

JOHN H. DUNCAN,
ARCHITECT,
21 WEST 24th STREET,
NEW YORK.
TELEPHONE, 1427 18TH ST.

October 1st, 1897.

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

Dear Sir:-

I herewith submit plans, details, specifications and contracts for the work required to alter the City Hall, New York City, to meet the requirements of the Municipal Council and other Municipal Assemblies and their officers, provided for by the Legislature of 1897, pursuant to Chapter 632, Laws of 1897, and agreeable to the Resolution of the Board of Aldermen of September 21st, 1897.

Steam-heating, Ventilation, Plumbing, Gas-fitting,
and electric wiring, \$ 10,094.

Masonry, Shoring, Protecting old Work, Heat, Light, Concrete Floors. Cut stone, Constructional Iron, Plastering, Fireproof lining storage Vaults \$ 88,550.

Marble, Iron stairs, Ornamental Iron work, Cabinet wood work, bookcases, Library, \$ 33,739.

Carpentry, Painting, Roofing, \$ 17,817.

Decoration, Furniture for Aldermanic Chamber and Members Rooms of both bodies, Carpets for Members Rooms and Library. Gas and Electric Fixtures.
Iron Filing racks for fireproof vaults, \$ 33,583.

The total expenditure including Architect's Commission will require the amount of \$ 192,972.00 The above figures have been

183,783

JOHN H. DUNCAN,
ARCHITECT,
21 WEST 24th STREET,
NEW YORK.
TELEPHONE, 1427 18TH ST.

carefully obtained.

I have the honor to remain,

Yours respectfully,

A handwritten signature in dark ink, appearing to read "John H. Duncan", is written over a horizontal line. The signature is fluid and cursive.

Transmitted through Mr. John C. Graham, Superintendent of Repairs
and Supplies.

*Department of Public Works,
Commissioners Office.*

150 Nassau Street,

New York, October 6, 1897

Hon. William L. Strong,

M a y o r.

Dear Sir:-

I beg to notify you that I have invited contractors to submit bids for the work of making the necessary alterations in the City Hall to accommodate the Municipal Assembly, as per plans and specifications submitted to the Board of Estimate and Apportionment.

Bids will be opened in your office on Monday, October 11th, at twelve o'clock.

Very respectfully,

Charles A. D. Collins

Commissioner of Public Works.

*Department of Public Works,**Commissioner's Office,**No. 150 Nassau Street,*Copy.*New York,* October 7, 189*4.*

Messrs Roux and Co.,
133 5th Avenue.

Dear Sirs:

I have received through the Mayor's office your letter of September 27th, complaining of a decrease of pressure and supply of water at No 133 5th Avenue, in consequence of which the water closets on the parlor floor cannot be used.

In reply, I would say that an examination has been made, showing that the water closets can be supplied with water from a tank on the fourth floor, and that the urinal can be flushed from water rising by natural pressure.

It appears that the tank does not fill at night with present pressure, but there is a hand-pump in the cellar, properly connected, which should be used to fill the tank while the pressure of water continues low; or if the water closets on the second floor were connected with the water-main in the street direct, enough water would be received to flush them, the urinal on that floor being flushed with water direct from the main in the street. The distributing pipe attached to the service-pipe is only one-half inch, which is too small. The service-pipe is also attached to a hand-pump in the cellar, retarding the natural flow of the water.

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,

Copy.

New York, October 15, 1897

Messrs Flandrau and Co.,
372 Broome Street.

Gentlemen:

I have received through the Mayor's office for attention your letter of October 9th, again calling attention to the obstructed condition of Broome Street, and requesting that it be paved with asphalt.

In reply, I beg to say that the Metropolitan Street Railway Company have been notified to largely increase their force of men at work in Broome Street, and to restore the street to the condition in which they found it along the line of their double rail-track.

The President of the Metropolitan Street Railway Company informed our Water Purveyor on the 13th inst. that orders had been given to put on a large force, take up one track, place the other in the centre of the street, and put the street in good condition as soon as possible.

I regret that Broome Street cannot be paved with asphalt this year because there is not enough money in hand.

Very respectfully,

Charles N. D. Collins

Commissioner of Public Works.

Respectfully transmitted to
the Mayor for his information as
requested.

ERNEST M. ROSENBERG, M.E.
138 West 85th Street,
New York.

October 18, 1897.

General Chas. H. T. Collis,
Commissioner,
Department of Public Works,
New York City.

Sir:-

Replying to your inquiry regarding the probability of electrolytic destruction of the water-mains on Amsterdam Ave. as a result of the operation of the electric conduit road on that avenue, I beg to submit the following.

My report, dated March 29, 1897, though dealing specifically with the Lenox Ave. system, contains many statements applicable to the Amsterdam Ave. road. In that report it is stated that "the conduit electric system, as installed and operated on Lenox Ave., is but to a slight degree responsible for conditions tending to the electrolytic destruction of water-pipes". It is also stated that "the current which does flow through the track-system is so small that its effect on the water-system need not be considered". Reference was also made to the existence in the water-pipes of electric currents due to other sources than the Lenox Ave. conduit road and the 135th St. trolley road.

The investigation since made has secured very complete data of the electrical condition of the water pipes on Manhattan Island. Throughout Manhattan Island there is a noticeable flow of electric currents through the pipes. These currents are in part due to the operation of overhead trolley systems outside of New York City and in part due to systems of electric lighting located on Manhattan Island. These electrical conditions have existed for years.

Serious electrolytic destruction of pipes need not be feared on account of such currents which throughout the greater part of the city are so small in amount that their effect may be disregarded.

The important difference between the overhead trolley system and the conduit system is that, whereas, in the former the track system is the path provided for the return current, in the latter there is provided a return conductor as well insulated from the tracks and the ground as the outgoing conductor. In the former, a large percentage of the current seeks a return path by way of the metallic structures imbedded in the earth. On some trolley systems, the current flowing through the water pipes amounts to more than a thousand amperes under normal conditions of operation.

On the Lenox Ave. conduit system, less than eight amperes of current passed through the water pipe under the abnormal condition, caused for the sake of experiment, of connecting the water pipe to one of the bus-bars at the power-house. Under normal conditions of operation, the current flow through the pipes, due to the Lenox Ave. road, must certainly be many times less than eight amperes.

There is practically no current flowing along the tracks of the Lenox Ave. road and therefore were the water pipes even in contact with the yokes of the conduit road, the current flowing through the pipe under normal conditions of operation would not be a serious amount, in fact, may be disregarded.

The presence of "grounds" due to defective conduit- or car-equipment is possible. The making of daily tests to determine the current leakage and the speedy

correction of defects causing leaks, are conditions subject to which the permit to construct the conduit road was granted. Therefore the interests of the city could be absolutely protected by the making of the proper tests to ascertain that the road is kept free from "grounds".

With respect to the Amsterdam Ave. mains, it is my opinion that the amount of electric currents, at present flowing and that have been flowing for some years through the pipes on Amsterdam Ave., will not cause serious, if any, injury to them.

Further, that even under the most unfavorable normal operation of the conduit road on Amsterdam Ave. so little additional current will flow through the pipes that the electrolytic influence of the conduit road on the pipes may be disregarded. This is shown by the tests made on Lenox Ave.

Even if the pipes were in actual contact with the yokes at some point of the road, no appreciable amount of current would flow along the pipe, if the road were being operated as it should be, that is, with the equipment in proper condition with regards to insulation.

Under observance of the conditions of the permit, any abnormal conditions would exist for too short a period to have any serious effect on the mains.

In this connection it is important to repeat that during all the time devoted to the tests in the neighborhood of the conduit roads in operation, no evidence was procured of any flow of current in excess of the currents found throughout the city and it is my opinion that only a small percentage, practically none, of the current flowing through the pipes was due to the conduit road.

-4-

The data on which my conclusions are based,
can readily be verified. The conclusions must follow.

Respectfully yours,

(Signed) Ernest M. Rosenberg, M.E.

*Department of Public Works,**Commissioner's Office,**No. 150 Nassau Street,**New York,* October 18, 1897

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

Dear Sir:

Resolution No 2,245, adopted by the Board of Aldermen October 12th and approved by you on the same date, recites that "permission having been given to the Metropolitan Street Railway Company to lay underground electric trolley car-tracks for two and three-quarter miles on Amsterdam Avenue, with a space of five feet between the tracks in the centre of the street," the railroad company has "without proper permission reduced that space to four feet, thereby making it physically impossible to repair or replace the two centre water-mains of the six that underly the avenue;" and the Commissioner of Public Works is called upon "to stop all work on the avenue until this matter is fully reported upon by engineering and electrical experts, it being generally believed that the leakage of the electric currents will permanently injure the water-mains, the iron yokes and conduits of the railroad company being in some places, as at 96th Street, within a few inches of the mains."

You are aware of the strenuous efforts I have made, in the public interest, to limit the occupancy of Amsterdam Avenue for railroad purposes to two single tracks of railway. If there are to be but two tracks, a distance of five feet between them would afford better facilities for repairing the large water-mains than if the tracks were only four feet apart. If, however, our efforts to limit the number of tracks to two shall

prove unsuccessful, and the avenue is to be traversed by four tracks, it is my judgment, based on the opinion of my engineers, that the space between each of these tracks should be only four feet, in order to leave as large an area as possible outside the tracks to facilitate general traffic on the avenue. With four tracks on the avenue, a break in either of the water-mains under them could not be repaired without removing one or more of the tracks.

With reference to the part of the resolution which expresses fear of damage being caused to the water-mains by the leakage of electric currents, I would state that this Department, with a deep sense of the vital importance of protecting the water-mains, gave full and serious consideration to the probable effect on them of electrolysis from underground currents before granting on August 10th, 1897, the permit to the Metropolitan Street Railway to convert its horse railroad into an underground electric railway in Amsterdam Avenue, between 125th Street and 71st Street, and in the Boulevard, between 71st Street and 65th Street.

When the application for this permit was received, I was prepared to give it most intelligent consideration, particularly with reference to the dreaded danger to water pipes through leakage of electric currents. In the Spring of this year I called for and received exhaustive reports on this subject from Mr John H. Frazee and from Mr Ernest M. Rosenberg, expert electrical engineers. Their reports (copies of which I enclose) show:

1. That in the underground electric system for propelling cars the leakages of electric current are self-contained, not being exposed to escape by

attraction as in the over-head trolley system.

2. That it may be safely assumed that the amount of electric current which manages to escape from the underground system of conductors, which are placed in an iron conduit, with tracks and slot rails of large conductivity, all bound together with cast iron yokes, is so minute, under the very worst condition, as to afford no reasonable ground to fear the possibility of corrosion or other damage to water-pipes.

Notwithstanding that these conclusions of our expert electrical engineers give no ground for apprehension that our water-mains are liable to be damaged by leakage of electric current, I took the precaution to fully protect the interests of the City in this respect by inserting these provisions in the permit:

"3. The electric system for the said railroad shall be so established and maintained as to prevent, as far as possible and by the best means available, from time to time, the transmission or return of the electric current from the conductors intended therefor, to and through water-pipes, gas pipes and other underground pipe systems; and neither the issuer of this permit nor anything herein contained shall relieve said company from liability for any damage done by the electrical current to water pipes or other structures belonging to the City.

