiler has been carefully housed, so as to avoid frightening horses, and could have been placed in no other position than its present location, unless I had located it on 33rd Street, right in front of Messrs. Demarest & Co.'s side window. Since the sewer trench was opened, I have been careful to keep the thoroughfare along 33rd Street unobstructed, by erecting a substantial bridge over the ditch; and on Saturday night last I extended this bridge across the entire street, so that vehicles going to and from the horse show should have free passageway.

In executing the work imposed upon me on Fifth Avenue, I have endeavored to be careful to inflict the minimum amount of inconvenience upon the property holders, residents, and merchants on the street; and am happy to be able to state to you that I have received but two complaints: one from the proprietor of the Buckingham Hotel, at 50th Street, which upon explanation received from me he withdrew, and the present one

Department of Public Works,

Commissioner's Office,

No. 150 Nassau Street,

New York, _____ 189

from Messrs. A. T. Demarest & Co.

In consideration of the fact that, under your instructions, this Department is endeavoring to make Fifth Avenue the best paved street in the world, I trust Messrs. Demarest & Co. will submit to any slight inconvenience that that great work necessarily causes them.

I am

Very truly yours,

Charles S. T. Collins

Commissioner of Public Works.

Should not this man

THO'S KEENAN, AGT,
461 CANAL STREET, N. Y.

Have something to do
James M. O'Connell

To Genl A. J. Collins.

per copy

Labore. May 22/95-

*Department of Public Works,
Commissioner's Office.*

150 Nassau Street,

New York, Nov. 10th 1896. *189*

My dear Mr. Mayor;

Upon examination of the case of Thomas Keenan, I find that there are sixty veterans with families ahead of him on the list, and sixteen veterans without families also.

This, it seems, will postpone my ability to employ him until next year.

Yours very truly,

Charles A. T. Collins

Hon. Wm. L. Strong,
Mayor's Office,
City.

Department of Public Works,
Commissioner's Office.

150 Nassau Street,

Copy.

New York, November 11, 1896

George Schlenker, Esq.,
66 West 134th Street.

Dear Sir:

The Mayor has referred to this Department for attention your letter of 30th ultimo, with signatures of other residents of 134th Street, between Lenox and 5th Avenues, complaining of the condition of the sidewalks in front of No 62 and 64 West 134th Street.

In reply, I beg to inform you that the owners of the property fronting on the defective sidewalks have been notified to make the necessary repairs.

Very respectfully,

(Signed) HOWARD PAYSON WILDS,

Deputy Commissioner of Public Works.

Respectfully transmitted to the
Mayor for his information, as requested.

Department of Public Works,

Commissioner's Office,

No. 150 Nassau Street

150 Nassau Street.

New York,

November 14, 1896.

Mr. Charles Buek, 264 Columbus Avenue.

Dear Sir:-

Having received your letter of the 12th inst. in effect complaining of the prohibition received by you through an Inspector of this Department against placing an iron grating over openings below the street level in front of your buildings at the corner of 81st Street and Amsterdam Avenue without permit therefor from this Department, I beg to reply thereto that it is the practice of this Department, under my administration, to recognize the Laws of the State and the Ordinances of the City, and to give them full force and effect, in accordance with their plain meaning and intent, and the interests to be protected thereby. The abuses of power and omissions of duty under former administrations are not recognized as precedents justifying any continuance of a misinterpretation or non-enforcement of any law or ordinance, for any time whatsoever. Gratings or perforated platforms are coverings, within the meaning and intent of the ordinance declaring that "every description of opening below the surface of the street, in front of any shop, store, house or other building, if covered over, shall be considered and held to be a vault."

The ordinances provide various penalties respecting interference with "any grate or covering to the opening or aperture of any vault", or as to the removal

of "any grate or covering to any vault".

It is also provided that "All grates of vaults shall be made of iron, the bars whereof shall be 3/4 of an inch wide, and 1/2 of an inch thick, and not more than 3/4 of an inch apart", under penalty for any violation.

These terms of the ordinances clearly show that grates of vaults place the openings thereunder below the surface of the street as much within the terms of the ordinances requiring payment for such openings, not more than \$2.00 per foot for each square foot of ground for such vault, as though such vault were covered in any other manner.

The construction of areas is governed by ordinances which regulate their dimensions, and which require that "every area shall be enclosed with a railing, the gates of which shall be so constructed as to open inwardly", under penalty for every violation thereof. When the spaces thus permitted to be appropriated out of any street for area uses are not so enclosed, all rights in reference thereto as areas are waived and abandoned.

There is thus no straining of the meaning of the terms of these ordinances, but merely the enforcement thereof according to their plain and proper intent, in seeing to it that all such spaces authorized under any permit by me given, are paid for to the City; and that the construction of any such vault without permit first issued and payment received therefor, shall be prevented.

There is, in my judgment, no discretion left to me in the matter of requiring payment for the vault space in front of your buildings, whether covered by grating or in any other manner, under the ordinances of the City above referred to; and the price of \$2.00 per square foot

for the superficial area of any vault in front of your premises, is a very reasonable and proper one.

Very respectfully,

(Signed) CHARLES H. T. COLLIS,

Commissioner of Public Works.

Respectfully transmitted
to the Mayor, for his
information.

*Department of Public Works,
Commissioner's Office.*

150 Nassau Street,

New York, November 14, 1896

Hon. Wm. L. Strong,
Mayor of the City of New York.

Dear Sir:-

I have the honor to inform you of the completion of all the work recommended to be done to place the new offices of the Sheriff in the Brown Stone Building in complete order, under the letter to you from Mr. Alderman Olcott; and that the offices are now ready for the Sheriff's occupancy at any time, as I am advised by report received this day from the Superintendent of Repairs and Supplies.

Very respectfully,


Deputy Commissioner of Public Works.

Department of Public Works,

Commissioner's Office.

~~*Santhambal's Street*~~

150 Nassau Street,

New York, November 16, 1896.

HON. WILLIAM L. STRONG,
M a y o r.

Dear Sir:

In obedience to what I consider to be my duty, I have the honor to place before you the following facts in relation to an illegal structure which has been erected under a recent resolution of the Common Council.

On the 11th inst. I received a letter from the Superintendent of Buildings, calling attention to the erection of a structure at the N. W. corner of 99th Street and Columbus Avenue, having a frontage of 30 feet, height 7-1/2 feet, and projecting five feet beyond the building line.

The matter was at once referred to the Superintendent of Incumbrances for investigation and action. I now have before me his report, stating that he found the framework of a huge show window erected against the side of the building, being 30 feet long, 10 feet high, and projecting five feet beyond the house-line. The owner of the building exhibited, as authority for his structure, a resolution adopted by the Board of Aldermen July 14th and approved by you July 21st, 1896, authorizing the placing of a "show window", without giving any dimensions or restrictions as to the size of the structure. A search of the records of this Department shows that the resolution was not referred to this office for report, as has been the custom in respect to all resolutions affect-

ing matters which in some way come within its duties and functions . An adverse report would have been made because such appropriation of a large part of the public sidewalk for private use and benefit is considered clearly beyond the powers conferred by law upon the Common Council. I have no doubt that neither you, when you approved the resolution, nor the Board of Aldermen which passed it, had any idea that a structure of these dimensions would be placed under it.

The Superintendent of Incumbrances has notified the owner to forthwith remove the structure, and will see that the notice is enforced.

Very respectfully,

Charles H. D. Collis

Commissioner of Public Works.

(COPY)

For the information
of the Mayor.

Department of Public Works,

Commissioner's Office,

~~*No. 211 Broadway, New York*~~

150 Nassau St.

New York,

November 18, 1896.

Hon. Seth Low, Commissioner,
30 East 64th St., New York.

My dear Mr. Commissioner:-

Upon receipt of your recent inquiry as to what part of the work of this Department could be advantageously located in borough halls, in the several boroughs into which the City may be divided, as distinguished from its location in a central office, to the advantage of the work of the Department, and to the convenience of the citizens of the borough, I must confess that from my experience in this Department, and knowledge of its work, there did not appear to my mind to be any considerable advantage to accrue from any segregation of the work of the Department when extended over the Greater New York, except as such division thereof might be determined solely by natural geographical boundaries of the districts embraced within the Greater city. And after conference had with the heads of various offices in the Department, I am more than confirmed in my first impression, that the natural divisions of the territory should alone determine the limits of borough administration of any work within the sphere of this Department, all subordinate to one chief officer thereof. The only district division of the work of this Department which it has thus far seemed to me practicable and desirable to make, has been by the location of repair gangs, for repair of water mains and water connections, and of

pavements within certain territory of the City, each gang being under a foreman in direct communication with the head of his Bureau.

A brief survey of the several subdivisions of the work of this Department may be proper:

There are seven Bureaus in this Department, namely:

1. Of Water Purveyor.
2. Of Water Register.
3. Of Chief Engineer of the Croton Aqueduct.
4. Of Lamps and Gas.
5. Of Streets and Roads.
6. Of Repairs and Supplies.
7. Of Incumbrances.

There are also separate offices not attached to any Bureau, namely:

8. Of Engineer in Charge of Sewers.
9. Of Assistant Engineer in charge of surveys and maps for street openings and new streets.

1. The Bureau of Water Purveyor has charge of all work on street improvements, pavements, and repairs thereof, south of the Harlem River, except macadam roadways, and of all openings of pavements within the city lines for vaults or other purposes. Subordinate thereto are

- a. Office of Consulting Engineer in charge of street improvements in respect to grading, flagging, and curbing of sidewalks, and guttering of streets.
- b. Office of General Inspector in charge of all street openings for railroads, gas, electric

light, water service, and sewer connections.

Except as above indicated in respect to the location of repair gangs, there does not appear to me to be any advantage to the city, or to the efficient administration of the work of this Bureau, by any division thereof, or subordination of the same in districts to a general office, as any system of improved pavements should be studied and decided upon with a view to the best advantage to the entire city, whatever its limits may be. The various corporations, railroads, gas, electric light, heat and power, telephone and telegraphic companies, having franchises permitting the opening of streets, should be under the control of one head, so far as relates to authority to open streets, and the supervision and restoration of pavements, without division into subordinate powers in reference thereto, save within the natural boundaries of the different portions of the city; as any such division of authority or duties respecting the same must needs result in differences of opinion, confusion of purpose and of system, large additional expense, and separation and duplication of records and maps, and of the necessary sources of information embraced therein, all of which would tend to defeat good results obtained by direction and control thereof from a single office.

2. The Bureau of Water Register has charge of the collection of the revenue from the Croton water service, the prevention of waste of water, and the compulsory use of water meters, as required by law.

The books of this Bureau are made out, and accounts are kept, according to the sections and block num-

bers of the land map of the City of New York, instead of according to the old ward number system; not yet including, however, the newly annexed district of Westchester. These section and block numbers are those under which records of conveyances, mortgages, and other instruments are now required to be recorded in the office of the Register of the City and County of New York; the use of which was provided for, at large expense, under a law passed several years ago in reference to all records affecting real estate titles. Any borough divisions of the City not co-extensive with the sections of the land map, would cause considerable embarrassment in the keeping of the records of water charges, and payments thereof, and would result in requiring a new system of books. The force employed and expenditure for collecting the rates would be necessarily increased. Each borough would need a cashier, assistant cashier, and entry clerk, while at the present time one set of such employees suffices for the entire city. The force of inspectors of waste and of meters would be necessarily increased.

Water charges are commonly paid but once a year. Bills are procured and payments made by mail or in person. Having a single office for the collection of such water charges for the present city, has never been deemed an inconvenience to the public, and has been, in fact, a matter of large economy of force employed, and of expense therefor; and has enabled the many large estates, and the many individual owners of scattered parcels of property, to settle for water charges thereon at one office, and at the same time. Branch offices, subordinate to one chief of the Bureau, for the collection of water charges, will naturally be required for the

convenience and advantage of the several distinctly divided territories forming the Greater New York, having independent systems of water supply, and of accounts thereof.

3. The Bureau of Chief Engineer of the Croton Aqueduct has charge of all matters pertaining to the City's water supply, the water shed, streams, dams, reservoirs, lakes and ponds tributary thereto, and the suppression of nuisances relating thereto, and the construction, care, maintenance and operation of High Service Pumping Works and other structures, and the conduits for collecting and distributing the water supply, and the preparation of plans, contracts and specifications for all other engineering work the execution of which is devolved upon the Department of Public Works by special law.