"4. The conduits for the conductors of electricity shall be so constructed as to admit of easy examination of and access to the conductors contained therein, and their insulators and supports; and also with all sumps for drainage shall be so constructed as to be readily cleared of accumulation of dust or other debris; and no such accumulation shall be permitted to remain therein; and also shall be laid to such grades and so connected to sewers as to be automatically cleared of water, without danger of the water reaching the level of the conductors, and each such connection with the sewers of the said conduit and of sumps for drainage shall be properly trapped so as to be made air tight, and there shall be paid by said companies to the Department of Public Works for each such connection an amount equal to the usual charge for house connections.

4

"5. Tests and investigations shall be made daily during the operation of said electric railroad to ascertain as to any leakage of current before or after the hours of running, when the line is fully charged, and if at any time it shall be found that the leakage current exceeds half an ampere per mile of railroad, such leak shall be localized and removed as soon as practicable."

Although the expert opinion I received last Spring on the subject of leakage of current from the underground electric system was apparently conclusive enough, to more fully satisfy myself that the water-mains will not be subjected to damage by escaping currents of electricity, I called for an additional report from Mr Rosenberg when the resolution of the Board of Aldermen reached me. A copy of this report, dated the 18th inst., is also enclosed. It goes so far as to say that even if the water pipes were in actual contact with the yokes of the underground electric system at some point in Amsterdam Avenue, no appreciable amount of current would flow along the pipes if the railroad were being operated as it should be--with the equipment properly insulated.

My own mature judgment, based on the opinion of my expert electrical engineers, is that no electric current will reach the water-mains, especially as the whole of the iron superstructure of the railroad is laid on a foundation of concrete, which, being a non-conductor, protects the water-mains. I am sustained in this view by the fact that as the distance between the water pipes and the surface of the street is but four feet, the railroad companies will only be able to make their excavation, in which the concrete foundation is to be laid, 36 inches deep, their drainage having to pass over the water-mains to the sewers on either side thereof.

Very respectfully,

Charles S. Collins

Commissioner of Public Works.

Enclosures.

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

No. 150 Nassau Street,

New York, October 19, 1897

Copy.

Homer N. Lockwood, Esq.,
Union League Club.

Dear Sir:

The Mayor has referred to this Department for attention your letter of 13th inst., requesting that the work of placing street names and numbers on public lamps at street corners be completed before this administration goes out of office.

In reply, I beg to inform you that the ornamental street sign lamps to which you refer are being erected as fast as they can be obtained from the factory, and that within two or three weeks there will be 750 of these lamps in use on streets and avenues in this City lighted with electricity.

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,**New York, Oct., 21, 1897*

Hon. William L. Strong,

Mayor. Chairman of the Commissioners of the Sinking Fund.

Dear Sir:-

I desire to call the attention of your Commissioners to the very great urgency of making immediate provision for new quarters for that portion of the Sheriffs' office and the First Judicial District Court which are still located in the Brown-stone building in City Hall park.

I requested that such provision be made in my letter of the 5th inst., and by letter of the 6th inst., the Comptroller informed me that new quarters had been provided for the Street Cleaning Department in the New York Life Insurance Companies building.

This Department is required by the provisions of Chapter 632 of the Laws of 1897 to prepare the City Hall for the use of the Municipal Council of Greater New York and the Board of Public Improvements. That work is now in progress and is delayed only because suitable quarters have not yet been provided for the Sheriff and the First Judicial District Court. The time for accomplishing the necessary changes is very short and the prompt action of the Commissioners of the Sinking Fund in providing new quarters for the Sheriff and the First Judicial District Court will enable the Department to carry out the requirements of the Act of 1897.

Very respectfully,

Charles A. T. Collins

Commissioner of Public Works.

THE FOLLOWING REPORT FROM THE OFFICIAL CHEMISTS OF THE NEW YORK PRODUCE EXCHANGE UPON THE ELECTRIC FIREPROOFING PROCESS AND ITS VIRTUES.

Chas. M. Stillwell, A.M.
Thos. S. Gladding, A.M.

Analysis No. 63964.
P.O.Box I26I.

OFFICE AND LABORATORY OF
STILLWELL & GLADDING,
ANALYTICAL AND CONSULTING CHEMISTS,
No. 55 Fulton St., Cor. Cliff St.

New York, January 23rd, 1895.

THE ELECTRIC FIREPROOFING CO.
Gentlemen:

During the past six months we have made a careful examination of your Patent Fireproofing Process and report as follows:-

1. The Chemical Compound used in your Process is of the highest efficiency as regards its fireproofing properties.

2. This Compound is permanent and fixed in its nature. Wood that has been treated by your Process will remain permanently non-combustible. There will be no deterioration in this respect by lapse of time or difference of climate.

3. Your Process not only renders wood non-combustible, but also has a valuable preservative action. Wood that has been treated by your Process will be largely protected thereby from dry-rot, insects, worms, etc.

4. The Chemical Compound used by you will not injure the texture of fine fabrics, laces, etc. Your Process can be applied successfully to all such materials.

5. In conclusion, your Process is applicable not only to wood, cloths, and all fabrics, but to all substances of a combustible nature which it is possible and desirable to render fireproof.

Respectfully yours,
STILLWELL & GLADDING,
Chemists to the N.Y. Produce Exchange.

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

On the 24th day of January in the year one thousand eight hundred and ninety five, before me personally came Thomas S. Gladding, to me known and known to me to be the individual described in and who executed the foregoing instrument and acknowledged that he executed the same.

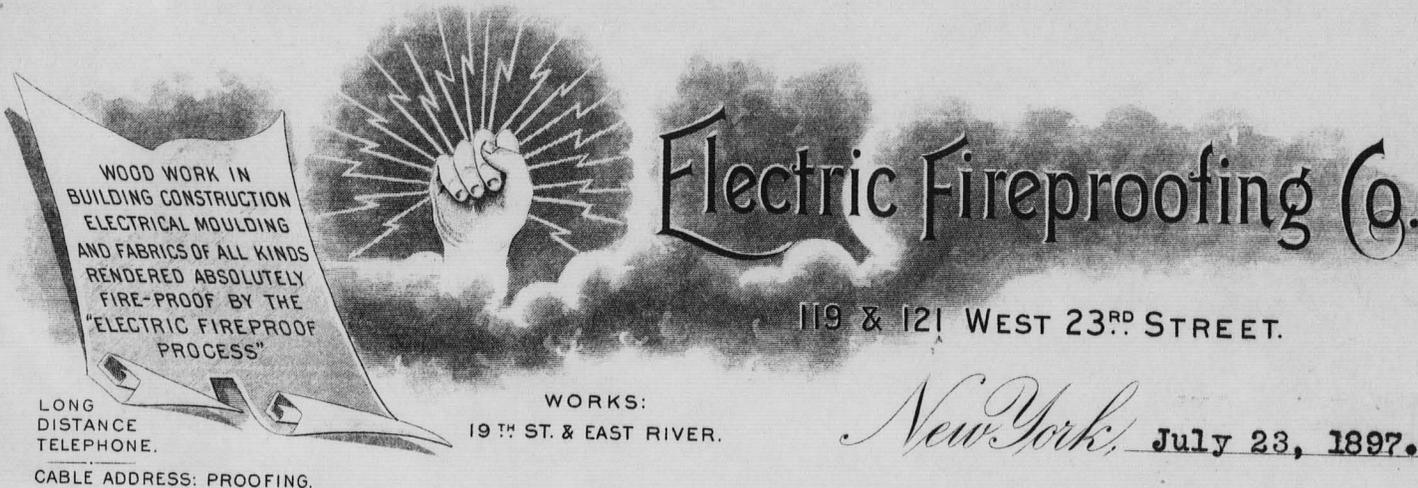
THOMAS S. GLADDING.

Philip Evans, Notary Public,
Kings County,
Certificate filed in N.Y. County.

GEORGE C. CURRIER, Prest.

MAX BACHERT, Vice Prest.

JOHN J. HUGHES, Secy. & Treas.



WOOD WORK IN
BUILDING CONSTRUCTION
ELECTRICAL MOULDING
AND FABRICS OF ALL KINDS
RENDERED ABSOLUTELY
FIRE-PROOF BY THE
"ELECTRIC FIREPROOF
PROCESS"

Electric Fireproofing Co.

119 & 121 WEST 23RD STREET.

WORKS:
19TH ST. & EAST RIVER.

LONG
DISTANCE
TELEPHONE.

CABLE ADDRESS: PROOFING.

New York, July 23, 1897.

Mr. John C. Graham, Sup't Repair and Supplies,

150 Nassau Street, New York.

Dear Sir:-

Enclosed I hand you an official statement and analysis from Stillwell and Gladding, official chemists of the Produce Exchange of the city of New York, which I think will cover the questions you asked me this day. If any further information is desired, please communicate with me at any time.

11
Most respectfully,

O. M. Bidwell

Copy.

August 1st, 1896.

Bureau of Construction and Repair,

United States Navy,

Navy Department,

Washington, D. C.

In answer to your favor we submit the following:- The chemical salts used by the Electric Fireproofing Company, of New York, are sulphate of ammonia and phosphate of ammonia; the former of these is a perfectly neutral salt, the sulphuric acid is completely neutralized by the ammonia present, and is not set free in any way by the processes of their treatment. The phosphate of ammonia when dissolved in hot water, as in their process, will lose a small amount of ammonia and a small percentage of acid phosphate of ammonia is formed. No free phosphoric acid, however, is present, as may easily be demonstrated by chemical examination. This small percentage of acid phosphate of ammonia will not in the dry state have the slightest corrosive action on iron nails, or iron or steel used of any kind. Nor does a solution of the chemical salts used in their process seem to have any perceptible solvent action on iron. A careful examination of the iron tanks and iron pumps used in their work shows no corrosion. One iron tank, made of boiler iron $\frac{3}{8}$ " thick, which has been in constant use for three years to make saturated solutions of their chemical salts at a boiling temperature, is still in perfect condition. We are certain that no fear need be entertained of any injury or corrosive action on

iron or steel work of any kind.

With reference to the action of the fireproofing salts on paint used to cover the treated wood, there will be no chemical action between such salts and the carbonates in the pigments employed. There would be no decomposition of the fire-resisting salt, and the fire-resisting properties would remain unimpaired from lapse of time or change of climate.

Respectfully,

Stillwell and Gladding.

Official Chemists of the N. Y. Produce Exchange.

Darifford



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

New York, Oct. 14th, 1897.

Gen. C. H. T. Collis,
Commissioner of Public Works.

Dear Sir:-

Through the request, as I understood, of Mayor Strong, and through instructions from you, I was requested to make an examination of the wood treated by some process which I have not been made acquainted with, except by the chemical analysis hereto attached.

The wood is treated by what is known as the Electric Fireproofing Co., who claim that it is perfectly and actually fire proof after receiving the treatment that they give it.

On June 24th, at 2 P.M., I arrived at the place known as the yards of the Electric Fireproofing Co., 19th St. & Avenue "A". Mr. Bidwell, who is interested in the matter, and another gentleman, whose name I do not know, took several pieces of wood that had been kiln dried after being treated by their process, and opened a furnace door in a boiler, which must, at the time, have been at the temperature of 3000° of heat, and threw three different kinds of pieces of wood on the red hot coals - one of the pieces was yellow pine, another white pine and another spruce.- The furnace door was closed immediately, and I could see through a peep hole into the furnace and not one single sign of a blaze arose from the three different kinds of wood. They were left there for five minutes, and after pulling them out I found that they were carbonized 1/8 of an inch on the bottom side, where it had been resting on the red



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

New York, _____ 189

- 2 -

hot coals, and very little on the top.