Experience shows the necessity of centralizing the control of all engineering work, both as to construction and care and maintenance thereof. The work of this Bureau should not be hampered, as at present, in the laying and maintenance of water mains, by any authority independent of the Commissioner of Public Works, like that of the Commissioner of Street Improvements in the 23rd and 24th Wards, who has control of the pavements and the sewer system in that portion of the City. Any division of responsibility or of forces with reference to the work of this Bureau must result in serious mistakes and confusion of system. The natural sources of water supply for the several portions of the Greater New York, should alone determine the area of subordinate authority under the Commissioner of Public Works.

4. The Bureau of Lamps and Gas has charge of all public lamps, and of the service of gas lighting and electric lighting in the municipal buildings and offices, and in the streets, avenues, roads and public places of the City, under contracts therefor, as to street lighting, made annually by authority of the Gas Commission, as provided by law.

Any division of the work of this Bureau for the Greater New York would seem to me unwise and undesirable.

5. The Bureau of Streets and Roads has charge of all macadam roadways and unpaved streets south of the Harlem River. Branch offices thereof might wisely be established in each of the several distinct portions of new territory of the Greater New York, as naturally divided.

6. The Bureau of Repairs and Supplies has charge of all public buildings owned by the City, including markets, but excepting school houses and station houses, and buildings under the control of Charities and Correction, in respect to the maintenance, care, repair, heating and cleaning thereof, and the furnishing of supplies, furniture and books therefor; and also has charge of the free floating baths in respect to their construction, repair, supplies, superintendence, and operation; and also supervises the construction of all new buildings erected by the City, excepting those above stated. The jurisdiction thereof may wisely be extended over the Greater New York without subdivision of authority or duties in respect thereto.

7. The Bureau of Incumbrances is charged with the duty of removal and prevention of obstructions and encroachments on all streets and sidewalks in the entire territory of the City, and the jurisdiction thereof may properly be extended to the Greater City without subdivision of powers or duties in respect thereto. The work of the present Bureau is conducted from one office, by five inspectors, under a superintendent acting upon all complaints of violation of the laws of the State or ordinances of the City in respect to encroachments on the highway; and provides adequately for all requirements of the nature of the work.

8. The office of Engineer in Charge of Sewers has control of the entire system of sewerage and drainage south of the Harlem River, and the issuance of permits for sewer connections. The sewer system is laid out to correspond with the natural features of the city, and is adapted to the grades of the streets, and discharges at convenient points where such grades lead to the river front. Each outlet drains a certain area, very irregular in shape, and embracing the water shed only as naturally drained through such outlet. Maps, plans, records etc. of all sewer work, have been heretofore, and should hereafter be kept together. Natural subdivisions of territory should alone regulate and control the character and extent of authority and duties of any subordinate offices in respect to the drainage works, all under the control of one responsible head.

9. The office of Assistant Engineer in charge of surveys and maps for street openings and new streets, is charged with the duty of furnishing to the Board of

Street Openings and Improvement, and to the Counsel to the Corporation, and to the Commissioners of Estimate and Assessment, all necessary surveys, maps, descriptions and abstracts of benefit and assessment for opening and closing of streets, and establishment of grades; and the duties of this office might wisely be extended to the entire territory of the Greater City.

A careful survey of the work of this Department leads me to the belief that the most efficient and business-like management thereof in its relations to the enlarged municipality, should be along the lines above indicated.

I remain

Very respectfully,

(Signed) CHARLES H. T. COLLIS,
Commissioner of Public Works .

Department of Public Works,
Commissioner's Office.

No. 34 Chambers Street

150 Nassau Street,

New York, November 21, 1896.

Copy.

M. E. Moore, Esq.,
Bronze and Plate Co.,
540 West 23rd Street.

Dear Sir:

The Mayor has referred to this Department for attention your letter of 17th inst., with reference to the bad condition of 23rd Street, between 10th and 11th Avenues, in consequence of the laying of new rail-tracks and repaving the street.

In reply, I have to state that it is impossible to lay new rail-tracks in 23rd Street and repave the street on the correct grade without causing considerable inconvenience to traffic on the street. The engineer of the Railroad Company has promised to remove the rails which prevent your wagons from getting to and from your factory, and efforts will be made to cause as little inconvenience as possible in laying the new tracks and putting down the new pavement, but the inconvenience which is inseparable from a public improvement of this character will probably continue two or three weeks longer.

Very respectfully,

(Signed) HOWARD PAYSON WILDS,

Deputy Commissioner of Public Works.

Respectfully transmitted to the
Mayor for his information, as requested.

Department of Public Works,

Commissioner's Office,

No. 34 Chambers Street,

New York,

Nov. 27th 1896.

My dear Mr. Mayor;

As you may have observed, I have had a good deal of trouble with the Metropolitan Traction Company in relation to their tracks on First Avenue.

They admit their obligation to make their tracks conform to the grade of the street, and as this Department is asphaltting the entire street, it was necessary that they should relay their tracks, but this concession I obtained from them very reluctantly. They have denied their obligation, however, to repave between the tracks after the tracks had been relaid, and insisted that that was a duty which devolved upon the City.

For some time past they have been storing their granite blocks, which had been removed from the tracks, on the sidewalks, thereby creating a public nuisance.

Yesterday, I gave directions that these blocks should be thrown back into the tracks from whence they came. This work was commenced this morning by Mr. North, and I have just learned from the Traction Company that they are willing to pave if I will desist. I have, therefore, given instructions that as soon as they appear upon the ground and commence work in good faith to relay the pavement, they should be permitted to do so unmolested.

Yours very truly,

Charles D. Collier

Hon. Wm. L. Strong,
Mayor.

34
Department of Public Works,
Water Purveyor's Office,
150 Nassau Street,

New York, Nov. 27, 1896.

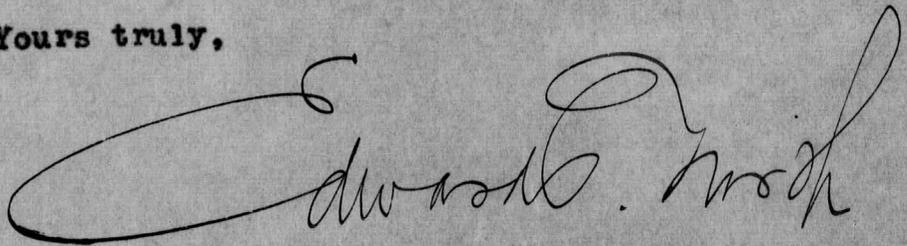
Hon. William L. Strong,

Dear Sir:-

I take the liberty to enclose herewith a couple of copies of a paper which will come up before the Society of Engineers on the 16th of next month.

This question has given me cause for a good deal of thought and venture to hope you will agree with my conclusions.

Yours truly,



Water Purveyor.

AMERICAN SOCIETY OF CIVIL ENGINEERS.

INSTITUTED 1852.

PAPERS.

NOTE.—This Society is not responsible, as a body, for the facts and opinions advanced in any of its publications.

THE INFLUENCE OF RAILS ON STREET PAVEMENTS.

By EDWARD P. NORTH, M. Am. Soc. C. E.

To BE PRESENTED DECEMBER 16TH, 1896.

When the streets of cities were paved with granite or trap blocks, laid on a sand foundation, with a space varying from 1 in. to 2 ins. between the blocks, which was thought necessary to afford a foothold for the horse traffic, the section of the rail selected by surface railroad

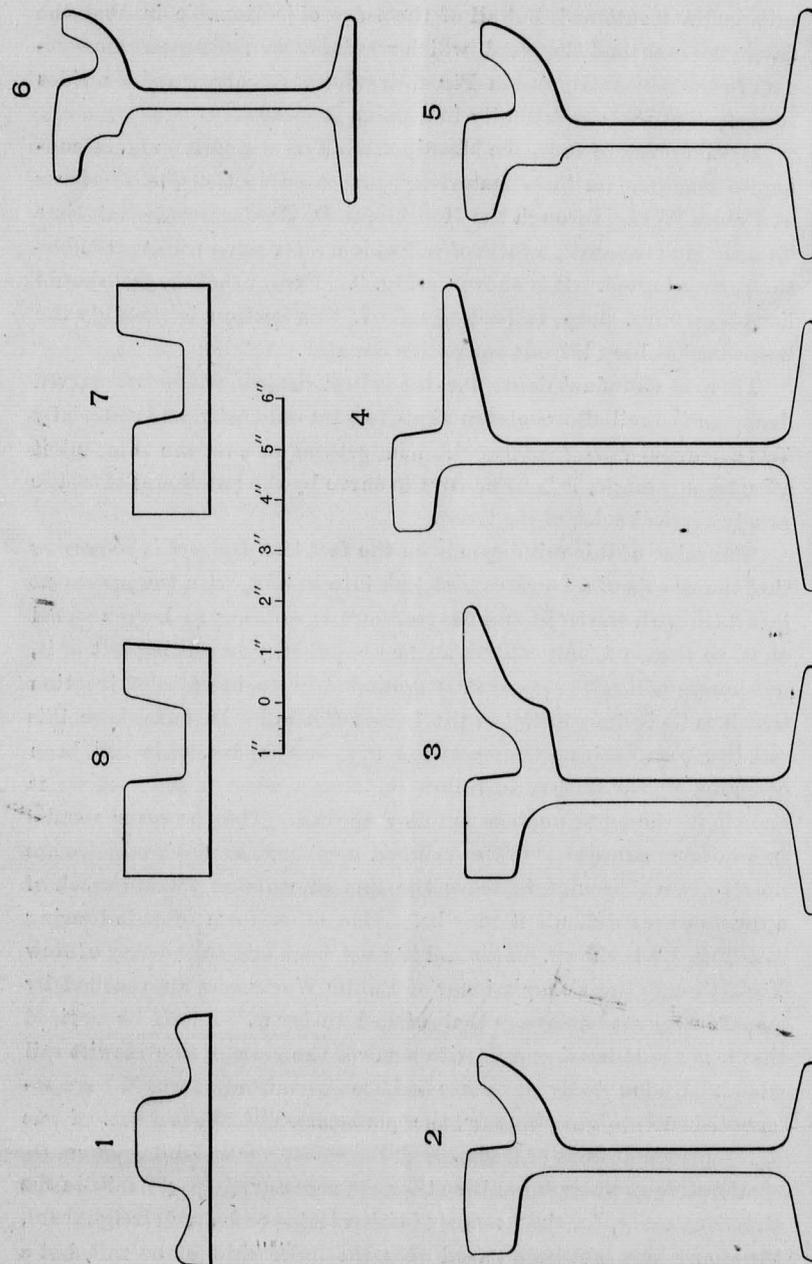
NOTE.—These papers are issued before the date set for presentation and discussion. Correspondence is invited from those who cannot be present at the meeting, and may be sent by mail to the Secretary. The papers with discussion in full will be published in the volumes of *Transactions*.

companies did not add materially to the unevenness of the pavement. As a matter of fact, the first rails used were so much of an improvement on the prevalent street pavements that the traffic early developed a tendency to follow the lines of the rails. As this retarded the railroad traffic through a natural unwillingness on the part of teamsters to pull out of the track, the Hewitt or center-bearing rail (Fig. 1) was invented, with the avowed purpose of preventing vehicular traffic following the lines of the rails. While this rail is probably as obstructive to traffic crossing it at a sharp angle as any street rail ever invented, its very brutality partially defeated its object, as a heavily loaded wagon once on the line of such rails leaves it with extreme reluctance. It is, however, largely employed on the surface roads of the City of New York, and it has required an act of the legislature to prevent a further extension of its use. A modification of this rail (Fig. 9) has also been introduced, and is used as a girder rail on one of the cable lines.

The side-bearing rail shown in Fig. 4 as a girder rail presents a very good wheelway for vehicles once between the rails, and thus far is better than the Hewitt rail; but on account of its nearly vertical sides, it is very hard to pull a loaded wagon out of the track, and in crossing at a small angle with a light vehicle at any speed, the jerk is about as severe as on the center-bearing rail. A rail of this section is also used as a strap rail, being spiked to longitudinal stringers, as is the center-bearing rail generally.

Figs. 7 and 8 show sections that are employed as guard rails on curves and otherwise. They also are strap rails, and when laid on curves, it is almost impossible to make the spikes hold so well that water will not splash out from under them. The only excuse for their use is that bending them costs less than bending a girder rail, and, in general, the use of a strap rail on any highway should be prohibited after a near date in all self-respecting countries.

When permission was given to lay a cable road on Broadway, in New York City, both the previously mentioned forms of rail were so strenuously objected to that the Commissioner of Public Works prescribed a grooved rail, as shown in Fig. 5. This was followed on the Third Avenue line by a rail shown in Fig. 2, and on the Twenty-eighth and Twenty-ninth Street road the section shown in Fig. 6 was adopted. All of these rails are improvements on any of the forms of



rails before mentioned, but all of them are objectionable in that the flange is lower than the tread, which results in an unnecessary unevenness in the pavement, and in Fig. 6 the slot is so narrow and the sides so steep that there is difficulty in keeping it clean.

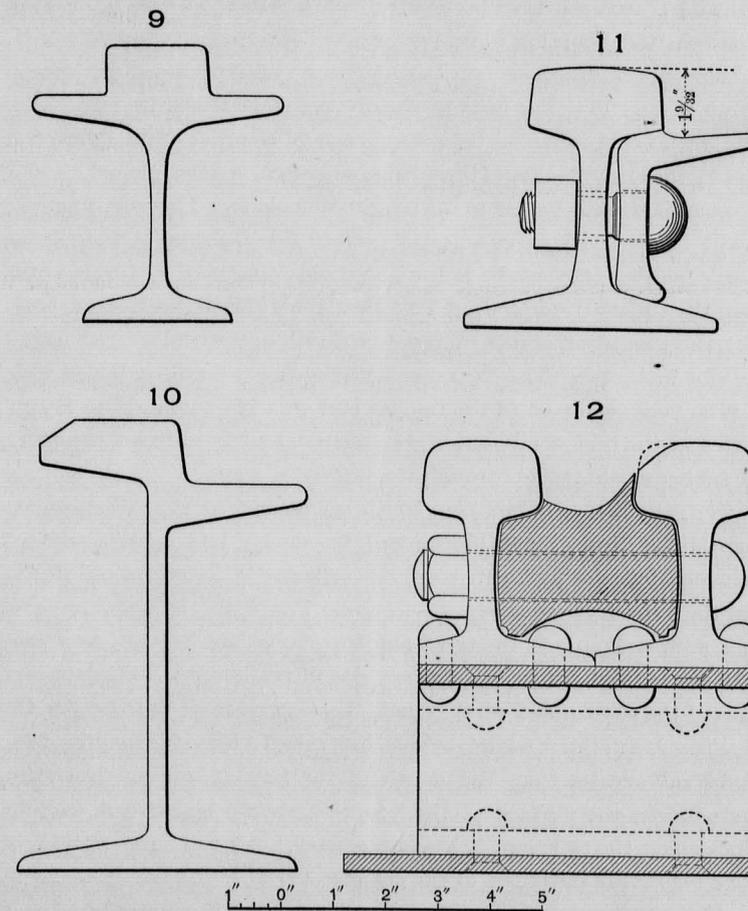
In the spring of 1895, the Metropolitan Traction Company, intending to lengthen its lines materially, presented to the Commissioner of Public Works, through the Hon. John D. Crimmins, at that time its managing director, a form of rail which, after some slight modification, was adopted. It is shown in Fig. 3. Except that the rail should have been 9 ins. deep, instead of only 7, this section is possibly the best that has been introduced in this country.

There is abundant depth for the wheel flanges, while the curved flange on the rail allows obstructions to pass out easily, and materially aids a narrow-tired carriage wheel in getting out, as, the moment it assumes any angle, it is lifted up the curve by the reaction against the nearly vertical sides of the tread.

The value of this rail depends on the fact that the slot is so narrow that the wheels of a truck cannot sink into it, and, with the pavement just flush with the tread and flange, there is nothing to keep a wheel on it, so that, not only will there be no difficulty in pulling out of it, but horses will not be constantly reminded by an increase of traction that it is their duty to follow the line of the rail. In fact where this rail has been laid, no wagon with a tire over 1½ ins. wide has been observed by the author to follow it, though when a light wagon is once in it, the horse inclines to follow the rail. This, however, results in minimum annoyance to the railroad company, as light vehicles are nearly always prompt to leave the line of rails on the approach of a car, however difficult it may be. One other form of side-bearing rail (Fig. 10) is shown. This rail has not been laid in the City of New York, though the Commissioner of Public Works was approached by a surface railroad company that wished to lay it. It will be noticed that it is a side-bearing rail, with some of the vices of the Hewitt rail added. Undoubtedly, if its use had been permitted, it would have accomplished its object, namely, the confiscation of about 15 ft. of one of the principal lines of traffic.

Heretofore, where it has been thought necessary to use T rails in the streets of a city, for the passage of either trains or isolated freight cars, the stones have not been paved near the inner side of the rail, but a

space of 2 or 3 ins. between the rail and the stones is left, which often becomes of profound depth. Walter Katté, M. Am. Soc. C. E., Chief Engineer of the New York Central and Hudson River Railroad, devised the compound section shown in Fig. 11. This combination allows the paving blocks to have a side-bearing near their top, on the



flange side of the rail, and prevents any wheel which parallels the rail dropping indefinitely between the paving blocks and the rail. The clearance for the wheel flanges, however, is unnecessarily great, as is also the depth for their accommodation, and, on the outside of the rail, the paving block can only be brought in contact with the head of

the rail by chipping off a corner, which every one knows is extremely unsatisfactory, as it is almost impossible to keep a paving block in position which has been so treated.

When the Central Railroad Company of New Jersey applied to the Commissioner of Public Works of this city for permission to cross Eleventh and Thirteenth Avenues near Fifteenth Street, with tracks leading from a car ferry landing to its yard west of Eleventh avenue, Mr. J. H. Thompson, its Engineer of Construction, presented a combination shown in Fig. 12. The rails used were the standard 60-lb. rails of the road, with a cast-iron filler between them, and a corner of the guard rail cut off; the lower flanges of these rails, as shown, are also planed off, and the combination is bolted to a wrought-iron chair. This combination, it will be observed, gives a nearly perfect side-bearing to the paving blocks, so that they can be laid without chipping, and it is hoped will keep their place rigorously. The cast-iron filler is so formed that, with the planed-off corner of the guard rail, any wheel can get out of the slot with ease. The clearance between the two rails is left as wide as it is, because a part of the track is laid on a 16° curve. This is submitted as the best combination yet offered by any railroad company for taking steam traffic through the streets of a city.

The satisfactory adjustment of the pavement to the rails presents some difficulties. Stone blocks can be solidly laid against wooden stringers, but the stringers soon rot sufficiently to let the rail down, and the joint then becomes unsatisfactory. With all girder rails of such section that both the tread and top flange are as wide, or wider, than the bottom flange, hard terra-cotta fillers moulded to the concave lines of the section and set in cement mortar give good bearings for the blocks. It is always advantageous, however, to have the height of the girder rail greater than the depth of the paving blocks. In setting these blocks the surface of the concrete should be left low, and the blocks next the rails laid in cement mortar. All ramming should be done before the initial set of the cement.

An asphalt pavement cannot be laid successfully against a wooden stringer; in such cases tothing blocks are a necessity. With girder rails the noise from tothing blocks may be obviated by their omission. The first cost is less, but the maintenance account will be greater, as the rails so absorb and hold the heat during hot summer days that the asphalt next to them is kept soft for some time after sundown, and if the

traffic follows the rails, a crease is formed that requires repairs, which the railways are generally slow to make. When granite tothing is laid, it is better to lay alternating blocks of 6 and 12-in. lengths at right angles to the rail. Eight-inch headers and stretchers are sometimes laid, but they are not economical, except on streets of very light traffic.

In place of granite or brick tothing a steel plate about $\frac{3}{8}$ in. thick and 3 ft. wide, punched with staggered holes, has been offered. As the arrangement was patented, its specification in any contract with the city was prohibited by law. A small piece of this plate was laid in Chambers Street, where it was very satisfactory, preventing the formation of any rut.

While the section of rail adopted for most of the surface roads is obstructive to the rights and interests of the public, the style in which the space between the rails and between the tracks is maintained is often intentionally made much more obstructive. The laws of the State of New York,* make it obligatory on all surface roads to pave and keep in repair the space between the rails and tracks and 2 ft. outside of the same, but it provides no adequate penalty for non-compliance with the law. The only recourse known in the City of New York is to pave the space and charge it to the railway company, or to leave the area to the public spirit of the corporations. Eighth Avenue from Thirteenth to Fifty-ninth Street shows the result of one course; the other method has resulted in hills aggregating decidedly over \$700 000 accumulating against the surface railways on Manhattan Island from 1889 to 1895, both years inclusive.

What may be termed the Eighth Avenue method has resulted in a pavement between the rails that is seldom used by even the most stolid truckman, while the space between the tracks defies traffic of all kinds. That company has in effect sequestered a strip on Eighth Avenue over 2 miles long and about 17 ft. wide, with no other warrant than a right of way for its cars. The injury to the property on that avenue and the increased cost of transportation in the city is so great that it seems inexplicable that no grand jury should have found a bill against the perpetrators of so malicious an outrage.

On the other hand, the plan of charging the cost of an improved pavement against the company, whose income is augmented by the

* Chapter 565, Section 98, Laws of 1890, as amended by Chapter 676, Laws of 1892.

increased value and greater circulation that follows better pavements, has cost the city on an average over \$100 000 per annum for the past seven years. This money has been taken from the resources of the taxpayers, but it does not follow that it has resulted in a like gain to the corporations which so persistently and successfully defy the laws of this State.

It might not be worth while to occupy the attention of the Society with this question if it was a local one, but both in cities and on country roads the surface railways, whether actuated by horse-power or electricity, devastate the highway, using an easement for a right of way on the roads and streets with a haughty disregard of the rights of others that should not be allowed if they were held in fee. In spite of the low freight rates on railroads and water-courses, this country has been injured, and, to some extent, impoverished, through the high cost of transportation on country roads, consequent upon their generally wretched condition. Concurrently with a general effort to so improve the surface of roads and streets that both transportation and circulation shall be cheaper and pleasanter, the success of these efforts are found to be threatened by the legal inability of local authorities to force owners of surface roads to maintain the area within and about their tracks in fair condition.

Some surface roads have procured charters which do not require them to maintain the pavement in and about their tracks. These claim that no additional burden can be laid on them. If this proposition is correct, it would seem to a layman that no increased rate of taxation could be levied against this property, but there seems nothing to prevent legislation which will allow municipalities and local officers in charge of roads prompt redress against corporations that now occupy the time of our courts in successful efforts to slight a duty imposed by their charters, or by general laws under which they are incorporated. Nor is there anything to prevent such legislation as will require those who are exploiting new roads, which will occupy highways, to pave, maintain and repave a much larger portion of the road or street than at present.

Department of Public Works,

Commissioner's Office,

No. 150 Nassau Street,

New York, Dec. 1st 1896. 189

My dear Mr. Mayor;

If during my absence the subject of the placing of new streets between 165th and 181st Streets West of Kingsbridge ^{Road} should be brought up, I desire to say that I hope the matter will be postponed until I return.

You will remember it was referred to the Committee, consisting of Col. Cruger, Mr. Jeroloman and myself.

I have been over the ground, and had approved the plan as presented, but there seems to be considerable opposition, and I should like that all the parties in interest should have an opportunity to be heard at some meeting of the Board next month.

I am,

Very truly yours,

Charles H. D. Collis

Hon. Wm. L. Strong,
Mayor's Office,
City.



City of New York,
Department of Public Works,
Bureau of Repairs and Supplies,
Superintendent's Office 150 Nassau Street.

New York Dec. 15, 1896. *189*

Hon. Wm. L. Strong,

M A Y O R.

My dear Sir:-

A letter signed, and I presume written by, Mr. B. L. Reuther, 122 Chambers St. addressed to you complaining of my conduct as an Official, while he was present in my Bureau, on business, as he states, I respectfully reply to as follows:

I remember the gentleman and the occasion perfectly, and I can pledge you my word of honor as a man that I said nothing to him that in any manner could be construed as an insult to the most refined and delicate sensibilities of a man; the conversation that passed between Mr. Reuther and myself was as follows: When he came into the Office I was in the act of directing one of the Clerks in the Office in relation to some matters connected with the requisitions of the several Armories. He asked for Mr. Graham, and I replied that I was Mr. Graham; he then said he was in the Cleaning Business, not mentioning any particular kind of Cleaning Business, and I replied to him and told him that the cleaning of the buildings was done by our own help, with the exception of the cleaning of the windows in the Criminal Court Building, which is let out by contract, and the contract extended into the commencement of the new year; he then replied that it was not window cleaning that he was after, but



City of New York,
Department of Public Works,
Bureau of Repairs and Supplies,
Superintendent's Office 150 Nassau Street.