I did not consider that this was a fair test so we got a lot of common wood, which had not been treated, and some treated wood, and put it into the barrel and mixed them together and set fire to it, and in about ten minutes the ordinary wood had burned away, and the treated wood remained in almost the same condition, excepting it was slightly carbonized.

I was not satisfied with that test so I requested Mr. Bidwell to have a sheet iron box built with a funnel to it and a door in front, and with peep holes in it so that I could clearly see what effect the heat, which would naturally arise in a closed furnace like this, would have upon the treated wood.

The fire was started in the furnace, after loading it up with ordinary wood, and mixing the treated wood with it in the centre of the furnace and along the side short pieces of the fire proof wood stood up.

The heat in that furnace after the door was closed was perfectly intense, greater, I believe, than the heat in the furnace I referred to in the first part of this statement.

After all the common wood had burned away - after 7 minutes' time - he withdrew the treated wood from the furnace, and what stood on the side was merely singed, and what was in the middle of the furnace was carbonized to about $1/16$ th of an inch.

I made a severe test by saturating two pieces of the fire proof wood with kerosene oil and setting fire to it; the kerosene oil immediate-



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

New York, _____ 189

- 3 -

ly took fire, but left no trace of it on the wood.

I believe the tests applied to this wood by myself were as severe as could possibly have been applied to it.

In no instance during the whole test did the sign of a blaze appear on any of the treated fire proof wood.

There is no doubt on my mind about the qualities of the treated wood for any kind of purposes that it could be used for. The fact that no blaze arises from it when the severest tests are applied to it is sufficient proof that it cannot be anything but what is perfectly safe material to be used in building of any kind.

There is but one thing in relation to this wood that I have any doubt about, and that is if the wood mentioned will contain and hold the substance it has been treated with for all time that it may remain in use. This is a question for a chemist to answer. When I made that statement to the Superintendent of the Electric Fireproofing Co. he gave me a copy of a chemical analysis that was made by Messrs. Stillwell and Gladding, official chemists of the Produce Exchange of N. Y. City, which is hereto attached.

I feel perfectly safe in stating, that with the exception of the above, I cheerfully recommend it for use in any place where such material may be required.

Respectfully,
John C. Graham
Supt. of Repairs & Supplies.

*Department of Public Works,
Commissioners Office.*

150 Nassau Street,

New York, Oct. 26th 1897. 189

My dear Sir;

I have the honor to transmit to you the report of Mr. John C. Graham, Superintendent of Repairs and Supplies of this Department, upon the subject of Electric Fireproofed Wood, which at your request was referred to him for test.

Yours very truly,

Charles A. T. Collins

Commissioner.

Hon. Wm. L. Strong,
Mayor.

*Department of Public Works,**Commissioner's Office,**No. 150 Nassau Street,**New York, Nov. 18th 1897/189*

Dear Sir;

I am in receipt of your letter of the 15th inst., asking for certain information in regard to Madison Avenue.

1st. The conduits for electrical conductors which are laid alongside the track on Madison Avenue by the Metropolitan Traction Company, are a necessary incident to the system of propulsion by electricity, and have been laid under the superintendence of the Chief Engineer of this Department, and an Electrical Engineer, expressly employed for that purpose.

They do not interfere with any existing conduits, and are placed alongside the track so that ready access may be had to them in case of necessity to prevent unnecessary delays of the public traffic. They have been laid with the full sanction of this Department, and under most careful scrutiny and supervision by competent electricians.

2nd. The laying of the granite pavement between the tracks is being done by direction of this Department after a most careful consideration of the subject, and all questions which it involves had been duly considered.

Fifth Avenue has been converted from a granite to an asphalt pavement, and all avenues running north and south will in course of time be similarly treated. It has been the experience of all northern

2.

cities that there are occasions when owing to a dense foggy atmosphere or a light fall of snow, asphalt pavements become exceedingly slippery and unavailable for traffic. It has, therefore, been found expedient to provide against these conditions by laying strips of granite pavement on those portions of the highway which are not ordinarily used for vehicular traffic, but would be availed of only in emergencies.

Of course the comfort and quiet of citizens living on residential streets is entitled to great consideration and protection, but in a great commercial city, built upon a narrow strip of land, equal care must be given to the easy distribution of vehicles.

If all the streets running north and south were paved with asphalt from curb to curb, there would come times when the entire traffic of the city would be paralyzed. I have seen just such a condition in a neighboring city, and the remedy is now being applied ^{there} by laying granite blocks between the railroad tracks.

Ordinarily no vehicle will resort to the granite pavement if the asphalt is available, so that the question of noise is hardly worthy of consideration, as the granite would seldom be used unless when covered with a layer of snow.

I did not determine upon this change until I had personally made myself familiar with the fact that drivers never leave the asphalt to take the granite unless compelled to do so by some obstacle in their way.

The Railway Company preferred to restore the asphalt pavement, because it was much cheaper to do so, as the laying of the granite between the slot and the rail involved cutting the ordinary block into

3.

smaller blocks at considerable additional expense.

You are mistaken in assuming that the granite pavement is preferred by heavy wagons of all kinds. On the contrary, investigation made by this Department demonstrates the fact that everything on wheels seeks the asphalt in preference to the granite, excepting upon such occasions as I have referred to.

On First Avenue, which I have recently repaved from 20th to 100th Streets, I took care to lay granite strips on all portions of the avenue where the grade exceeded 3%, yet I find that the brewers' wagons and other heavily laden vehicles, prefer the asphalt even upon these grades.

3rd. As to the re-paving of the Avenue by the same Company who laid the original asphalt before I came into office, I have no other alternative. The City has covenanted with them to keep the pavement in repair for fifteen years; but I require them to lay a "binder" over the concrete, and I have forbidden their use of rock asphalt.

You are mistaken in supposing that the breaking up of the pavement arose from the uneven surface of the concrete. It arose from the failure to lay what we call "a binder" of asphalt and gravel, two inches in thickness, between the concrete and the asphalt surface. This "binder" holds the surface firmly to the concrete and prevents the "undulations" and "waves" which have heretofore existed.

You will observe that there is no patchwork being done on Madison Avenue by the Asphalt Company. The pavement is being torn up where necessary from the curb to the outside rail, and everything is brand new, excepting the concrete, which upon examination of my engineers

4.

is reported to be in excellent condition. The uneven surface of the concrete is rather an advantage than a disadvantage, provided it maintains a thickness of at least six inches.

I have no power to avail myself of your suggestion to abrogate the existing contract and employ the Barber Asphalt Paving Company to relay the pavement, nor do I agree with you that the Barber is the only Company doing work for the City of New York who are using materials and performing their work in such manner as to be lasting. If this was the case, I should not have been able to reduce the price of paving as I have done from 25 to 33%. The Warren Scharf, the California and the Sicilian Asphalt Companies lay pavements, which in my opinion, are quite as durable as those of the Barber Company.

4th. It would be idle for me to discuss with you the question of the privileges which your street as a residential avenue" is entitled to over those which are not exclusively occupied as residences, or the annoyance you are to suffer from the frequent running of large electric cars.

The growth of this City is mainly attributable to the facilities afforded by the elevated railroad, and I believe the comfort of the citizen which will be secured by supplanting the horse with electricity, thus conveying him and his family to and from their homes under a system of transfers which will place all distances at their disposal for five cents, will make the present residential avenues more attractive than ever.

I believe without egotism I can say, that I have done more

5.

for Madison Avenue than any of my predecessors, and I shall be exceedingly disappointed to learn after the work is completed, that I have in any respect blundered.

I can assure you that nothing has been done without most careful thought, consideration and consultation with the best talent at my disposal. I have at least one consolation, that I shall leave office having provided this avenue and Fifth Avenue for the first time in their histories, with a thorough system of drainage, constructed in the face of the most embarrassing obstacles, and under constant abuse and vituperation, and that I have saved the residents of those streets from an epidemic, which the Board of Health have certified was inevitable under the then existing conditions.

I am,

Very truly yours,

Charles H.T. Collis.

Commissioner of Public Works.

J. Harsen Rhoades, Esq.,
246 Sixth Ave., City.

Department of Public Works
Commissioner's Office.

No. 150 Nassau Street,

Copy.

New York — November 24, — 1897

T. M. Curry, Esq.,
 373 West End Avenue.

Dear Sir:

I have received through the Mayor's office for attention your letter of November 15th, asking if anything can be done to increase the pressure and supply of water in your house No 373 West End Avenue.

These premises have been examined and our inspector reports that he found the fifth or top floor fully supplied with water by natural pressure. There is no tank on the roof to collect and distribute water. Owing to the extra use of water for washing on Mondays the pressure is lighter than on other days, and water does not rise to the top floor steadily until afternoon.

The premises are supplied with water from high service, and the pressure taken at the hydrant opposite No 381 on November 19th was 27 pounds.

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,

New York, November 29, 1897

Copy.

Messrs Laun and Sons,
30 West 12th Street.

Gentlemen:

I have received through the Mayor's office for attention your letter of 16th inst., stating that 12th Street, from 5th to 6th Avenue, was at the time you wrote being prepared for the laying of an asphalt pavement, and that the contractor in charge positively refused to allow your wagon to be driven to your door for the purpose of loading and unloading furniture received and delivered to your various customers.

In reply, I beg to say that the Water Purveyor reports that the repaving of that street has been completed, and that it is now open to traffic.

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,

New York, Nov. 27th 1897. *189*

COPY.

Dear Sir;

I am informed that at a meeting of the Board of Estimate and Apportionment held yesterday, from which I was unavoidably absent, you stated that the work now being done to fit the City Hall for the new requirements of the Consolidated City of New York, was being excessively charged for.

I do not know whether you have seen a copy of the specifications for said work, but shall be very glad to hand them to you for examination, and if you will furnish me with any proof, or any information which will put me upon inquiry, as to a violation of the terms of the contract in any respect, I shall consider myself under an obligation to you.

Yours very respectfully,

(signed) Charles H.T. Collis,

Commissioner of Public Works.

Jefferson M. Levy, Esq.
66 East 34th St.,
City.

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

150 Nassau Street,

New York, Nov. 29th 1897. *189*

My dear Sir;

I have the honor to enclose you a copy
of a letter I wrote to Mr. Jefferson M. Levy on
Saturday last.

Yours very truly,

Charles A. D. Collis

Hon. Wm. L. Strong,
Mayor,
N.Y. City.

Department of Public Works,
Commissioner's Office.

No. 150 Nassau Street,

Copy.

New York, December 1, 1897

John Downey, Esq.,
 410 West 34th Street.

Dear Sir:

His Honor the Mayor has referred to this Department for attention your letter to him of November 23rd.

I appreciate and greatly regret the inconvenience and discomfort to which you and your neighbors have been subjected and still have to endure through the excavations in front of your residence and adjoining properties in Madison Avenue in the vicinity of 56th Street.