New York, Dec. 15, 1896. *189*

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*City of New York,
Department of Public Works,
Bureau of Repairs and Supplies,
Superintendent's Office 150 Nassau Street.*

New York, Dec. 15, 1896. *189*

carpet cleaning, and I answered him and said that there was no carpet cleaning to be had for the balance of this year, and then he asked me who it was who did the carpet cleaning. I did not distinctly remember at that moment who did the carpet cleaning, so I inquired from Mr. Hedenkamp, Clerk in this Office, what the name of the man was, and he replied "Mr. Yetter." I then told Mr. Reuther the name of the gentleman and he immediately left the Office. If I was on my oath giving evidence on a witness stand I could not make a truer statement in relation to the conversation that passed between Mr. Reuther and myself.

I am surprised that a gentleman who seems to be of such a delicate and refined nature would be guilty of making such a malicious and false statement to you in relation to my conduct. I can bring you every man in my Bureau, who was present at the time, to prove the exact words that I have stated to you.

There are some men who come here on such errands as Mr. Reuther came, who will not receive any statement from me in relation to the matters which they came about, and will continue to talk and keep up an argument, and occupy my time, which is of more importance than the matter itself, and which is of no benefit to them or this Department. I should think that when a plain, honest statement is made to them they would be perfectly satisfied with it and not continue to annoy and interrupt me when I am trying to do the best I possibly can to manage



*City of New York,
Department of Public Works,
Bureau of Repairs and Supplies,
Superintendent's Office 150 Nassau Street.*

New York, Dec. 15, 1896. 189

this Bureau.

The labor to be performed is of such a character that it requires all the time that I can give to it, and I have often remained in this Office as late as six o'clock in the evening to manage the business of this Bureau as it should be managed; I also go out many mornings in the week at 7 A. M. to go around to the several buildings to examine many things which require my personal attention, before arriving at the Office to attend to Office business.

I have never wilfully or intentionally given occasion to any person to write such a letter as has been written by Mr. Reuther.

Respectfully,

John C. Graham

Supt. of Repairs & Supplies

Department of Public Works,

Commissioner's Office

~~150 Nassau Street~~

150 Nassau Street,

New York, December 16, 1896.

Copy.

Mrs Anna M. Leary,

110 West 96th Street.

Dear Madam:

I have received through the Mayor's office your letter of 9th inst., complaining of delay in removing surplus material from the sewer in your street, and stating that the inspector on the work has been under the influence of liquor most of the time.

In reply, I beg to say that steps have been taken by the Engineer in Charge of Sewers to have all surplus material removed at once.

Our inspector claims that your charge against him is made through mistaken identity, and that the contractor's foreman on the work is the man to whom you refer.

In order to remove all doubt in the matter, you are requested to appear at this office to-morrow (Thursday) at 11 a. m., when you will see Mr Doyle (our inspector) and have an opportunity to say whether or not he is the man to whom you refer.

Very respectfully,

(Signed) HOWARD PAYSON WILDS,

Deputy and Acting Commissioner of Public Works.

Respectfully transmitted to
the Mayor for his information, as
requested.

Department of Public Works,

Commissioners Office.

~~At 212 Broadway Street~~

150 Nassau Street,

New York, December 17, 1896.

Copy.

Lambert Quackenbush, Esq.,

78 East 96th Street.

Dear Sir:

Your letter of 4th inst. to the Mayor, complaining of the condition of sidewalks on the block bounded by 98th and 99th Streets, 3rd and Lexington Avenues, was referred to this Department for attention and reply.

The Consulting Engineer reports that the one course of flagging on the 98th and 99th Street sidewalks is in good order. This Department cannot lay additional courses of flagging unless directed by ordinance of the Common Council. As to the filthy condition of the walks, this Department has no jurisdiction, and no authority to provide or enforce a remedy. You should apply to the Health Department in that matter.

In respect to culverts or basins, the Engineer of Sewers has received no complaint that any of them need cleaning. When specific complaints are made, they receive prompt attention.

Portions of the sidewalks on 100th Street, in front of vacant lots, between Park and 3rd Avenues, need repairs. As the owners of the lots cannot be found to be served with notices, certificate and ordinance for the necessary improvement will be transmitted to the Board of Aldermen.

Very respectfully,

(Signed) HOWARD PAYSON WILDS.,

Deputy and Acting Commissioner of Public Works.
Transmitted through the Consulting
Engineer, who will forward certificate
and ordinance.

Respectfully transmitted to the
Mayor for his information, as requested.

*Office of the
Commissioners of Accounts,*

ROOMS 114 AND 115,
Stewart Building,
250 Broadway.

SETH SPRAGUE TERRY,
RODNEY S. DENNIS,
Commissioners.

New York, December 19, 1896.

Hon. William L. Strong,

Mayor.

Sir:-

An examination has been made of the work done under the contract made with Thomas J. McLaughlin February 14, 1895, for regulating and grading Hawthorne Street from Seaman to Amsterdam Avenues. A portion of this work consisted of cutting through a hill composed of earth and rock; under the terms of the contract the contractor was to receive fifty cents a cubic yard for the excavation of earth and the same price for the excavation of rock. The contract provided that the rock should be excavated to a grade two feet below the proposed surface grade of the street. The reasons for excavating the rock for that distance below the surface of the street are, first, to afford a space in which to place the material for the roadbed and its foundation; secondly, to make necessary less excavation in the future when gas, sewer and water mains and connections are laid. The contract also provided that in the filling to be placed in the space of two feet between the sub-grade rock and the grade of the street there should not be any stones measuring more than six inches in any direction. Engineers employed by us took soundings along lines drawn across the street every twenty-five feet where there had been rock excavation; these soundings were taken on both house lines, both curb lines, the centre line of the street and points on each side of the centre line and distant ten feet therefrom. Two hundred and three of such soundings were taken, and out of this number only seventy indicated an excavation to the proper sub-grade. The remaining one hundred and thirty-three soundings indicated rock above sub-grade an average distance of eleven inches. In some instances the rock was not excavated below the surface grade at all.

It is customary for an engineer from the Department of Public Works to examine the work upon contracts for regulating and grading only in a very general way and without any instruments; the Department relying almost entirely upon the City Surveyor and Inspector to see that the work is performed in a proper manner and in accordance with the contract. In each case of regulating and grading the Department employs a City Surveyor, who establishes the grade of the street and who is charged with the duty of seeing that the rock is excavated to the proper sub-grade and that the work in other respects is performed in accordance with the contract. It is the duty of the Inspector to be present continuously at the work and it is the duty of the City Surveyor to show him the grades for the excavation. The surveyor employed in this case was one A. P. Hartmann, and the inspector was one David Simmons, the latter being a cigar maker by trade. Both of these men have been examined under oath by us. The inspector testified that he had been at the work **six** weeks before the City Surveyor ever came near it, and that the latter seldom came there more than once in three or four weeks during the progress of the work. According to the testimony of the City Surveyor himself, there were periods of more than a month at a time when he did not go near the work, although the work was actively progressing and it was his duty to see that it was done in accordance with the specifications. From April 11 to July 5, 1895, according to his own statement, he was at the work only once. The City Surveyor testified that it was not possible that the rock had been so improperly excavated as shown by our soundings. We, therefore, in his presence, had several cross sections of the street exposed to the rock and showed to him that there was a large amount of rock above the proper sub-grade.

The examination shows that the City Surveyor could not have watched this work during its progress or that if he did watch it he did not see that it was properly performed. He made a sworn

statement to the Department of Public Works on the 29th day of October last, in which he swore that "the work has been completed in full in accordance with the established grade and street lines as shown by my plans on file in the Department of Street Improvements, and further certifies that all the rock has been excavated to sub-grade".

The contract for this work provides that "The slopes and excavation of earth will be required to have one of base to one of height, or less when so directed by the Engineer, and no estimate beyond those limits will be made or allowed for." While the use of the word "less" may be ambiguous, yet the uniform construction of the sentence by the City and by contractors is, that, measured from the zenith, the angle of the grade of the slope shall not be greater than forty-five degrees, and if the contractor excavates more the City shall not be charged for such additional amount.

According to the preliminary survey and estimate made by Mr. Hartmann for the purpose of letting the contract, there were twenty-two thousand six hundred and forty-seven (22,647) cubic yards of earth to be excavated; while according to his final estimate there were thirty-six thousand nine hundred and seventy-four (36,974) yards of earth actually excavated; the difference between the two is fourteen thousand three hundred and twenty-seven (14,327) cubic yards, which difference Mr. Hartmann explains by stating that it consists entirely of the earth excavated on the slopes outside of the street lines, which earth had not been included in his preliminary estimate. Upon his own measurements and recomputing them, our engineers find that instead of there being fourteen thousand three hundred and twenty-seven (14,327) cubic yards of earth in the excavations on the slopes there are only ten thousand five hundred and twenty (10,520) yards, allowing a slope of forty-five degrees in accordance with the specifications; in other words, the City Surveyor has certified to three thousand eight hundred and seven yards of

earth more than that for which the contractor is entitled to payment according to the City Surveyor's own measurements. According to measurements taken by our engineers the total amount of earth excavations on the slopes, in accordance with the specifications, is seven thousand and sixty-eight (7,068) cubic yards, or seven thousand two hundred and fifty-nine (7,259) cubic yards less than the amount included in the City Surveyor's certification. For this seven thousand two hundred and fifty-nine (7,259) cubic yards a deduction should be made upon the final payment.

In Mr. Hartmann's certificate of the amount of work performed by the contractor, which certificate was given for the purpose of the final payment, there has been included the whole amount of rock which should have been excavated in accordance with the specifications and not merely that which has actually been excavated.

At our request and pending our investigation the Comptroller has not yet made the final payment to the contractor under this contract. As the amount bid by the contractor for earth per cubic yard was a large price, and as the amount bid for excavating rock was much below the actual cost to the contractor, a deduction from the amount otherwise due him for the rock not excavated, based upon the contract price for the same, would not be a proper allowance to the City. In our opinion the contractor should be made to excavate this rock to the proper sub-grade before receiving his final payment.

Respectfully submitted,

Seht Sprague Terry,

Rodney S. Dennis,

Commissioners.

Department of Public Works

Commissioner's Office,

Copy.

~~No. 17 Chambers Street~~
150 Nassau Street,

New York, December 23, 1896.

B. Herzfelder, Esq.,
10 West 117th Street.

Dear Sir:

I have received through the Mayor's office for attention your letter of 15th inst. to him, complaining of the bad condition of 117th Street, between Lenox and 7th Avenues, the sidewalks on either side of the street being obstructed with building material.

The Superintendent of Incumbrances reports that, upon examination, the sidewalk in front of one of the buildings in course of erection there was found considerably obstructed, and the builder has been notified to remove the material and provide proper facilities for pedestrians. He has complied with the notice, and the Superintendent of Incumbrances will see that the work is carried on in future within the limits of the building material permit.

Very respectfully,

(Signed) HOWARD PAYSON WILDS,

Deputy and Acting Commissioner of Public Works.

Respectfully transmitted to
the Mayor for his information, as
requested.

Department of Public Works,

Commissioner's Office,

No. 150 Nassau Street,

Copy.

New York, December 26, 1896.

RECEIVED
DEPARTMENT OF PUBLIC WORKS
DECEMBER 27 1896

George E. Merry, Esq.,
542 West 14th Street,

Dear Sir:

(218029) HOWARD PAYSON WILDS

The Mayor has referred to this Department for attention your letter of 18th inst. to him, asking that the iron watering trough be removed from in front of your premises, No 542 West 14th Street.

In reply, I beg to advise you to communicate with Alderman Hackett on the subject, and request him to endeavor to have General Order No 943, now pending in the Board of Aldermen, passed. The watering trough will then be removed.

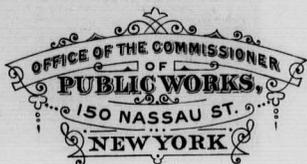
Very respectfully,

(Signed) HOWARD PAYSON WILDS,

Deputy and Acting Commissioner of Public Works.

Transmitted to the
Mayor, for his informa-
tion.

RECEIVED



Dear Mr Mayn

I have just called all hands together who have anything to do with 5th Avenue & I have arranged that the street shall be repaired & open to travel, all clear from 43^d St to 50th St in four days unless there should be severe weather.

Yours truly

Charles D. Collins

Dec 30/96

NOTICE.

Contractors are particularly requested to take notice of any changes which may have been made in the specifications, before putting their bids in the estimate box.

⁽⁷⁾
Department of Public Works.

1896.

TO CONTRACTORS.