From report made to me by the General Inspector of Street Openings, I find that the New York Steam Company have opened Madison Avenue under authority of a permit to lay a steam pipe between 54th and 56th Streets to supply steam heat to residents in that neighborhood.

In view of your just complaint, the Steam Company have been ordered to vigorously prosecute their work therewithout intermission day and night until it shall be completed, and that if they fail to finish it by next Saturday night, it will be stopped and the trench refilled by this Department.

In this connection I would state that for years the operations of the New York Steam Company in the public streets have been a constant source of annoyance and embarrassment to this Department. It has only been by continually prodding this Company that they have made any effort to energetically prosecute such work in the streets. This Department has not

sufficient power to deal with a Company of this character. They do not seem to comprehend their obligations to the public, and invariably fail to act in such a manner as would indicate that they have any desire to redeem the reputation they have earned of being an unmitigated nuisance to this Department and to the public generally.

Very respectfully,

(Signed) HOWARD PAYSON WILDS,

Deputy Commissioner of Public Works.

Respectfully transmitted to
His Honor the Mayor for his in-
formation, as requested.

Department of Public Works,
Commissioner's Office,

No. 150 Nassau Street,

New York,

Dec., 3,

1897

Hon. William L. Strong,

M A Y O R .

Dear Sir:-

I have received with a letter dated Nov., 27th, 1897, from your Secretary, a resolution adopted by the Board of Aldermen suggesting that room 13 in the City Hall, to be known hereafter as the Reporters' Room, be provided with desks, uniform in style and character, and that in the selection of these desks the wishes of the reporters be consulted as far as possible.

In reply, permit me to say that the Superintendent of Repairs and Supplies will give special attention to this matter as early as he possibly can.

Very respectfully,

James Thompson

Deputy Commissioner of Public Works.

14

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

No. 150 Nassau Street,

Copy.

New York, December 8, 1897

Henry McCaddin, Esq.,
66 Madison Street.

Dear Sir:

His Honor the Mayor has referred to this Department for attention your letter of October 28th to him, complaining that the sidewalk in front of the premises adjoining No 68 and 70 Madison Street is continually obstructed with trucks, loading and unloading from a platform erected outside the building.

In reply, I beg to inform you that the lessees of these premises have been notified that this nuisance must cease, and that other arrangements must be made for loading and unloading their trucks. They will call upon you and endeavor to arrive at some understanding in the matter. They have requested a little time to make certain alterations to their premises which will obviate the necessity of backing trucks across the sidewalk, and I understand you have consented to the time being extended to January 1st, when it is expected there will be no cause of complaint.

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,

New York, December 8, *1897*

Hon. William L. Strong,
M a y o r.

Dear Sir:-

I beg to notify you that the complaint of Mr. F. C. Turney, 574 East 159th St., which was received with your letter of 6th inst., from your secretary, concerning building obstructions in 159th St., has been referred by me to the Commissioner of Street Improvements of the 23rd and 24th Wards, who has jurisdiction over such matters in that district.

Very respectfully,

Charles A. S. Bellis

Commissioner of Public Works. *D*

Department of Public Works,
Commissioner's Office.

150 Nassau Street,

New York, Dec. 10th 1897. 189

My dear Mr. Mayor;

I should like you to look at
these lights as you go home this evening, if you
have time.

Yours very truly,

Charles A. D. Collins

Hon. William L. Strong,
Mayor.

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

No. 150 Nassau Street,

New York, Dec. 10th 1897. 189

Hon. William L. Strong,
President,
Gas Commission.

Dear Sir;

As you are aware, Park Avenue from 56th to 96th Streets has been regraded and resurfaced with asphalt and is becoming an exceedingly popular highway, especially at night time, when it is used by large numbers of carriages and bicycles.

The lighting of the street has always been very poor, and I have asked the Consolidated Gas Company to illuminate it for a few days with Welsbach burners, so that you and the Controller can have an opportunity of inspecting it and determining whether it is advisable to incur the additional annual expense for lighting it in this method. Of course if you disapprove, the burners will be immediately replaced by those of the old type. The additional expense will be \$3,648 per annum.

There are no electric subways on this Avenue, otherwise I would submit an alternative proposition for electric light.

Yours very truly,

Charles D. Collins

Commissioner of Public Works.

P.S. I desire to say that the experiment I am trying at present, is at no additional cost to the City.

Department of Public Works,
Commissioner's Office.

No. 150 Nassau Street,

New York, Dec. 10th 1897 *189*

Hon. William L. Strong,
Mayor.

Dear Sir;

I am in receipt of your letter of yesterday, requesting me to furnish you to-day, or as soon thereafter as possible, with a schedule showing the manner in which, in my judgment, the public records and the employees and subordinates in this Department should be transferred and reapportioned, under the provisions of Section 1536 of the Charter of the Consolidated City of New York.

I am now preparing the schedules and hope to have them ready for you by Wednesday next.

Yours truly,

Charles A. D. Collis

Commissioner of Public Works.

Department of Public Works,
Commissioner's Office,

No. 150 Nassau Street,

New York, December 15, 1897

HON. WILLIAM L. STRONG,

Mayor: *C*

Dear Sir:

In compliance with your request of December 9th, I transmit herewith schedules showing the positions to which I desire to have the employees of the various bureaus and offices of this Department assigned under the provisions of the new Charter.

I also enclose memoranda regarding the disposition which I think should be made of the public records of all the bureaus and offices now in existence.

Very respectfully,

Charles H. Collins

Commissioner of Public Works.

Enclosures.

Department of Public Works,
Commissioner's Office.

No. 150 Nassau Street,

New York, Dec., 15, 1897

Hon. William L. Strong,

Mayor.

Dear Sir:-

I have the honor to present to you the following report of the present condition and progress of pavement works under contract and under way:-

Fifth Avenue from 9th to 59th Streets.

The asphalt pavement is complete from 9th to ^x37th Street and from 43rd to 55th Streets, except the intersection of 23rd Street, which will be done at once. On the blocks from ~~38th~~^{42nd} to 43rd Streets and from 55th to 59th Streets, the concrete foundation for the asphalt pavement is laid.

Asphalt Pavements.

Eighth Avenue from 110th to 135th Streets--The asphalt pavement is completed from 116th to 125th Street on both sides of the car tracks, and from 125th Street to 127th Street on the east side of the tracks.

85th Street, from Central Park West to Amsterdam Avenue.

This asphalt pavement will be completed to-day.

86th Street from First to Madison Avenues--The asphalt is completed on the south side of the car tracks between 2nd and 3rd Avenues the granite pavement for the binder is laid on the north side of the car tracks from 3rd to Madison Avenues.

The Boulevard, West side, from 108th to 110th Sts.

The laying of the asphalt pavement is suspended to await the laying of a water-main under an existing contract.

^x nearly to 38th St.

108th Street from Central Park West to Columbus Avenue--This work is held in suspense in consequence of a protest of property owners, through the Comptroller, against asphalt pavement between Manhattan and Columbus Avenues, on account of heavy grades.

82nd Street from Columbus Avenue to the Boulevard--The binder for the asphalt pavement is in place, and the pavement will be completed next week.

Fifth Avenue from 60th to 80th Streets--The asphalt pavement will be completed this week from 69th to 74th Streets. Nothing done between 60th and 69th Streets and between 74th and 80th Streets.

Thirty-first Street from 4th to 5th Avenues--The asphalt pavement will probably be completed this week.

Forty-eighth Street from 1st to Lexington Avenues-- This work is in progress, and it is expected that the asphalt pavement will be completed in ten days.

Mc'Coomb's Dam Road from 8th Avenue to Central Bridge--Asphalt Blocks--It is expected that the pavement will be laid from 153rd Street to the bridge approach within ten days.

Eighteenth Street from 7th to 8th Avenues--The asphalt pavement will be completed to-morrow.

Asphalt Strips on 11th Avenue from 41st to 42nd Streets and on 42nd Street from 11th Avenue to the Ferry--Will be finished this week.

Asphalt Strips on Desbrosses Street from Hudson Street to the Ferry House--Will be finished in ten days.

162nd Street from Amsterdam Avenue to Edgecombe Avenue--the asphalt pavement will be finished this week.

45th Street from 6th to 8th Avenues--The asphalt pavement will be finished to-day.

66th Street from Boulevard to Amsterdam Avenue.

The binder for the asphalt pavement is now being laid.

Park Avenue from 56th to 96th Streets(Part granite on steep grades) This pavement is completed except the small piece at the intersection of 59th Street. The pavement on the northerly half of this intersection will be laid to-day.

Macadam Pavement.

Boulevard Lafayette from 11th Avenue to Kingsbridge Road--

This work is progressing as rapidly as practicable.

Granite Pavements.

Park Avenue, east side, from 100th to 102nd Streets--This

work is progressing rapidly.

Lexington Avenue from 101st to 103rd Streets-- The concrete

foundation for this pavement is now being laid.

Eleventh Avenue from Dyckman Street to Wadsworth Avenue--

This pavement will be finished in four weeks, weather permitting.

Sixth Street from Lewis Street 500 feet easterly-- The con-

crete foundation for this pavement is now being laid.

East Street from Rivington to Water Streets--This pavement

is now one-half completed.

Monroe Street from Jackson to Grand Street--The pavement will

be completed this week.

48th Street from 11th to 12th Avenues--This pavement will be

finished to-day.

The following contracts were let so late this season that it is not deemed prudent to order the works to be commenced so close to the winter season

Barber Asphalt Paving Company.

Mercer Street from 3rd to 4th Streets.

74th Street 1st to Park Avenues.

12th Street from 6th to 7th Avenues.

8th Avenue, S.S. of 135th to south side of 155th Streets

Sicilian Asphalt Paving Company.

Broadway, from 47th to 58th Streets.
48th Street from 8th to 11th Avenues, and
49th Street from 7th to 8th Avenues.

Warren-Scharf Asphalt Paving Company.

64th Street, from Park to 3rd Avenue, and
65th Street, from Lexington to Park Avenues.
Lewis Street, from Houston to 8th, not land grant.
6th Street from Avenue D. to Lewis, and 7th Street
Avenue C. to Lewis Street.
81st Street from 1st to 3rd and Park to Madison Avenues.
37th Street from Lexington to Park Avenues.

Asphalt Construction Company.

111th Street from 5th Avenue to Avenue D.

Hastings Pavement Company.

114th Street from Amsterdam to Riverside Drive.
148th Street 8th to Bradhurst Avenues.
182nd Street from Boulevard or 11th Avenue to
Amsterdam Avenue.

Fruin-Bambrick Construction Company.

68th Street 1st to 3rd Avenues,
5th Avenue, 60th to 69th and 74th to 80th Street.

W. P. Baird,
6th Street from Lewis Street to about
500' East, not land grant.

Very respectfully,

Charles H. T. Collett

Commissioner of Public Works .

(Copy)

Dec. 16, 1897.

Gen'l Chas. H. T. Collis,
Commissioner of Public Works.

My dear Sir:-

In answer to the telegram sent you yesterday I note in a comment on the part of the Evening Post that you had referred it to the Water Purveyor, Mr. Barney, for investigation, that Mr. Barney said to the reporter that I was mistaken - that he had made an examination of the strip of asphalt which I say has been laid in violation of the company's contract - that he found the company was complying with the last details of the terms of its contract - that the work is being done in accordance with the rules of the Department of Public Works - and that asphalt is being laid on its original foundation of concrete.

I have also received a communication from Mr. Barney, by telephone, which, if correctly reported to me, states, in effect the same thing, except that by inference I judge the statement made by me is correct. The statement referred to is as follows:

"When the railroad company put, two feet from the outside rail, a conduit for electric current, they filled in that trench, concreted it, and put broken stone on top to provide for traffic until such time as the whole asphalt pavement could be restored."

Now, what my own observation leads me to know, as I live on the avenue and have been a close observer of what has been done with the trench containing these electric wires, is this:

The railroad company laid a conduit of terra cotta pipes; they were bound together with cement, and, if I remember correctly, they had a body of cement laid over them; then the trench was filled up with loose stone, and it has remained in that condition from the time the stone was thrown in to the present time. I have carefully examined, from day to day, as I have passed up and down the avenue, to find whether any portion of this loose stone filling had been removed and a concrete foundation for the asphalt had been laid in place of the loose stone originally dumped into the trench by the railroad company. I have seen no evidence of this being done. Two ^{days} years ago the old asphalt was removed from the concrete in front of my house, and the foundation prepared for laying new asphalt. Wherever the concrete had

C. H. T. C. #2.

been cut through in cross sections to reach the man-holes of the sub-way conduits - I mean the sub-way conduits near the curb - a concrete foundation was placed in such cuts, but in the trench referred to by me no broken stone was taken out up to yesterday morning, and no concrete foundation was put on top of that trench to receive the asphalt.

Yesterday morning, on the block or two below my house, I called attention of the foreman to this fact and asked whether such concrete was there. He claimed it was. I then asked one of the workmen in connection with him to put his pick where such concrete was said to be laid. He did so, and he picked up a quantity of loose stone; and I reiterate now what I said in my telegram, that the trench in which these electric conduits are laid along the avenue, from 42d St. to 59th St., has not had a concrete foundation laid upon which the asphalt rests, unless your Department claims that the concrete placed on top of the conduit itself some two or three feet below the surface of the ground is the foundation referred to by you.

Whether the heavy traffic will not disturb the loose foundation under it, constructed in the manner suggested by me, I do not know. Time alone can prove that. My reason for calling your attention to this is that I did not believe it would stand it, and I believe that the contracts and the law require a concrete foundation to be laid under all asphalt pavement to and connecting with it, and not two or three feet below it.

I have believed, and believe now that the reason for doing the work in the manner in which it has been done has been to afford the traction company easy and cheap access to this electric conduit, which they would not have if a solid concrete foundation had been laid over their trench, as is laid alongside of the trench, and my judgment is born out, I think, from the fact that on 2d Av., where a similar trench has been dug and terra cotta pipes laid for a similar purpose, the trench has been filled up with some material - I do not know what - on top of which some loose paving stones have been laid, nearly on the surface of the asphalt, leaving sufficient space only between the top and the asphalt pavement on the avenue to supply a coat of asphalt; and any one who chooses to visit that avenue and look at the work being done will substantiate the truth of my statement. Second Av. is paved with asphalt. I believe this asphalt has a concrete foundation, and yet it is self-evident that it is not the intention to re-place that concrete foundation over the trench which

C. H. T. C. #3.

has been dug alongside of the tracks for the electric conduit, but in place of same to use loose paving stones, on which the asphalt will be placed.

It is facts such as I now give you which form the foundation of my protest, which I respectfully repeat as sent to you yesterday. If I am wrong, I am perfectly willing to make the amende honorable, and, further, I am so well satisfied of what I say about Madison Av., that if your Department will take up a piece of the asphalt anywhere between 52d and 55th Strs., on Madison Av., and with pick-ax dig down to the electrical conduit, they will find, in my judgment, that no concrete foundation has been laid in the manner in which the concrete has been laid on the rest of the road-way. If they choose to do this, and I am wrong, I will, personally, pay out of my own pocket the expense of breaking up such piece of asphalt and such examination so made.

I remain,

Yours sincerely,

J. H. Rhoads

My dear Mr. Strong: It is right you should read this

Cordially

Your friend

John Harry Rhoads

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

No. 150 Nassau Street.

New York, Dec. 16th 1897. 189

Copy for information of the Mayor.

J. Harsen Rhoades, Esq.,
246 Sixth Ave.,
City.

My dear Sir;

Upon receipt of your telegram of yesterday, informing me that the Sicilian Paving Company had laid and were laying on Madison Avenue a strip two feet wide on each side of tracks, with asphalt, without placing concrete foundation under the same, all of which work was being done in violation of contract and contrary to law, I at once directed an investigation to be made, although I was satisfied you were laboring under some misapprehension.

As I cannot find that they are doing anything of the kind, I shall be obliged if you will give me further information as to the locality.

Yours very respectfully,

Charles H.T. Collis,

Commissioner of Public Works.

*Department of Public Works,
Commissioner's Office,
150 Nassau Street,*

Copy.

New York, December 17, 1897.

Charles W. Nassau, Esq.,
12 West 71st Street.

Dear Sir:

The Mayor has referred to me your letter of December 9th, and I have also received your similar letter of same date addressed to me, complaining that, in reconstructing the railroad on 8th Avenue, the roadway in front of No 12 West 71st Street, and elsewhere along the street, is blockaded with sand and other material.

The General Inspector of Street Openings reports that the cause of your complaint has been removed.

Very respectfully,

(Signed) HOWARD PAYSON WILDS,

Deputy Commissioner of Public Works.

Respectfully transmitted to
His Honor the Mayor for his information as requested.

Department of Public Works,

Commissioner's Office,

No. 150 Nassau Street,

New York, December 20, 1897

Hon. William L. Strong, Mayor,

Chairman, Board of Estimate & Apportionment.

Dear Sir:-

On August 17th I requested your Board to authorize me to repave with asphalt pavement

81st Street from First to Madison Avenue.

The Comptroller's Engineer reported, on September 23rd, to your Board, that from First to Third Avenue, and from Park to Madison Avenue, no objection.

Appropriations for these sections were authorized by your Board. He also reported that from Park to Madison Avenue has a 3 % grade, and therefore would not recommend this section for paving with sheet asphalt.

Remaining to be paved, 1350 square yards.

On the same date I submitted a request to pave

81st Street from Central Park West to Riverside Drive.

Comptroller's Engineer reported that from Ninth to Tenth Avenues (Columbus to Amsterdam) was over 3-1/2 % grade, and that he did not deem it advisable to pave it with asphalt.

The other sections, (from Central Park West to Amsterdam Ave., and from Amsterdam Ave. to Riverside Drive,) were authorized for repavement by your Board, and appropriation made.

Remaining to be paved, 2767 square yards.

On the same date I also submitted

84th Street from Columbus Avenue to Riverside Drive.

The Comptroller's Engineer reported that the grade between West End Avenue and Boulevard is over 3-1/2 %, and would not advise re-

pavement with asphalt. No objections to repavement between Columbus Avenue and Boulevard, and West End Avenue and Riverside Drive. Your Board authorized an appropriation for the last-named sections. Remaining to be paved, 1030 square yards.

I therefore recommend to your Board that the following named sections be repaved with asphalt block on concrete foundation, the same having been reported unfavorably, by the Comptroller's Engineer, for repavement with sheet asphalt:-

	Sq. Yds.	Estimated Cost
81st St. from Park to ^{Third} Madison Aves.	1,550 2,900	\$4,320. 9,280.
81st St. from Columbus to Amsterdam Aves.	2,767	8,854.40
84th St. from West End Ave. to Boulevard,	1,030	3,296.
	Total,	\$16,470.40 21,430.40

Yours truly
Charles W. D. Collins
Comr

Department of Public Works

Commissioner's Office

No. 150 Nassau Street,

New York, Dec., 23, 1897

Hon. William L. Strong,

Mayor. Chairman, Board of Estimate and Apportionment.

Dear Sir:-

I have the honor to call the attention of your Board to the necessity of revising and increasing the final estimate for "Lamps & Gas and Electric Lighting" for 1898. The Board has allowed in the final estimate, as so far acted upon, the total amount of the departmental estimate, viz: \$1,290,236. That estimate was made in September last and made provision for 350 electric lamps to be added to the present number next year. Since that time, however, the Gas Commission has taken action whereby the increase of electric lamps over those now in use should be 1257, which thus necessitates the revision of the departmental estimate as follows:-

For lighting and maintaining public lamps	\$541,869.00
For gas to public buildings and offices	45,250.00
For lighting Armories	45,000.00
For electric lighting	<u>691,475.00</u>
Total	\$1323,594.00
Increase over the present final estimate	33,358.

If the action of the Gas Commission in this matter is to be sustained, it will be necessary to increase the final estimate to the above amount.

Very respectfully,

Charles H. Collins

Commissioner of Public Works.

Department of Public Works,
Commissioner's Office,

No. 150 Nassau Street,

New York, Dec., 24, 1897

Hon. William L. Strong,

Mayor. Chairman Commissioners of the Sinking Fund.

Dear Sir:-

At the earnest request of Hon. James J. O'Gorman, Justice of the Eleventh Judicial District Court, the Architect for that Court building recommends certain alterations, as follows:-

Altering the rail of the Jury Box--estimated cost--	\$42.00
Setting a panalled railing with gate at the back of the witness stand,	32.00
Making and setting carved panel in front of the Judges desk,	80.00
Making and setting baluster railing with two gates in front of the Judges bench, extending from the Jury Box to the front of the building,	193.00
Altering sash of circular windows to swing on pivots,	47.00
Taking down iron railing about the stairway from the Court Room to the basement and covering the top of the stairway with a trap-door, and wooden ceiling underneath,	58.00
Total estimated cost,	452.00

These alterations and the estimated cost are approved by the Superintendent of Repairs and Supplies, who has examined into the matter, and I respectfully ask that the Commissioners of the Sinking Fund, authorize me to make them and charge them to the fund authorized by Chapters 45, of the Laws of 1892 and 748 of the Laws of 1894.

Very respectfully,

Charles A. T. Collins

Commissioner of Public Works.

*Department of Public Works,
Commissioners Office.*

150 Nassau Street,

New York,

December 27, 1897

Messrs Peter Duryea and Co.,

12 West Broadway.

Dear Sirs:

I have received your letter of 15th inst., complaining of a hole in the sidewalk on the east side of West Broadway, between Barclay and Vesey Streets.

In reply, I desire to inform you that, as the owner of the property fronting on this sidewalk could not be found, the hole referred to will be filled up and the flags on the sidewalk replaced by a gang of men from the Water Purveyor's Bureau.

Very respectfully,

Amos D. Thomas

Deputy Commissioner of Public Works.

Department of Public Works,
Commissioner's Office.

No. 150 Nassau Street,

New York, Dec. 27th 1897. *189*

Hon. William L. Strong,
Mayor.

Dear Sir:-

I have the honor to inform you that water has been turned on from the new Central Park Reservoir through the west 48-inch main on Fifth Avenue, and that it is now in service from the Reservoir to 10th Street. To-morrow it will be turned on as far south as 4th Street, and to Canal Street during the present week. This will give an additional supply of water to that portion of the City lying between 18th Street and Canal Street, of ten millions of gallons per diem, and incidentally by increasing the pressure of that area the pressure will also be increased above 18th Street and below Canal Street.