PROPOSALS

For Regulating and Paving with Asphalt Pavement, on the Present Stone-block Pavement, the Carriageway of

24th Street from 10th Avenue to the Hudson River

so far as the same is within the limits of grants of land under water.

In pursuance of the following ordinance :

Adopted by the Board of Aldermen,

Approved by the Mayor,

WM. H. TEN EYCK,
Clerk of the Common Council.

SEALED BIDS OR ESTIMATES for the above work, indorsed with the above title, also with the name of the person or persons making the same, and the date of presentation, will be received at the office of the Department of Public Works, until 12 o'clock M. of 189 , at which place and hour the bids will be publicly opened by the head of said Department and read, and the award of the contract, if awarded, will be made to the lowest bidder, with adequate security, as soon thereafter as practicable. 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 the effect that the contract has been so awarded, and that the adequacy and sufficiency of the security offered has been approved by the Comptroller; 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 thereupon the work will be re-advertised and relet, and so on, until the contract be accepted and executed. The work to commence at such time as the Commissioner of Public Works may designate.

N. B.—The prices must be written in the bid, 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. Permission will not be given for the withdrawal of any bid or estimate, and the right is expressly reserved by the Commissioner of Public Works to reject all bids if he shall deem it for the public interests so to do. 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.

Bidders are required to state in their estimates, under oath, their names and places of residence; the names of all persons interested with them therein, and if no other person be so interested, they shall distinctly state the fact; also that it is made without any connection with any other person making any bid or estimate for the same purpose; 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. Where more than one person is interested, it is requisite that the verification be made and subscribed 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 making the estimate they will, upon 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 of the City of New York any difference between the sum to which he would be entitled upon its completion and that which the said Corporation may be obliged to pay to the person to whom the contract shall 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 the contract as stated in the proposals, 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 an intention to execute the bond required by law. The adequacy and sufficiency of the security offered will be subject to the approval of the Comptroller after the award is made and prior to the signing of the contract.

The Surveyor's estimate of the work to be done under the above title, by which the bids will be tested, is the furnishing and laying of

4763 square yards of asphalt pavement on the present pavement.
~~square feet of bridge-stone.~~
~~lineal feet of curb-stone.~~

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 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 estimate, and shall not, at any time after the submission of an estimate, dispute or complain of such statement or estimate of the Surveyor, 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.

(2.) Bidders will be required to complete the entire work to the satisfaction of the Commissioner of Public Works and in substantial accordance with the specifications hereunto annexed. 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 bidder must deposit with the Commissioner of Public Works, at least four (4) days before the time of making his bid, samples of materials he intends to use, as follows :

1st. Specimens of asphaltum, with a certificate stating where the specimen was mined.

2d. A specimen of the asphaltic cement, with a statement of the elements of the composition of the bituminous cements used in the composition of the paving surface.

3d. Specimens of sand intended to be used.

4th. Specimens of pulverized carbonate of lime, granite or quartz intended to be used. And such specimens must be furnished to the Department of Public Works as often as may be required during the progress of the work.

5th. Specimens of the asphaltic rock, with a certificate or other evidence that it is of even fabric and a product of the first quality and from the mines hereinafter designated.

A statement of the location and the capacity (in square yards per day) of the works or factory where the paving material is prepared.

Specimens must be furnished to the Department of Public Works as often as may be required during the progress of the work.

No bid will be received or considered unless the deposits of materials and statements referred to above are made with the Commissioner of Public Works within the time prescribed, nor unless they conform to the requirements of the specifications, and are satisfactory to the Commissioner of Public Works.

Any bid accompanied by a sample of asphaltum which does not come up to the standard required by these specifications will be regarded as informal.

No 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.

Any bidder offering a material not heretofore used in this city, must file in addition to the foregoing requirements, a statement showing the locality where such pavement has been laid, its area, and a certificate from the chief municipal officer, having charge of such work in the city or cities, where such pavement has been laid, showing that the pavement has been in use at least eighteen months, and is satisfactory.

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 will state in writing, and also in figures, the price per square yard for the new pavement; ~~the price per square foot for the new bridge stone~~; also the number of days required to complete the work, which will be tested at the rate of **THREE AND A HALF DOLLARS** per day. It being understood that the time so bid refers to the aggregate time of such Inspectors as may be employed on the work, on days specified as working days according to the terms of the annexed agreement, and not to single consecutive days; and that the allowance and deduction as specified in Covenant 16 of the contract will be exacted for each and every day that the said aggregate time of the Inspectors who may be employed on the work may exceed the time stipulated for the completion of the whole work.

These prices are to cover the furnishing of all the necessary materials and labor; also the expense of excavating, whether rock or otherwise, and the performance of all the work set forth in the specifications and form of agreement hereto annexed.

Bidders are particularly cautioned that in no case will they be permitted to use materials either in quantity or quality different from those specified in the annexed form of agreement—see Specification (4-8); and also that a provision in the contract requires the maintenance of the pavement in good condition for the period of FIVE YEARS from the final completion and acceptance thereof.

The right to reject all bids is reserved, if the Commissioner of Public Works shall deem it for the interests of the City of New York so to do.

Bidders are informed that no deviation from the specifications will be allowed unless a written permission shall have been previously obtained from the Commissioner of Public Works.

The Contractor must notify the Water Purveyor, in writing, forty-eight hours before commencing the work.

Work or materials not specified, and for which a price is not named in the contract, will not be allowed for.

The amount of security required is *Four Thousand* DOLLARS for the faithful performance of the contract, and also for the indemnification of the City for infringements of patents (see Section 21).

Blank forms of estimates, and further information, if required, can be obtained on application at this office.

The form of agreement, including the specifications for the work, is annexed.

CHARLES H. T. COLLIS,
Commissioner of Public Works.

OFFICE DEPARTMENT OF PUBLIC WORKS, }
NEW YORK, 189 . }

No.

FORM OF AGREEMENT,

To be executed in Triplicate,

For Regulating and Paving with Asphalt Pavement, on the Present Stone-block Pavement, the Carriageway of

so far as the same is within the limits of grants of land under water.

This Agreement, made and entered into this _____ day of _____ in the year one thousand eight hundred and ninety-_____, 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, and

Contractor, party of the second part:

Witnesseth, That the said part _____ of the second part ha _____ agreed, and by these presents does hereby for itself, its successors, heirs, executors, administrators and assigns, covenant, promise and agree to and with the said parties of the first part, for the consideration hereinafter mentioned and contained, and under the penalty expressed in a bond bearing even date with these presents and hereunto annexed, and that he _____, the said party of the second part, its successors, heirs, executors, administrators or assigns, shall and will furnish and provide, at his or their own proper cost and expense, all the necessary materials and labor, and in a good, firm and substantial manner, and strictly in accordance with the following specifications, regulate and pave with asphalt pavement, on the present stone-block pavement, the carriageway of

Locality of work.

so far as the same is within the limits of grants of land under water and also lay and relay crosswalks, and set and reset curb-stones and maintain the said work in good condition, to the satisfaction of the Commissioner of Public Works, his successor or successors, for the period of FIVE YEARS from the final completion and acceptance thereof; all the said work to be done in the manner and under the conditions hereinafter specified; and has further agreed that the said Commissioner of Public Works shall be and is hereby authorized to appoint such person or persons as he may deem necessary to properly inspect the materials to be furnished and the work to be done under this agreement, and see that the same correspond with the specifications hereinafter set forth, which,

Inspectors.

with the proposals for estimates hereto prefixed, and the estimates of the Contractor now on file in the Department of Public Works, are to be taken as forming part of this contract.

The party of the second part admits and agrees that the amounts and quantities of materials to be furnished and work to be done, as stated in the proposals for estimates for the said work, are approximate only; that he is satisfied with the foregoing estimate in determining the prices according to which he agrees to do the work required by this contract in accordance therewith, and that he shall not and will not, at any time, 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 quantity of filling that may be required to place the pavement upon the required grade, or the nature or amount of the materials to be furnished or work to be done; and he covenants and agrees that he will complete the entire work to the satisfaction of the Commissioner of Public Works, and in substantial accordance with said specifications, and that he will not ask, demand, sue for or recover for the entire work any extra compensation beyond the amount payable for the several classes of work in this contract enumerated, which shall be actually performed at the prices therefor herein agreed upon and fixed. And he further agrees, that in case a railroad company operating its lines on the street or streets mentioned in this contract should desire to make a contract with him for the paving of the space within and about its tracks, he will contract with them to do the work at a rate not greater than that charged for in this contract.

The said parties hereto also declare that this agreement is made with reference to the plans for the same now on file in the office of the Water Purveyor, which said plans are to be taken as part and parcel of these presents, and are intended to co-operate, and all technical questions as to their true meaning and intent, concerning the execution of the work in accordance therewith, shall be decided by the Commissioner of Public Works, and his decision shall be final.

It is further agreed that no inspection, approval or acceptance of any part of the work herein contracted for or of the materials used therein, or any payment on account thereof, shall prevent the party of the first part from objecting to the acceptance of said work or materials at any time thereafter during the subsistence of this contract.

SPECIFICATIONS

For Laying an Asphalt Pavement, on the Present Stone-block Pavement, in

so far as the same is within the limits of grants of land under water, and also lay and relay crosswalks and set and reset curb-stones where required.

Work and materials must agree with specifications.

1. All the materials furnished, and all the work done, which, in the opinion of the Commissioner of Public Works, shall not be in accordance with these specifications, shall be immediately removed, and other materials furnished, and work done that will, in the opinion of said Commissioner, be in accordance therewith. Before any materials are placed upon the street or avenue, the Commissioner of Public Works shall approve of the quality and finish of sample of the same which shall be furnished at his office.

Inspectors on subdivisions of work.

2. The work under this agreement is to be prosecuted at and from as many different points in such part or parts of the street or avenue on the line of the work as the said Commissioner may, from time to time, determine, and at each of said points Inspectors may be placed on the day designated for the commencement of the work thereat. Whenever any work is in progress at or from one or more points at a time, an Inspector may be appointed by said Commissioner to supervise each subdivision of the same, whether such subdivision be the culling of the bridge-stones, or the excavation for and preparation of the foundation, or the laying of the pavement, or the laying of the bridge-stones, or otherwise, and the Commissioner of Public Works may appoint such Inspectors as he may deem necessary to supervise the preparation of materials; such Inspectors shall at all times have free access to the works and laboratories of the Contractor.

Right to construct sewers, etc., prior to laying of pavement.

3. The right to construct any sewer or sewers, or receiving-basins and culverts, or to build up or adjust any manholes, or to reset or renew any frames and heads for sewer or subway manholes, or for Croton water or gas stop-cocks, or to lay gas or water pipes or to construct necessary appurtenances in connection therewith in said street, or to grant permits for house connections with sewers or with water or gas pipes, or for any other underground or subway construction, or to alter and relay railroad tracks, and lay crosswalks at any time prior to the laying of the new pavement over the line of the same, is expressly reserved by said Commissioner; and said Commissioner of Public Works reserves the right of suspending the work on said pavement on any part of the line of said street or avenue at any time during the construction of the same, for the purposes above stated, without other compensation to the Contractor for such suspension than extending the time for completing the work as much as it may, in the opinion of the said Commissioner, have been delayed by such suspension; and said Contractor shall not interfere with, or place any impediment in the way of any person or persons who may be engaged in the construction of such sewer or sewers, or in making connections therewith, or doing other work above specified, or in the construction of any receiving-basins and culverts, or in setting or resetting any curb or gutter stones on the line of the street or avenue.

Contractor to remove incumbrances.

In case there shall be, at the time stipulated for the commencement of the work, any earth, rubbish, or other incumbrance on the line of the work, the same is to be removed at the expense of the Contractor.

Bridge-stones.

4. **BRIDGE-STONES.**—Where new bridge-stones are required, they are to be furnished in conformity with the following description, to wit:

The new bridge-stones to be of the best quality of granite, free from sap, seams and imperfections. Each stone to be not less than 4 nor more than 8 feet long, except in cases where especially permitted, and 2 feet wide, and of a uniform thickness, which may vary from 6 to 8 inches, and dressed to a face on top not varying in evenness by more than $\frac{1}{4}$ of an inch, and on the bottom bedded with sides square and full, and ends cut to a bevel of 6 inches in 2 feet, and in special cases to such other bevel as shall be directed by the Commissioner of Public Works. The new stones to be in quality and workmanship equal to the pattern at the office of the Department of Public Works, and to be cut so as to lay to a joint not exceeding $\frac{1}{4}$ inch from top to bottom on the ends, and $\frac{1}{2}$ inch on the sides.