Yours very truly,

Charles A. D. Collier

Commissioner of Public Works.

DEPARTMENT OF PUBLIC WORKS,
Office of Consulting Engineer,
No. 150 Nassau Street.

New York, Dec. 28, 1897.

Hon. William L. Strong,

Mayor of the City of New York.

Your Honor:-

In connection with the doubts lately expressed at a meeting of the Board of Estimate and Apportionment as to the wisdom of certain experiments in cleaning that portion of the surface of the 155th Street Viaduct over the Elevated Railway Station, you may wish to know if the money of the City has been judiciously expended.

You will doubtless agree with me that it was my duty to adopt the very best means known for preserving that structure the rapid corrosion of which, you may remember, was called to your attention as early as the fall of 1895.

Recognizing my liability to errors of judgment a copy of the following letter was sent to twenty-three persons who had inspected the operation in question:

Dec. 8, 1897.

Dear Sir:-

As doubts have been expressed as to the judiciousness of the very thorough cleaning by the aid of the sand blast which the Viaduct at 155th Street received before painting, and knowing that you have visited the work, I will be much obliged if you will give me your impression in regard to the judiciousness of the method pursued and its probable success.

With thanks in advance for your kindness in replying, I am,
Respectfully,

(Signed)

Edward P. North,
Consulting Engineer.

To this letter eighteen replies were received all of which are copied below in full, excepting a purely personal paragraph at the close of one:

BALTIMORE AND OHIO RAILROAD

Office of Engineer of Bridges

Baltimore.

December 9, 1897.

Mr. Edward P. North,
Consulting Engineer, Department of Public Works,
New York.

Dear Sir:-

In answer to yours of the 8th inst., will state that during last August I spent a couple of hours examining the operation of the sand blast at 155th Street Viaduct.

This blast so far as I could see, undoubtedly cleaned the iron of all rust, scale and paint most effectively. I know of no more effective method than that pursued, and so far as the success of your operation is concerned, believe that if the work is carried on with the same degree of thoroughness as that done in the writer's presence, the ultimate success of the work will depend solely upon the quality of paint used.

Respectfully,
(Signed) J. E. Greiner,
Engineer of Bridges.

MANHATTAN RAILWAY COMPANY

Chief Engineer's Office.

New York, December 9, 1897.

Mr. Edward P. North,
etc.

Dear Sir:-

In reply to your letter of 8th inst. wishing to know my impression in regard to the judiciousness of the method pursued in the very thorough cleaning, by aid of sand blast, which the Viaduct at 155th Street received before painting, I have to say that knowing

the bad condition that the substructure was in on account of the hot and sulphurous gases from our engines having destroyed the paint and commenced its destructive work on the iron, I think what you have done was wise and judicious.

I would suggest, now that you have done your work so thoroughly, that you try and preserve it by putting up a permanent ceiling secured in place with heavy iron hooks or bolts enamelled where they would be exposed to the gases; and enclose the ends to protect it from storm. Also put a few windows in so that you can see to paint from time to time.

Yours truly,
(Signed) J. Waterhouse,
Chief Engineer.

STREET DEPARTMENT
Street Commissioners' Office,
St. Louis, Mo.

December 10, 1897.

Mr. Edward P. North,
Etc.

Dear Sir:-

Your letter of December 3rd duly received. As you know, during my recent visit to New York I inspected the Viaduct at 155th Street, to see the cleaning by sand blast of said Viaduct, and I must say it is the best system I have seen that will thoroughly clean the iron work, and we are now figuring here to adopt the process.

Very truly yours,
(Signed) Julius Warzburger,
Assistant Street Commissioner

DELAWARE AND HUDSON CANAL COMPANY,

Office of the Chief Engineer,

Albany, N. Y. Dec. 10, 1897.

Mr. Edward P. North,
Etc.

Dear Sir:-

Yours of the 8th inst. in reference to removal of scale and rust from the Viaduct at 155th Street is duly received. After personal observation, it would seem a difficult matter to improve on the results obtained by applying a sand blast for the purpose of cleaning iron work. Even where the surface of the iron was badly pitted, the action of the sand blast thoroughly removed all rust.

Yours truly,
(Signed) R. H. Brown,
Chief Engineer.

ENGINEER'S OFFICE

East River Bridge.

December 10, 1897.

Edward P. North, Esq.,
Etc.

Dear Sir:-

Your favor of the 8th is received. In reply I beg to say that I have twice visited the Viaduct at 155th Street to witness the operation of cleaning by sand blast. This method certainly cleans the metal in all places where the surface can be reached. I do not know of any other process by which it can be done so thoroughly as by the sand blast. I believe that in order to obtain the full value of any paint or coating on metal the surface should be perfectly clean, and that this holds good for a competitive trial of different kinds of paint. I shall watch the result of the experiments with interest and believe that your method is judicious.

Very respectfully, Your obedient servant,
(Signed) L. L. Buck,
Chief Engineer.

OFFICE OF THE CITY ENGINEER,
Albany, N. Y.

Horace Andrews,
City Engineer.

Dec. 10, 1897.

Edward P. North, Esq.,
Etc.

Dear Sir:-

In reply to your letter of the 8th inst. relative to painting of iron work, I would say that I examined the sand blast cleaning at 155th Street with great interest. Twenty years ago I went to Philadelphia and had some zinc sheets cleaned by the sand blast at the works of General Tilghman and also inspected the steam blast then in use for cutting stone, I was therefore sure that the action of the blast would be very effective for cleaning the scale from iron work, and I found the improved appliances at 155th Street were acting with a degree of success that even exceeded my anticipations. From my experience with painting iron work in this city I have become convinced that it is nearly impossible to have structural iron work properly cleaned and painted on the clean iron surface before erecting. This should not be so. But at present the shops do not seem to be properly equipped for cleaning iron work and removing scale and for painting before the rusting has commenced. In the case of a viaduct recently erected in this city all possible care was taken to have the clean metal well painted before it left the shop. A reasonable degree of success was obtained with the main structure, but the railing from the Belmont Iron Works was sent here with a coat

of paint applied to a rusted surface and this railing is now, after little over a year's exposure, a mass of rust while the rest of the structure is in very good condition. I am convinced that money spent in painting a surface not previously cleaned from rust in a thorough manner is wasted and I regard your experiments as being valuable in the highest degree. I considered expenditure made for the purpose of getting a perfectly clean surface on which to paint to be eminently wise, and if success is not found to follow your painting on this clean surface it would be a reasonable deduction that iron work is unsuitable for use in structural work exposed to the action of the elements.

I anticipate that the result of your experiments will be highly successful, if these experiments prove costly it is not more than would be expected from pioneer attempts. I hope that before many years constructors of iron work will awake to the importance of proper cleaning and painting in the shops, and for the cleaning before painting I cannot think of any process that will equal the sand blast in efficiency.

I am,

Very truly yours,

(Signed)

Horace Andrews, M. Am. Soc. C. E.
City Engineer.

LONG ISLAND RAILROAD COMPANY

Long Island City, N. Y. Dec. 10, 1897.

Edward P. North, Esq.,
Etc.

Dear Sir:-

Replying to your favor of the 8th inst. in regard to the cleaning and painting of the 155th Street Viaduct would say that as I understood this experiment was to test the efficiency of different ~~methods~~ metal preservatives paints, I regard the thorough cleaning the metal surface received before the paint was applied necessary for a comparative test, and, if all of the sections received equal attention I predict very instructive results. I am inclined to believe that the cleaner the surface is before painting the longer will be the life of the paint. The results obtained by the use of the sand blast are certainly excellent, though I doubt the practicability of this method for general use. From what I have seen of it I regard the experiment in question fair to all concerned and I will be very much pleased to hear of the final results. I do not see how a comparative test could be made on other than the cleanest possible surface.

Very truly yours,

(Signed)

C. N. Forrest,
Inspector and Chemist.

NEW YORK UNIVERSITY.

Physical Laboratory,
Daniel W. Hering, C. E., Ph. D.
(Professor of Physics.)

University Heights, N.Y., Dec. 10, '97

Mr. Edward P. North,
Etc.

Dear Sir:-

As to the judiciousness of the work at the 155th Street Viaduct there are points upon which I am not qualified to speak. I have no hesitation, however, in expressing my opinion regarding the work itself, to this purpose, viz:

First, the structure is important enough and valuable enough to be well cared for.

Second, it had reached such a condition as to make cleaning and re-covering of the metal imperatively necessary.

Third, being so important and valuable the best method of protection is not too good for it.

Fourth, no method of cleaning the iron that I know of is at all to be compared with the sand blast as I saw it used, for effectiveness and availability.

Whether there are financial or other reasons for calling the use of this method injudicious, I do not know. My interest lay chiefly in the use of compressed air, and in the scouring action of the sand blast. The latter is very thorough without necessarily injuring the material that is cleaned.

Very truly yours,

(Signed)

D. W. Hering,

THE NEW YORK, NEW HAVEN AND HARTFORD RAILROAD COMPANY.

New Haven, Ct. Dec. 10, 1897.

Edward P. North, Esq.,
Etc.

Dear Sir:-

Yours of December 8th asking for my impression as to the judiciousness of the cleaning of the 155th Street Viaduct by the sand blast is received and I take pleasure in replying.

I had the privilege of visiting the works while the sand blast operations were progressing on that portion of the structure which is above the station of the Elevated Railroad and was greatly impressed, first by the large amount of corrosion which had taken place and then by the complete thoroughness with which the sand blast did its work of cleaning the surface of the steel work. I have seen no method of cleaning which compared at all with the effectiveness of the sand blast which appears to get into all the corners and angles

and to leave the steel work perfectly clean from any particle of dirt and rust and in the very best possible condition for receiving the paint.

The condition of the structure was such that I believe it would have been impossible to clean it satisfactorily by scraping and of course to paint over a surface from which the rust has been only partially removed is of hardly any use in arresting the progress of corrosion.

It appears to me that radical measures for cleaning were necessary in order to preserve the structure and that the sand blast presented by far the most effective means to this end and I think that this thorough cleaning when followed immediately by the application of a good and durable paint should be the means of preserving the structure for many years.

Yours truly,

(Signed)

W. H. Moore,

Engineer of Bridges.

New York, December 10, 1897.

Edward P. North, Esq.,
Etc.

My dear Sir:-

I have had occasion during the past six months to examine critically several times, the work which was being done on the Viaduct at 155th Street. I do not remember ever seeing structural iron work in a more corroded or rusted condition. In some places there were superimposed flakes of rust to the extent of almost a quarter of an inch. It seemed possible that some of the iron work might have been weakened by this excessive rusting. To have simply painted the structure while it was in this condition would have been useless. The paint would not have remained on such an accumulation of rust nor would it have prevented the continuation of the rusting under the paint. It seemed to be a hopeless piece of work up to the time when the sand blast was used to take off the rust. This it did much more effectively than I had supposed it could. In fact after the blast had been applied the iron presented a white metallic surface absolutely free from rust. In no other way could this have been done. The only other method that I know of for removing rust is with steel brushes. This is an expensive method and is also unsatisfactory as they never remove all the rust. This is especially true for places where the brushes cannot reach, such as angles and the narrow spaces between plates. I have never before heard of the sand blast being used for removing rust, except in one case. This was where it was used to remove the rust and dirt from the inside of an iron ship.