The bridge-stones will be carefully inspected after they are brought on the line of the work, and all those which, in quality and dimensions, do not conform strictly to these specifications will be rejected, and must be immediately removed from the line of the work. When required, all old bridge-stones shall be relaid, in accordance with the specifications for laying new bridge-stones, without extra charge therefor.

Heading stone.

Where the new pavement abuts against a stone pavement the Contractor shall put down heading stones 5 inches thick, at least 2 feet long and 1 foot deep, on a foundation of 6 inches of concrete, and those heading stones shall be maintained by the Contractor as if they were a part of the surface covered by asphalt.

Manhole-heads.

5. MANHOLE-HEADS, ETC.—All the frames and heads for sewer or subway manholes and for Croton water or gas stop-cocks, on the line of the work, are to be reset, or new ones set if required, on a level with the new pavement, by the Department of Public Works, the subway or gas company. The sewer manholes, if below the grade, will be built up to the proper height by said Department.

Curb and gutter stones.

6. CURB AND GUTTER.—The curb-stones along the line of the work, the pavement in the intersections that may be retained, and the pavements and bridge-stones adjoining, and also the gutters of the adjoining pavements as far as may be necessary to obtain proper drainage, shall be readjusted and brought to the grade and lines of the proposed pavement, as required, without extra charge therefor. The gutter-stones, which shall become the property of the Contractor, to be taken up and the pavement extended to the curb-stones. Whenever any curb-stones are required the Contractor shall furnish them of stone equal in quality to those required by the Department of Public Works in contracts for new curb-stones, without extra charge therefor.

All old curb-stones on the line of the work that are cracked, broken or otherwise injured are to be re-dressed so as to conform practically in form, size and quality to those described in the above paragraph, without extra charge therefor.

When the Contractor disturbs the flagging for the purpose of resetting curb-stones, he shall restore the flagging in the same state in which he found it. This does not require the Contractor to alter the grade of the flag-stones.

Dressed stone.

All stone of any description, except paving blocks and crushed stone, used in the performance of this contract, which is to be worked, dressed or carved, shall be so worked, dressed or carved within the boundaries of the State.

7. The present pavement must be prepared in the following manner for a foundation:

The surface to be paved must be thoroughly swept with stiff brooms and cleaned until all dirt and fine particles have been removed from the surface, and from the joints to a depth of 2 inches.

Wherever, in the opinion of the Water Purveyor, the present pavement shall be found to be unfit for a proper foundation by reason of grade or otherwise, it shall be taken up and relaid, in accordance with specifications for such and similar work now in use by the Department of Public Works, without extra charge therefor.

The surface must then be brought to a uniform grade and cross-section, to receive the binder course, not to exceed a crown at the ratio of 4 inches on a roadway 30 feet wide, by excavating, and repaving and filling all depressions with a fine bituminous concrete or binder, to be composed of clean, broken stone not exceeding $1\frac{1}{4}$ inches in their largest dimensions, thoroughly screened, and either coal-tar residuum, commonly known as No. 4 paving composition, or the same bitumen used in the body of the pavement.

The stone must be heated by passing through revolving heaters, and thoroughly mixed by machinery with the paving composition in the proportion of one (1) gallon of paving composition to one (1) cubic foot of stone.

This binder must be hauled to the work and spread with hot iron rakes in all holes or inequalities and depressions below the true grade of the pavement, to such thickness that after being thoroughly compacted by tamping and hand-rolling the surface shall have a uniform grade and cross-section, and the thickness of the binder at any point shall be not less than $\frac{3}{4}$ of an inch.

The upper surface shall be exactly parallel with the surface of the pavement to be laid.

Upon this foundation must be laid the wearing surface, or paving proper, the basis of which or paving cement must be pure asphaltum unmixed with any of the products of coal-tar.

The wearing surface must be composed of :

1. Refined asphaltum.
2. Heavy petroleum oil.
3. Fine sand, containing not more than one per centum of hydro-silicate of alumina.
4. Fine powder of carbonate of lime, granite or quartz.
5. The heavy petroleum oil must be freed from all impurities and brought to a specific gravity of from 18 to 22 degrees Beaumé, and a fire-test of 250 degrees Fahrenheit, or if the formula of Contractor requires it, the powdered carbonate of lime may be omitted and the heavy petroleum oil may be replaced by sufficiently fluid natural bitumen.

The asphaltum used must be equal in quality to that mined from the Pitch Lake on the Island of Trinidad, specially refined and brought to a uniform standard of purity and gravity, of a quality to be approved by the Commissioner of Public Works.

From these two hydro-carbons shall be manufactured an asphaltic cement which shall have a fire-test of 250 degrees Fahrenheit, and at a temperature of 60 degrees Fahrenheit shall have a specific gravity of 1.19, said cement to be composed of 100 parts of pure asphalt, and from 15 to 20 parts of heavy petroleum oil.

The asphaltic cement being made in the manner above described, the pavement mixture will be formed of the following materials, and in the proportions stated :

Asphaltic cement.	from 12 to 15
Sand	from 83 to 70
Pulverized carbonate of lime, granite or quartz.	from 5 to 15

The sand and asphaltic cement are to be heated separately to about 300 degrees Fahrenheit. The pulverized carbonate of lime, granite or quartz, while cold, shall be mixed with the hot sand in the required proportions, and then mixed with the asphaltic cement at the required temperature, and in the proper proportion, in a suitable apparatus, which will effect a perfect mixture.

The pavement mixture prepared in the manner thus indicated must be brought to the ground in carts, at a temperature of about 250 degrees Fahrenheit, and if the temperature of the air is less than 50 degrees, iron carts, with heating apparatus, must be used in order to maintain the proper temperature of the

mixture; it shall then be carefully spread by means of hot iron rakes, in such manner as to give a uniform and regular grade, and to such depth that after having received its ultimate compression it will have a thickness of 2 inches, if laid on a binder course, but if laid on concrete it shall have a thickness of $2\frac{1}{2}$ inches. The surface shall then be compressed by hand-rollers, after which a small amount of hydraulic cement shall be swept over it, and it shall then be thoroughly compressed by a steam-roller weighing not less than 250 pounds to the inch run; the rolling to be continued for not less than five hours for every 1,000 yards of surface.

The powdered carbonate of lime must be of such degree of fineness that 5 to 15 per centum, by weight, of the entire mixture for the pavement shall be of an impalpable powder of limestone, and the whole of it shall pass a No. 26 screen. The sand must be of such size that none of it shall pass a No. 80 screen, and the whole of it must pass a No. 10 screen.

The gutters for a width of 12 inches next the curb must be coated with hot pure asphalt and smoothed with hot smoothing-irons in order to saturate the pavement to a depth to be directed by the Water Purveyor, with an excess of asphalt.

8. If rock asphalt be used the materials shall be an amorphous limestone naturally, thoroughly and uniformly impregnated with bitumen: (1) from the Sicilian mines at Ragusa and Ver Wöhle, equal in quality and composition to that mined by the United Limmer and Ver Wöhle Rock Asphalt Company, Limited; (2) from the Swiss mines at Val de Travers, equal in quality and composition to that mined by the Neuchatel Asphalt Company, Limited, or (3) from the French mines at Seyssel, Mons, and Sicilian mines at Ragusa, equal in quality and composition to that mined by the Compagnie Générale des Asphaltes de France, Limited; and it shall be prepared and laid as follows:

(1) The rock shall be finely crushed and pulverized; the powder shall then be passed through a fine sieve. Nothing whatever shall be added to or taken from the powder obtained by grinding the bituminous rock. The powder shall contain 9 to 12 per cent. natural bitumen, 88 to 91 per cent. pure carbonate of lime, and must be free from quartz, sulphates, iron pyrites, or aluminum. (2) This powder shall be heated in a suitable apparatus to 200 or 250 degrees Fahrenheit, and must be brought to the ground at such temperature in carts made for the purpose, and then carefully spread on the binder foundation previously prepared, to such depth that, after having received its ultimate compression, it will have a thickness of 2 inches, but if laid on concrete it shall have a thickness of $2\frac{1}{2}$ inches. (3) It shall be skillfully compressed by heated rammers or rolled until it shall have the required thickness of $2\frac{1}{2}$ inches. (4) The surface to be rendered perfectly even by heated rammers and smoothers, and to be rolled with a steam-roller weighing not less than 250 pounds to the inch run, the rolling to continue for not less than five hours for each 1,000 yards of surface, in the case of Trinidad asphalt; in the case of rock asphalt pavement the ultimate compression may be by heated pilons.

But rock asphalt shall not be used in streets where the grade is over $1\frac{1}{2}$ per cent.

Sanding the pavement.

After the completion of the work, and whenever the Commissioner shall so direct, the surface of the pavement must be sprinkled with clean, sharp sand.

Paving-blocks each side of tracks.

On each side of the rails of the car-tracks, around all manholes and stop-cock boxes, the Contractor shall lay a line of granite or trap paving-blocks, as headers, long and short stones alternating and tothing into pavement, laid on a foundation of 6 inches of concrete, which must extend to the depth of the cross-ties and beneath and around the girders and stringers, on which shall be laid a bed of fresh cement mortar 2 inches in thickness; on the mortar so laid shall be laid the stone blocks, the top surface of which shall conform to the grade of the pavement. The joints between the stone to be filled with paving cement.

The space within the car-tracks shall, whenever required by the Commissioner of Public Works, be paved with granite or trap paving-blocks in accordance with specifications of this Department for such work.

Quality and dimensions of stone blocks.

The stone blocks are to be of a durable, sound and uniform quality, each measuring not less than 8 nor more than 12 inches in length, and not less than $3\frac{1}{2}$ nor more than 4 inches in width, and not less than 7 nor more than 8 inches in depth. All of the stone shall be of the same quality as to hardness, color or grain; no outcrop, soft, brittle or laminated stone will be accepted. The stones from each quarry shall be piled and laid in separate sections of the work, and in no case shall the stones from the different quarries be mixed. The blocks to be split and dressed so as to form, when laid, close end joints and side joints not exceeding 1 inch wide top and bottom, with fair and true surfaces on top, bottom and ends, and are to be in all respects equal to the specimen blocks at the office of the Commissioner of Public Works, and to be laid as may be directed by the Water Purveyor, and the joints filled with paving cement.

To be carefully culled.

The stones will be carefully inspected after they are brought on the line of the work, and all blocks which, in quality and dimensions, do not conform strictly to these specifications, will be rejected, and must be immediately removed from the line of the work. The Contractor will be required to furnish such laborers as may be necessary to aid the Inspector in the examination and culling of the blocks; and in case the Contractor shall neglect or refuse so to do, such laborers as in the opinion of the Commissioner of Public Works may be necessary will be employed by said Commissioner, and the expense thus incurred by him will be deducted and paid out of any money then due or which may thereafter grow due to the said Contractor under this agreement.

Over rail-ties and other places.

Between, in and 1 foot outside of railroad tracks, over vaults, around manhole-frames, and in such other places as the Commissioner of Public Works may deem proper, the Contractor shall use for the pavement granite or trap paving-blocks of such dimensions as the said Commissioner shall direct.

Paving cement to be used in joints of blocks.

PAVING CEMENT TO BE USED IN JOINTS OF BLOCKS.—There shall then be poured into the joints, while the gravel is still hot, boiling paving cement as hereinafter described, heated to a temperature of 300 degrees Fahrenheit, until the joints are full and will take no more and are filled flush with the top of the blocks. Dry, hot gravel of proper size, heated in pans specially provided by the Contractor for that purpose, must then be poured along the joints, filled with paving cement, as above described, and consolidated by tamping with a light rammer or otherwise. Should the gravel in the joints become cold or damp, the pavement must be taken up and relaid, so as to allow the paving cement to be poured while the gravel is hot.

Description of paving cement.

The paving cement to be used in filling the joints between the paving-blocks and between the crosswalk-stones as herein provided shall be composed of 20 parts of refined Trinidad asphalt of a quality to be approved by the Commissioner of Public Works and 3 parts of residuum oil, mixed with 100 parts of coal-tar, which shall be obtained from the direct distillation of coal-tar, and shall be the residuum therefrom, and shall be such as is ordinarily numbered 4 at the manufactory, the proportions to be determined by weight. It shall be delivered on the work in lots at least one week before being used, in order that the necessary analysis and examination may be made by the Water Purveyor; in addition to this the Contractor must furnish the Water Purveyor with the certificate of the manufacturer or refiner that the materials are of the kind specified. The coal-tar oil and asphalt must be heated and mixed, in the proportions named, on the work as needed for immediate use.