While your work was experimental and many difficulties had to be overcome, yet the results were eminently successful. The work has been of such interest that it has been described in many of our scientific journals and has attracted much attention in proof of which I would say that I have already received communications from the

Public Works Department of Buffalo and of Philadelphia regarding the method used in painting the Viaduct, I have given twenty years to the study of paints and painting and have never seen a piece of work of this kind carried out more carefully or more scientifically. I am,

Yours very truly,

(Signed)
101 Fulton Street.

J. W. Drummond, E. M., Ph. D.

PHILADELPHIA, WILMINGTON AND BALITMORE RAILROAD COMPANY.

Philadelphia, 12-11-97.

Mr. Edward P. North,
Etc.

Dear Sir:-

Your letter of 8th inst. at hand. I was very much interested in the work which I saw at the 155th Street Viaduct.

It has been universally admitted that iron or steel should be perfectly clean before applying a preservative coating, and the further I have investigated the subject, the more convinced I am of the correctness of that assumption.

The only criticism that I have to make on the work as I saw it, was the possibility of the operator continuing his blast too long and thereby cutting away some of the metal as well as the old paint film and scale.

With that exception I thought the process a very thorough, and much more satisfactory than the ordinary hand scraping such a structure receives at the hands of the workmen on repainting.

Yours etc.,

(Signed)

George Tatnall,
Assistant Engineer.

THE NEW YORK, NEW HAVEN AND HARTFORD RAILROAD COMPANY.

Civil Engineer's Department.

Providence, R. I., Dec. 11, 1897

Mr. Edward P. North,
Etc.

Dear Sir:-

In response to yours of December 8th as to the judiciousness of the very thorough cleaning by the aid of the sand blast at the Viaduct at 155th Street, N. Y. City, will say that on the occasion of my visit to the work, I was of course strongly and favorably impressed with the thoroughness of the work, so far beyond any usual method by scraping or wire brushes etc.,

I should think the method could in ordinary situations, be got to such a commercial basis as to cost, that there would be no

doubt of its being entirely judicious and warranted on structures liable to remain undisturbed by reason of changes etc. On ordinary railroad bridges, while of course believing in good care and thorough painting, a large proportion of these have been thrown out of service in the past because of increase of loading etc. or for other reasons, so that their useful life could not have been much, if any, prolonged, even by the very best preservative methods as to scraping and painting. In the particular case you have in hand, I presume the future success will now depend almost entirely on the value of the paint applied to the thoroughly cleaned surface, and I can hardly prophesy as to that, but any kind of paint should prove more than twice as durable and valuable on the prepared surface you gave it as on surfaces as ordinarily applied.

Yours truly,

(Signed)

E. P. Dawley,

CITY OF BOSTON
Engineering Department,
50 City Hall.

Dec. 13, 1897.

Mr. Edward P. North,
Etc.

Dear Sir:-

In answer to yours of the 8th inst. would say that in my opinion, it was necessary to thoroughly clean the metal work at the 155th Street Viaduct before repainting, and that the sand blast used did this very successfully.

If the painting was done before the cleaned metal became rusted, I think the success of the method pursued will be limited only by the endurance of the paints applied.

Yours truly,

(Signed)

John E. Cheney,

Assistant Engineer.

BOSTON AND MAINE RAILROAD
Engineer Department.

H. Bissell, Chief Engineer.

Boston, Mass., Dec. 13, 1897.

Mr. Edward P. North,
Etc.

Dear Sir:-

As to the judiciousness of the very thorough cleaning by the aid of the sand blast which the Viaduct at 155th Street received:- I see but two objections, one is the cost and the other is that the process may cut away material seriously.

While the process is costly it does the work so thoroughly

that I think it pays. As to the cutting away the material and the reduction of area, it is considerable but as to how serious I have not been able to determine. I am hoping that we can give the process a thorough trial.

Yours truly,

H. Bissell,

Chief Engineer.

Note:-- It has been ascertained that this cutting away could not exceed one .04 inch per minute.

CITY COMMISSIONER'S OFFICE,
Baltimore, Md.

December 13, 1897.

Mr. Edward P. North,
Etc.

Dear Sir:-

Your favor of the 8th inst. requesting my opinion of the judiciousness of the method pursued cleaning the Viaduct at 155th Street by means of sand blast, received, and I crave your permission to reply at some length.

The appropriations for the maintenance of bridges in Baltimore for some years past having been very small, no painting has been done, consequently, quite a number of the bridges are sadly in need of paint, one particularly, Argyle Avenue Bridge, over the Pennsylvania Railroad, concerning which we spoke to you when we visited the 155th Street Viaduct. This bridge is situated between the portals of two tunnels and so close to one portal that the smoke coming from the tunnel frequently envelops the bridge; also, all locomotives of trains going west which stop at Pennsylvania Avenue Station, stand immediately under this bridge, and since the engineman fire up preparatory to the trip through the next tunnel, the escaping gases and steam have played havoc with all members of the structure, which has not been painted since erection, twenty years ago. The wooden floor being in very bad condition and having to be renewed, we removed it entirely before the cleaning of the trusses began so that access could be obtained to all members of the structure. The scale on this bridge was over 1-4 inch thick, and the iron and steel were pitted to a depth of 1-32 inch to 1-16 inch; the cross-section of web of floor-beams was reduced fully 1-16 inch, and the other members to as great an extent. One thing which was especially noted was the fact that the erection numbers painted on the floor beams were distinct, and when the paint was scraped away, the iron was perfectly clean. Unfortunately, it was impossible to discover the kind of paint used, but it was presumably white lead. Chipping hammers, steel scrapers and brushes were used to clean this bridge, the labor for which cost about 5 cents per square foot, but I do not

consider the result satisfactory. We had much difficulty to have the laborers clean the iron thoroughly, for they were too prone to slight the work so as to seem to accomplish much rather than to obtain the best results; which fact militates greatly against cleaning by scraping, etc.

Whilst this work was in progress I visited the 155th Street Viaduct, where the sand blast was in operation, and returned feeling thoroughly dissatisfied with our efforts, and convinced that the sand blast should be used for cleaning structures, so favored the purchase of a plant.

So little care is really taken to properly clean iron in the shops before the first coat of paint is applied, that frequently corrosion begins before the paint is applied, producing the results with which bridge engineers are so familiar; and since there are so many inferior paints used, it is not strange that they peel off and crack, and allow corrosion rather than prevent it.

To preserve a structure and obtain the full amount of use from it, it is necessary that it be kept free from rust by some method, and too much care cannot be taken for its preservation; it is not sufficient, as the layman ordinarily considers, to erect a structure and then leave it alone; but frequent ^{painting} is absolutely necessary, how frequent depends upon the conditions to which the structure is subjected and the preservative used. In the past, hammers, scrapers, brushes, etc. have been used for cleaning structures, but results have proved unsatisfactory; and I cannot too heartily recommend the use of sand blast on structural iron before the first coat of paint is applied in the shops, and upon structures which are to be cleaned preparatory to painting.

Truly, etc.,

Layton F. Smith, Asst. Engineer in
Charge of Bridges.

PHILADELPHIA AND READING RAILWAY COMPANY
Office of the Chief Engineer,
Reading Terminal.

Philadelphia, Dec. 14, 1897.

Mr. Edward P. North,
Etc.

Dear Sir:-

Answering yours of 8th inst.:- I have not formed an opinion as to the probable success of cleaning metal for sand blasting previous to painting, when the metal is exposed to fumes from locomotives.

I believe some one has stated that metal so treated rusts more rapidly after the fumes have once penetrated the paint, than if not sand blasted. I think this is possible.

We are making a test of the matter in our train shed. Two rusted sheets of iron were taken, one-half of each cleaned with the

sand blast and the entire sheet painted, one with graphite paint and the other with oxide of iron. These will be exposed one year, unless marked results are obtained sooner.

Yours truly,

(Signed)

W. N. Riegner.

Engineer of Bridges.

THE ERIE AND WESTERN TRANSPORTATION COMPANY.

Buffalo, N. Y., Dec. 15, 1897.

Mr. Edward P. North,

Etc.

Dear Sir:-

Replying to your letter of the 8th inst. in relation to cleaning the 155th Street Viaduct by the aid of a sand blast process.

Taking into consideration the nature of the structure and the excellent work done by the aid of this process, I should consider it was a judicious investment to clean the Viaduct in this manner, providing the cost of doing so was not too great. The success of this operation would depend greatly upon the kind of paint used in covering the surfaces after cleaning.

Yours truly,

(Signed)

Charles F. Strasmer,

Superintendent of Repairs.

DEPARTMENT OF PUBLIC WORKS

Philadelphia, Dec. 15, 1897.

E. P. North, Esq.,

Etc.

Dear Sir:-

In reply to your letter in reference to the use of the sand blast in cleaning the metal work under your charge, I would state that my experience and observation in the line of paint on metal structures have led me to the following conclusions -- Where a structure has become corroded, it is essential that all rust be thoroughly removed before the application of new paint. Scrapers and steel brushes do this, but imperfectly, and the irregularities, and frequent inaccessible surfaces caused by structural connections, render it practically impossible by such methods, without an expenditure of time and labor which would ordinarily be considered prohibitory. There is no question but that the portion of the 155th Street Viaduct over the Manhattan Elevated Railroad tracks had reached a condition requiring prompt and thorough treatment. Cleaning by the usual methods would have been very costly, and at the best unsatisfactory. The cleaning done by the sand blast as far as the

work had progressed at the date of my inspection, was admirable and complete, leaving the naked metal surface entirely clear, as could not be done by the processes usually applied.

There can be no question as to the comparative results of the sand blast and the usual appliances. It is to be expected that experience in the appliance of the sand blast will result in lessening the cost of application. Doubtless the cost of the usual hand manipulation of scraper, brush and chisel to produce any approach to the thoroughness of the sand blast, would now cost far more.

In conclusion I would state that for the foregoing reasons I believe the use of the sand blast was judicious, and in accordance with an appreciation of the importance of dealing thoroughly with the question of metal coatings, which has ~~not~~ only within a recent period begun to receive the attention its importance demands.

Truly yours,

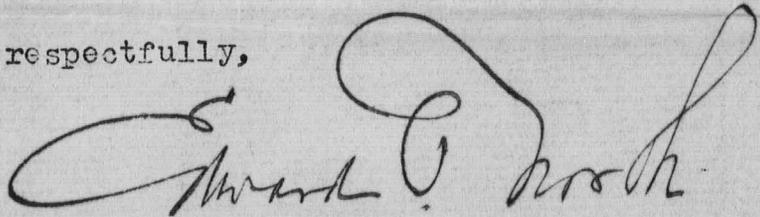
(Signed)

Charles M. Mills,

Assistant Engineer in Charge
of Gray's Ferry Bridge.

From the above I think you will see that the most charitable opinion of the criticisms above referred to is that they were founded on gross ignorance of the subject.