Laying crosswalks.

9. LAYING THE CROSSWALKS, ETC.—The crosswalks across or adjoining the new pavement are to be laid, where required, with new bridge-stones, or the present bridge-stones on the line of the work shall be relaid at such points and in such manner as the said Commissioner of Public Works may direct, in which last case they shall be dressed or redressed so as to conform with specifications for new bridge-stones in all respects. All the new bridge-stones, and such of the present bridge-stones as may be retained, are to be well and firmly bedded on a foundation of clean, sharp sand, to be set and tamped in such a manner that they shall admit of no further settlement; they must be true to a line and grade, and laid with joints not exceeding $\frac{1}{4}$ of an inch in width from top to bottom on the ends. The courses to be so laid that the transverse joints will be broken by a lap of at least 1 foot. The pavements in the intersections that may be retained and the pavements adjoining, and also the gutters of the adjoining pavements, as far as in the opinion of the said Commissioner may be necessary, shall be taken up, brought to the grade of the new pavement and relaid in the manner provided for the new work, without extra charge therefor. The Contractor shall, when directed by the Water Purveyor, lay one row of paving-blocks between the courses of bridge-stones, the joints to be filled with gravel and paving cement in the same manner as the joints of the paving-blocks.

Pavements in the intersections.

Whenever it becomes necessary to transfer old bridge-stones from one point to another on the line of the work, for the purposes of relaying, it shall be done by the Contractor without extra charge therefor.

During the prosecution of the work any materials that it may be necessary to place on the sidewalk shall be piled in neat piles not obstructing over one-half the footway, and the Contractors shall keep the unobstructed portion clean by sweeping. When the material is removed the sidewalk shall be immediately swept clean by the Contractors, and when public or local inconvenience is likely to arise from dust the Contractors are to water any piles or surfaces of earth or dirt when and where necessary, or whenever required by the Water Purveyor or Inspectors to do so.

Old materials.

10. OLD MATERIALS.—All old materials which it becomes necessary to remove, excepting the sewer or subway manhole-heads, and the frames and heads to Croton water or gas stop-cocks, and such bridge stones as the Commissioner of Public Works may deem it advisable to save, shall be considered as the property of the Contractor, and shall be immediately removed by him from the line of the work; except also that the gutter bridge-stone now in use shall belong to the owner or occupant of the premises opposite to which it is placed, and shall be removed and deposited upon the sidewalk, without any extra compensation therefor.

Gutter bridge-stones.

Removal of surplus materials, rubbish, etc.

11. CLEARING UP.—All surplus materials, earth, sand, rubbish and stones, except such stone as shall be retained by order of the Water Purveyor, are to be removed from the line of the work, block by block, as rapidly as the work progresses. All material covering the pavement and sidewalks shall be swept into heaps and immediately removed from the line of the work; and unless this be done by the Contractor within twenty-four hours after being notified so to do, by a written notice to be served upon the Contractor either personally or by leaving it at his residence or with any of his agents on the work, to the satisfaction of said Commissioner, the same shall be removed by the said Commissioner of Public Works, and the amount of the expense thereof shall be deducted out of any moneys due or to grow due to the party of the second part under this agreement.

Loss or damage to be sustained by Contractor.

12. It is further agreed that all loss or damage arising out of the nature of the work to be done under this agreement, or from any unforeseen obstructions or difficulties which may be encountered in the prosecution of the same, or from the action of the elements, or from incumbrances on the line of the work, shall be sustained by the said Contractor.

In case any injury is done along the line of the work in consequence of an act or omission on the part of the Contractor or his employees or agents in carrying out any of the provisions or requirements of this contract, the Contractor shall make such repairs as are necessary in consequence thereof, at his own expense and to the satisfaction of the Commissioner of Public Works, and in case of failure on the part of the Contractor to promptly make such repairs, they may be made by the Commissioner of Public Works, and the expense thereof shall be deducted out of any moneys to grow due, or retained from, the party of the second part under this contract.

Work may be suspended.

13. The prosecution of the work shall be suspended for such periods as the Commissioner of Public Works may from time to time determine; no claim or demand will be made by the Contractor for damages by reason of such suspensions in the work, but the period of such suspensions, to be determined in writing by the said Commissioner, will be excluded in computing the time hereinafter limited for the completion of the work. During such suspensions all materials delivered upon, but not placed in the work, shall be neatly piled so as not to obstruct public travel, or shall be removed from the line of the work in the discretion of the said Commissioner, and unless the materials be so removed by the Contractor upon notice from the said Commissioner, the materials will be removed by the said Commissioner, and the expense thereof charged to the Contractor.

"Contractor," etc., to mean.

14. Wherever the word "Contractor," or the words "party of the second part," or a pronoun in place of either of them, is used in this contract, the same shall be considered as referring to and meaning the party or parties, as the case may be, of the second part to this agreement.

Citizenship, etc., of employees.

All mechanics, workmen and laborers employed in the performance of this contract shall receive not less than the prevailing rate of wages in the respective trades or callings in which such mechanics, workmen and laborers are employed in this locality. None but citizens of the United States shall be employed in the performance of this contract.

Repairs.

14a. And it is further agreed that if, at any time during the period of FIVE YEARS from the date of the acceptance by said Commissioner of the whole work under this agreement, the said work, or any part or parts thereof, in the opinion of said Commissioner, require repairs or sanding, as provided for in Section 8, or the surface of the pavement shall have any cracks, bunches, holes or depressions that shall measure more than $\frac{1}{2}$ inch from the under side of a straight edge 4 feet long laid on the surface, and the said Commissioner shall notify the said party of the second part to make the repairs or do the sanding as required, by a written notice to be served on the Contractor either personally or by leaving said notice at his residence or with any of his agents in charge of the work, the said party of the second part shall immediately commence and complete the same to the satisfaction of said Commissioner; and in case of failure or neglect on his part so to do within twenty-four hours from the date of the service of the aforesaid notice, then the said Commissioner of Public Works shall have the right to purchase such materials as he shall deem necessary, and to employ such person or persons as he may deem proper, and to undertake and complete the said repairs or sanding, and to charge the expense thereof to the said party of the second part; and the said party of the second part hereby stipulates and agrees to pay all such expense to which the said parties of the first part may have been put by reason of the neglect of the said party of the second part to make such repairs or do the sanding as aforesaid.

The Contractor shall have the right in the case of ditches to provide against settlement by covering the surface of the cut with broken stones and maintaining the surface for six days, and during extreme winter weather any hole in the pavement may be filled and maintained with broken stone or asphalt mastic.

Contractor to re-store pavement over water, gas and sewer trenches.

The party of the second part further agrees that during said period of five years he will lay and restore the pavement over trenches made for laying water and gas pipes, sewers and for other purposes permitted by the Commissioner of Public Works at the contract price, and when once so laid and restored, maintain the same in the same state of repair as agreed to for the other parts of the pavement. He further agrees not to demand additional or further payment on account of injury or sinking of the pavement so laid and restored.

Measurement.

15. The said party of the second part further agrees that the return of the Surveyor appointed by the Commissioner of Public Works to survey the work shall be the account by which the amount of work done shall be computed.

Work to commence.

16. The said party of the second part hereby further agrees that he will commence the aforesaid work on such day and at such point or points as the Commissioner of Public Works may designate, and progress therewith so as to fully complete the same, in accordance with this agreement, on or before the expiration of

Time of completion.

DAYS next thereafter; and that in the computation of said days the time (aggregated in days and parts of days) during which the work required by this contract has been delayed in consequence of the condition of the weather, or by any act or omission on the part of the parties of the first part (all of which shall be determined by the said Commissioner of Public Works, who shall certify to the same in writing), and also Sundays and holidays on which no work is done, and days on which the prosecution of the whole work is suspended by written order of the said Commissioner, shall be excluded.

But neither an extension of time, for any reason, beyond the date fixed herein for the completion of the work, nor the doing or acceptance of any part of the work called for by this contract, shall be deemed a waiver by the said Commissioner of the right to abrogate this contract for abandonment or delay, in the manner provided for in paragraph 18 of this agreement.

Damages for non-completion.

In case the said party of the second part shall fail to fully and entirely and in conformity to the provisions and conditions of this agreement perform and complete the said work, and each and every part and appurtenance thereof, within the time hereinbefore limited for such performance and completion, or within such further time as in accordance with the provisions of this agreement shall be fixed or allowed for such performance or completion, the said party of the second part shall and will pay to the said parties of the first part the sum which shall accrue and become due for the Inspectors' wages for each and every day the aggregate time of all the Inspectors employed upon said work may exceed the time stipulated for its completion, or such stipulated time as the same may be increased as hereinbefore provided, which said sum is hereby agreed upon, fixed and determined by the parties hereto as the damages which the party of the first part will suffer by reason of such default, and not by way of penalty. And the said parties of the first part shall and may deduct the same out of the moneys which may be due or become due to the said party of the second part under this agreement.

Personal attention.

17. The said party of the second part hereby further agrees that he will give his personal attention constantly to the faithful prosecution of the said work; that he will not sublet the aforesaid work, or any part thereof, without the previous written consent of the Commissioner of Public Works indorsed on this agreement, but will keep the same under his own control; that he will not assign, by power of attorney or otherwise, any of the moneys payable under this agreement, unless by and with the like consent, to be signified in like manner; that no right under this contract, nor to any moneys to become due hereunder, shall be asserted against the Mayor, Aldermen and Commonalty of the City of New York, or any Department, bureau, or officer thereof, by reason of any so-called assign-

ment, in law or equity, of this contract, or any part hereof; that no person other than the party signing this agreement as the party of the second part has now any claim hereunder; that no claim shall be made excepting under this specific clause, or under paragraph 19 of this agreement; and that he will punctually pay the workmen who shall be employed on the aforesaid work in cash current, and not in what is denominated store-pay. If at any time any overseer or workman employed by the Contractor shall be declared by the Water Purveyor to be unfaithful or incompetent, the Contractor, on receiving written notice, shall forthwith dismiss such person, and shall not again employ him on any part of the work.

Contract may be declared annulled for violation, etc.

18. The said party of the second part further agrees that if at any time the Commissioner of Public Works shall be of opinion, and shall so certify in writing, that the said work or any part thereof is unnecessarily delayed, or that the said Contractor is willfully violating any of the conditions or covenants of this contract, or is executing the same in bad faith, or if the said work be not fully completed within the time named in this contract for its completion, he shall have the power to notify the aforesaid Contractor to discontinue all work, or any part thereof under this contract, by a written notice to be served upon the Contractor, either personally or by leaving said notice at his residence or with his agent in charge of the work, and thereupon the said Contractor shall discontinue said work, or such part thereof, and the Commissioner of Public Works shall thereupon have the power to place such and so many persons as he may deem advisable, by contract or otherwise, to work at and complete the work herein described, or such part thereof, and to use such materials as he may find upon the line of said work, and to procure other materials for the completion of the same, and to charge the expense of said labor and materials to the aforesaid Contractor, and the expense so charged shall be deducted and paid by the party of the first part out of such moneys as may be then due, or may at any time thereafter grow due, to the said Contractor under and by virtue of this agreement, or any part thereof; and in case such expense is less than the sum which would have been payable under this contract if the same had been completed by said Contractor, he shall forfeit all claim to the difference; and in case such expense shall exceed the last said sum he shall pay the amount of such excess to the parties of the first part.

Claims for labor, etc.

19. 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 toward the performance and completion of this contract, shall file with the said Department of Public Works, 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 toward 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 money 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 he will furnish said Commissioner 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, at any time within ten days after the completion of the work aforesaid, that any balance for such work or materials is still due and unpaid, have been fully paid or satisfactorily secured.

Amounts claimed retained.

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 any moneys due the said party of the second part under this agreement until the liabilities aforesaid shall be fully discharged or secured, or such notice be withdrawn.

Indemnification of City.

20. And the said party of the second part further agrees that during the performance of said work he will place proper guards upon and around the same for the prevention of accidents, and at night will put up and keep suitable and sufficient lights, and that he will indemnify and save harmless the parties of the first part against and from all suits and actions, of every name and description, brought against them, and all costs and damages to which they may be put for or on account or by reason of any injury or alleged injury to the person or property of another, resulting from negligence or carelessness in the performance of the work, or in guarding the same, or from any improper materials used in its prosecution, or by or on account of any act or omission of the said party of the second part or his agents; and the said party of the second part hereby further agrees that the whole or so much of the moneys due to him under and by virtue of this agreement, as shall or may be considered necessary by the Commissioner of Public Works, shall and may be retained by the said parties of the first part until all such suits or claims for damages as aforesaid shall have been settled, and evidence to that effect furnished to the satisfaction of the said Commissioner.

Infringement of patents.

20a. And the party of the second part further agrees to hold himself responsible for any claims made against the parties of the first part for any infringement of patents, by the use of patented articles in the construction and completion of the work, or any process connected with the work agreed to be performed under the said contract or of any material or materials used upon the said work; and further agrees to save harmless and to indemnify the parties of the first part for all cost, expenses and damages which the said parties of the first part shall be obliged to pay by reason of any infringement of patents used in the construction and completion of the said work.

21. And the said party of the second part hereby agrees to indemnify and save harmless the parties of the first part against and from all suits and actions of every nature and description arising out of the claim or claims of any person or persons claiming to be patentees of any process connected with the work herein agreed to be performed, or of any material or materials used upon said work. And the said party of the second part hereby further agrees to execute, with two sufficient sureties, the bond, in the sum of

DOLLARS, attached to this agreement, for the indemnification of the parties of the first part against and from all such suits and actions as aforesaid.

Prices for work.

22. And the said party of the second part hereby further agrees to receive the following prices as full compensation for furnishing all the materials and performing all the labor which may be required in the prosecution of the whole of the work to be done under this agreement and in all respects performing and completing the same, to wit:

For completed asphalt pavement, per square yard, the sum of.....

For the new bridge-stones, per square foot, the sum of

For the new curb-stones, per lineal foot, the sum of

It being expressly understood that the measurement shall be taken after the laying and setting of the pavement and that the aforesaid prices cover the furnishing of all the different materials and all the labor; the maintaining of said pavement in good order, and sprinkling with clean, sharp sand, as required in Section 8, such portion of said pavement, and as often as the said Commissioner shall direct, for the period of FIVE YEARS, and the performance of all the work mentioned in this specification and agreement.

Surveyor the agent
of Contractor.

A City Surveyor will be employed by the parties of the first part to see that the work is completed in conformity to the profile, and to ascertain and certify the quantity of work done. Said Surveyor, *at the request of the Contractor*, will be directed to designate and fix grades for his guidance during the progress of the work, without charge, provided that the said parties of the first part shall not be liable for any delay or for any errors of said Surveyor in giving such grades, and said Surveyor shall be considered as the agent of the Contractor so far as giving such grade is concerned, and not the agent of the City of New York.

Examinations.

After the completion of the work, should the Water Purveyor require it for his more perfect satisfaction, the Contractor shall make such openings and to such extent through such part or parts of the said work as the Water Purveyor shall direct, and he shall make the same good again, to the satisfaction of the Water Purveyor. Should any work be found defective or improperly done, such defective or improper work shall be taken up and relaid or otherwise remedied, to the satisfaction of the Water Purveyor; and should the Contractor refuse or neglect to correct such defective work when notified to do so, or by a written notice to be served on the Contractor either personally or by leaving it at his residence or with his agent in charge of the work, then the Commissioner of Public Works shall employ the necessary men and materials to do the work, and the expenses thereof shall be deducted from any moneys that may be due the Contractor on account of this contract.

To prevent all disputes and litigation it is further agreed by and between the parties to this contract that the Engineer shall in all cases determine the amount or the quantity of the several kinds of work which are to be paid for under this contract, and he shall determine all questions in relation to said work and the construction thereof, and he shall in all cases decide every question which may arise relative to the execution of this contract on the part of the said Contractor, and his estimate and decision shall be final and conclusive upon said Contractor; and such estimate and decision, in case any question shall arise, shall be a condition precedent to the right of the party of the second part to receive any money under this agreement.

Payments, when
made.

23. And the said party of the second part further agrees that he shall not be entitled to demand or receive payment for any portion of the aforesaid work or materials until the same shall be fully completed in the manner set forth in this agreement, and such completion shall be duly certified by the Surveyor, Inspector and Water Purveyor in charge of the work, and until each and every of the stipulations hereinbefore mentioned are complied with, and the work completed to the satisfaction of the Commissioner of Public Works, and accepted by

him; whereupon the parties of the first part, under Section 4, Chapter 580 of the Laws of 1872, and Chapter 449 of the Laws of 1889, will pay, and hereby bind themselves and their successors to pay, to the said party of the second part, in cash, on or before the expiration of thirty days from the time of the completion of the work and the acceptance of the same by the Commissioner of Public Works, the whole of the moneys accruing to the said party of the second part under this agreement, excepting such sum or sums of money as may be lawfully retained under any of the provisions herein contained for that purpose, or in any law of the State, or under any ordinance of the Common Council passed prior to the date of this agreement and now in force.

Seventy per cent.
payments.

But in case the amount payable under this contract shall be five thousand dollars or over, payments will be made to the said party of the second part, in conformity with and subject to the terms and conditions of Chapter 7 of the Revised Ordinances of 1880, by monthly installments of *seventy per cent.* on the amount of work performed, and also on the quantities of materials furnished and delivered, should the Commissioner of Public Works deem it advisable so to do, in which case, however, the quantity returned shall be such that the amount paid will be fairly due and in accordance with the provisions and stipulations of this agreement; *provided* the amount of work done on each installment shall not be less than fifteen hundred dollars; *and provided*, that the parties of the first part may at all times reserve and retain out of said installments, or any of them, all such sum or sums as by the terms hereof, or of any act of the Legislature of the State of New York, or of any ordinance or resolution of the Common Council of the City of New York, passed prior to the date hereof, they are or may be authorized to reserve or retain; *and provided*, that nothing herein contained be construed to affect the right hereby reserved of the said Commissioner to reject any return or certificate of the Surveyor or Inspector having charge of the work, should such return or certificate be, in the opinion of the Commissioner of Public Works, not in accordance with the facts of the case, or the requirements of this agreement, or be otherwise improperly given, and to reject the whole or any portion of the aforesaid work, should the same or any part thereof not be in accordance with the requirements of this contract; *and provided also*, that where the Contractor, although the lowest bidder in the gross calculation, is to receive unusual or extraordinary prices for the different items, or any of them, of the work, when considered separately, nothing herein contained shall be construed to affect the right of the Commissioner hereby retained to determine the amount that may be due, from time to time, not necessarily by the rates agreed upon in this contract, but by causing an estimate to be made of the value of the work done, taking as a basis of the calculation the whole amount of the money that will have become due, according to the terms of this contract, when the whole work shall be completed.

24. It is further expressly understood and agreed by and between the parties hereto, that the action of the Engineer or Surveyor by which the said Contractor is to be bound and concluded according to the terms of this contract, shall be that evidenced by his final certificate, all prior certificates upon which seventy per cent. payments may be made being merely estimates, and subject to the corrections of such final certificate, which may be made without notice to the Contractor thereof, or of the measurements upon which the same is based.

25. And the said party of the second part hereby further agrees that the Commissioner of Public Works shall pay to the Surveyor the sum of TEN DOLLARS for each certificate he may return on the work done on this agreement; and that the said Commissioner of Public Works shall deduct such amount from any moneys due or to grow due under this agreement.

26. 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 any 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.

In Witness Whereof, The Commissioner of Public Works has hereunto set his hand and seal on behalf of the said parties of the first part, and the said party of the second part has also hereunto set their hand and corporate seal duly attested; and said Commissioner and party hereto of the second part have executed this agreement in triplicate, one part of which is to remain with the said Commissioner, 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.

Signed and sealed in presence of

.....

.....

.....
Commissioner of Public Works.

.....
Contractor.

State of New York, City and County of New York, ss.:

On this day of 189 ,

before me personally came

.....
to me known and known to me to be the Commissioner of Public Works, the person described in and who executed the foregoing instrument, and he acknowledged to me that he executed the same as such Commissioner, for the purposes therein mentioned.

.....
Commissioner of Deeds, New York County.

State of New York, City and County of New York, ss.:

On this day of 189 ,

before me personally came

to me known and known to me to be the President of the

....., and

.....
to me known and known to me to be the Secretary of the

....., who being

by me severally duly sworn, did say, each for himself, as follows: The said

.....
that he was the President of said Company, and the said

..... that he was the Secretary of said Company ;
that he knew the corporate seal of said Company ; that the seal affixed to the
foregoing instrument was such corporate seal ; that it was so affixed by order of
the Board of Directors of said Company, and that by like order he thereto signed
his name and official designation.

.....
Commissioner of Deeds, New York County.

Know all Men by these Presents, THAT WE.....

.....of the City of New York,
are held and firmly bound unto the **Mayor, Aldermen and Commonalty
of the said City**, in the sum of
DOLLARS, lawful money of the United States of America, to be paid to the
said MAYOR, ALDERMEN AND COMMONALTY, or to their certain Attorney,
Successors or Assigns; for which payment, well and truly to be made, we bind
ourselves, our successors and our several and respective Heirs, Executors and
Administrators, jointly and severally, firmly by these presents.

Sealed with our seals. Dated this.....day of
....., one thousand eight hundred and ninety-

Whereas, The.....

.....
by an instrument in writing, under their corporate seal, and duly attested, bearing
even date with these presents, ha contracted with the said Mayor, Aldermen
and Commonalty to furnish all the materials and labor, and in a good, firm and
substantial manner regulate and pave with asphalt pavement, on the present
stone-block pavement, the carriageway of

so far as the same is within the limits of grants of land under water, and lay and
relay crosswalks and set and reset curb-stones where required.

NOW, THEREFORE, The condition of the above obligation is such, that if the said
above bounden.....

.....
or their successors or assigns, shall well and truly, and in a good, sufficient and
workmanlike manner, perform the work mentioned in the aforesaid agreement,
in accordance with the terms and provisions therein stipulated, and maintain
the said work in good condition, to the satisfaction of the Commissioner of
Public Works, his successor or successors, for the period of **FIVE YEARS**
from the final completion and acceptance thereof, and in each and every respect
comply with the conditions and covenants in the aforesaid agreement contained, and
shall indemnify and save harmless the said Mayor, Aldermen and Commonalty of
the City of New York against and from all suits and actions of every name and
description arising out of the claim or claims of any person or persons claiming
to be patentees of any process connected with the work agreed to be performed
under the said contract, or of any material or materials used upon the said work,
then this obligation to be void; otherwise to remain in full force and virtue.

Signed and sealed in presence of

.....
.....
.....
.....

State of New York, City and County of New York, ss.:

On this..... day of..... 189 ,
before me personally came

to me known and known by me to be the President of the, and

....., and
to me known and known to me to be the Secretary of the

.....
who being by me severally duly sworn, did say, each for himself, as follows : The said that he

was the President of said Company, and the said

..... that he was the Secretary of said Company ;
that he knew the corporate seal of said Company ; that the seal affixed to the
foregoing instrument was such corporate seal ; that it was so affixed by order of
the Board of Directors of said Company, and that by like order he thereto signed
his name and official designation.

.....
Commissioner of Deeds, New York County.

State of New York, City and County of New York, ss.:

On this..... day of..... 189 ,
before me personally came

.....
to me known and known to me to be the same persons described in and who
executed the foregoing obligation, and severally acknowledged that they executed
the same.

.....
Commissioner of Deeds, New York County.

State of New York, City and County of New York, ss. :

I, _____, of said City, being
duly sworn, do depose and say, that I am a holder in the City of
New York, and
in said City, and that I am worth the sum of
DOLLARS over and above all my debts and liabilities, including my liabilities
as bail, surety and otherwise, and over and above all my property which is
exempt by law from execution.

Subscribed and sworn to before me }
this day of _____, 189 ,) _____

Commissioner of Deeds, New York County.

State of New York, City and County of New York, ss. :

I, _____, of said City, being
duly sworn, do depose and say, that I am a holder in the City of
New York, and
in said City, and that I am worth the sum of
DOLLARS over and above all my debts and liabilities, including my liabilities
as bail, surety and otherwise, and over and above all my property which is
exempt by law from execution.

Subscribed and sworn to before me }
this day of _____, 189 ,) _____

Commissioner of Deeds, New York County.

No. _____

ASSESSMENT WORK.

Asphalt on Present Pavement.

CONTRACT

FOR

Regulating and Paving with Asphalt Pavement, on the Present Stone-block Pavement, the Carriageway of

38

so far as the same is within the limits of grants of land under water.

Contractor.

Dated 189 .

Assigned to _____

APPROVED AS TO FORM.

Counsel to the Corporation.

EXAMINED AND FOUND CORRECT.

Contract Clerk.

Entered in the Comptroller's Office,

189 .

First Assistant Bookkeeper.