Very respectfully,



Consulting Engineer.

a/

Department of Public Works,
Commissioner's Office,

No. 150 Nassau Street,

New York, December 9, 1897

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

Dear Sir:

I have the honor to enclose herewith, for your information, copy of an additional permit issued to the Tubular Dispatch Company November 22nd, 1897, to open certain streets in this City and to lay therein pneumatic tubes or pipes of iron for the transmission of mail and other matter between the United States Public Stores and the Custom House, pursuant to the provisions of Chapter 420 of the Laws of 1874 and Chapter 977 of the Laws of 1895; the terms of said permit being identical with those of the permits issued June 14th, 1897, and July 8th, 1897; and containing in sub-division 16, provision that the Commissioner of Public Works may revoke the permit in case of violation of its terms and conditions, and that, as a consideration for the permit, the Tubular Dispatch Company shall pay into the City Treasury, to the credit of the Sinking Fund, one per cent of their gross receipts for the first 12 months after the commencement of the use of any portion of the pneumatic tubes; one and one-half per cent of their gross receipts for the next succeeding 12 months, and two per cent of their gross receipts for each succeeding year thereafter.

Very respectfully,

Amos D. Thomas

Deputy Commissioner of Public Works.

Enclosure.

DEPARTMENT OF PUBLIC WORKS

PERMIT ISSUED BY THE DEPARTMENT OF PUBLIC WORKS OF THE CITY OF NEW YORK TO TUBULAR DISPATCH COMPANY.

DEPARTMENT OF PUBLIC WORKS, COMMISSIONER'S OFFICE, No. 150 NASSAU STREET, NEW YORK, November 22, 1897.

PERMISSION IS HEREBY GIVEN TO THE Tubular Dispatch Company, a corporation organized and existing under the Laws of the State of New York, to take up the pavements and to excavate portions of the streets, and to lay down, construct and maintain two pneumatic tubes or pipes of iron (not exceeding nine inch bore and thirteen inch flange) and appurtenances under the streets, for the transmission of mail and other matter in and through said tubes or pipes under and pursuant to the provisions of Chapter 400 of the Laws of 1874, and Chapter 97 of the Laws of 1895, between the United States Public Stores occupying the block bounded by Christopher, Greenwich, Barrow and Washington Streets and the United States Custom House at the southeast corner of Wall and William Streets, as follows:

1. The construction and maintenance of said pneumatic tubes or pipes shall be subject to the terms, conditions and obligations imposed by the charter of said company and by the Laws of the State of New York and ordinances of the City of New York heretofore or hereafter enacted or adopted.

2. The laying or construction of said pneumatic tubes or pipes and appurtenances shall be so prosecuted as to cause as little inconvenience to public travel as practicable, and as may be directed by the Commissioner of Public Works, and so as not to interfere with the water mains or service connections, or with the sewers or house connections, or with the subways or subway connections, in any of said streets, nor with such connections hereafter to be made.

3. Whenever water-mains, or sewers, or connections therewith, or other impediment are encountered, the work at such points shall be stopped until proper plans and specifications are prepared and submitted to and approved by the Commissioner of Public Works for necessary changes, for protection of the same, and to clear the impediment thereof, in the plan for laying said pneumatic tubes or pipes, before entering on the work.

4. The trench or excavation for said pneumatic tubes or pipes may be four feet wide and from three to seven feet deep; and immediately after said tubes or pipes shall be laid said trench or excavation shall be filled with clean earth, well and thoroughly rammed while being put in, and the pavement shall be immediately replaced in a good and workmanlike manner, and to the entire satisfaction of the Commissioner of Public Works, and in all respects in accordance with the plans and specifications thereof of the Department of Public Works, and shall be so maintained by said Company for two years after such pavements shall have been relaid; and the necessary materials and the labor for all said work shall be furnished by and at the expense of said Company.

5. In case said Company shall fail or neglect to so replace the pavement, or to so maintain the same for two years, then the Commissioner of Public Works or his successor in authority in reference thereto, after a lapse of forty-eight hours' notice served on any of the agents or employees of said Company, shall make such repairs as he finds necessary, and the said Company shall pay, on demand, to the Department of Public Works, or its successor in authority in reference thereto, all costs incurred for labor and material in making such repairs.

6. The said Company shall place sufficient and proper guards for the prevention of accidents, and shall put up and keep at night suitable and sufficient lights, and they shall indemnify and save harmless the City of New York, its officers, agents and servants, against and from all damages, costs and expenses which they may suffer or to which they may be put by reason of any injury to the person or property of any her, resulting from carelessness or negligence on the part of said Company.

7. The said Company shall immediately remove from the line of work all surplus materials, earth, sand, rubbish and stones, as rapidly as the work progresses.

8. The work shall be carried on only in such places and for such distances in each street as the Commissioner of Public Works or his representatives shall from time to time designate; but the said Company shall prosecute the work with all necessary force of labor at such times and places as said Commissioner may from time to time require.

9. All the frames and heads and manholes or other places for access to said tubes, or pipes placed on the line of the work, shall have noisless covers and plates.

10. All the work, from the time the excavation shall be commenced to the time the pavement shall be relaid, shall be under the supervision of inspectors, who shall be appointed by and receive their instructions from the Commissioner of Public Works, and whose salary shall be paid by said Company.

11. If any contractor, foreman, mechanic or laborer shall be insolent or negligent in carrying out any instructions, or if any contractor or laborer shall be negligent in the execution of any work, the same shall be forthwith discharged; and not re-employed on the work, without the consent of the Commissioner of Public Works. A notice or order given to any contractor or foreman in charge of any of the work shall be considered a notice or order to the said Company.

12. Whenever, in consequence of the weather, or any process of law, or other unexpected obstacle, the work of laying said pneumatic tubes or pipes shall be stopped for so long a time that the public travel shall be obstructed, the street shall immediately be refilled and repaved by said Company, upon notice or order from the Commissioner of Public Works, as if the work contemplated in this permit was actually completed.

13. The said Company shall give forty-eight hours' notice to the Water Purveyor of their desire to commence work at any point, and shall not disturb the pavement, commence work, or deposit material anywhere until the inspectors are on the grounds to give the necessary instructions, and shall apply twenty-four hours in advance to the General Inspector for separate permit for each section to be opened.

14. The said Company shall give the Health Department twenty-four hours' notice of the time and place of making excavations under which sectional permit issued from the Department of Public Works, and the said Company shall provide and use such disinfectants as and when required by the Health Department.

15. If the said Company, their contractor or agent, shall refuse or neglect to carry out any of the provisions and requirements of this permit, or of the Laws of the State of New York, or ordinances of the City of New York, in reference to said work, the Commissioner of Public Works shall have the right and power to do the same at the cost and expense of said Company, which

said Company hereby agrees to pay to the Department of Public Works upon demand.

16. The Commissioner of Public Works reserves the right to revoke this permit in case of any violation of its terms and conditions, or of any Laws of the State of New York, or ordinances of the City of New York.

In consideration of the permission hereby given, the said Tubular Dispatch Company, their successors or assigns, shall keep an accurate account of their gross receipts and shall report the same to the Comptroller of the City of New York in writing, under oath of their President or Treasurer, annually, on or before the first day of February of each year for the preceding calendar year; and also, at the time of making report of receipts as aforesaid, shall pay into the Treasury of the City of New York, to the credit and for the benefit of the Sinking Fund thereof, one per centum of their gross receipts for the first twelve months after the commencement of the use of any portion of said pneumatic tubes or pipes for transmission of mail or other matter, one and one-half per centum of their gross receipts for the next succeeding twelve months, and two per centum of their gross receipts for each succeeding year thereafter. At the said Company, their successors or assigns, shall, whenever required by the said Comptroller, execute such further assurance of their obligation for payment of the percentage of their gross receipts as aforesaid as the Comptroller of the Corporation of the City of New York may devise and advise in the interests of the City of New York.

It is made a condition of the issuance of this permit that its acceptance, in all its terms, conditions and provisions, is attested hereunder by the President and Secretary of the Tubular Dispatch Company, and certificate of such acceptance and agreements, in resolution of the Board of Directors and provisions, by resolution of the Board of Directors of said Company, shall be filed with the Commissioner of Public Works, and that thereupon this permit shall take effect.

(Signed) HOWARD FAYSON WILDS, Deputy and Acting Commissioner of Public Works.

The foregoing permit, in all of its terms, conditions and provisions, is hereby accepted by the Tubular Dispatch Company, which agrees to all the terms, conditions and provisions thereof.

In attestation whereof the Tubular Dispatch Company has hereto caused its seal to be affixed and its acceptance to be executed by its President and Secretary, this 29th day of November, 1897.

(Corporate Seal.)

(Signed) TUBULAR DISPATCH COMPANY, by Jno. E. MILHOLLAND, President; ROBERT J. FOX, Secretary.

State of New York, City and County of New York, ss. On this second day of December, 1897, before me, the undersigned, a notary public of the State of New York, in and for the County of New York, personally came Robert J. Fox, known to me to be the Secretary of the Tubular Dispatch Company, the corporation described in and which executed the foregoing acceptance, who being by me duly sworn, did depose and say that he resides in the said City and County of New York; that he is the Secretary of the Tubular Dispatch Company, and knows the corporate seal thereof; that the seal affixed to the foregoing acceptance is the corporate seal of said Company and was thereto affixed by order of the Board of Directors of the said Company, and that he signed his name thereto by the like order as Secretary of said Company; and further, that deponent is acquainted with John E. Milholland, and knows him to be the President of said Company; that the signature of the said John E. Milholland subscribed to the foregoing acceptance is in the genuine handwriting of the said John E. Milholland, and was thereto subscribed by the like order of said Board of Directors, and in presence of said deponent.

In witness whereof, I have hereto set my hand and seal the day and year first above written.

(Notarial Seal, No. 120.)

(Signed) FRÉDÉRIC C. WOODWARD, Notary Public, New York Co., N. Y.

Certificate of Acceptance of the Permit of the Department of Public Works, dated November 22nd, 1897, by the Tubular Dispatch Company.

A permit having been issued by Howard Payson Wilds, Deputy and Acting Commissioner of Public Works, of the City of New York, dated November 22, 1897, to the Tubular Dispatch Company, to take up the pavements and to excavate portions of the streets, and to lay down, construct and maintain two pneumatic tubes or pipes of iron under the streets, for the transmission of mail or other matter under and pursuant to the provisions of Chapter 400 of the Laws of 1874, and Chapter 97 of the Laws of 1895, along the line of certain streets therein designated between Christopher, Greenwich, Barrow and Washington Streets, and the United States Custom House, at the Southeast corner of Wall and William streets; upon certain terms, conditions and provisions, including as follows:

In consideration of the permission hereby given, the said Tubular Dispatch Company, their successors or assigns, shall keep an accurate account of their gross receipts, and shall report the same to the Comptroller of the City of New York, in writing, under oath of their President or Treasurer, annually, on or before the first day of February of each year for the preceding calendar year; and also at the time of making the report of receipts as aforesaid, shall pay into the Treasury of the City of New York, to the credit and for the benefit of the Sinking Fund thereof, and one per centum of their gross receipts for the first twelve months after the commencement of the use of any portion of said pneumatic tubes or pipes for the transmission of mail or other matter, one and one-half per centum of their gross receipts for the next succeeding twelve months, and two per centum of their gross receipts for each succeeding year thereafter. And the said Company, their successors or assigns, shall, whenever required by the said Comptroller, execute such further assurance of their obligation for payment of the percentage of their gross receipts as aforesaid, as the Comptroller of the Corporation of the City of New York may devise and advise in the interests of the City of New York.

It is made a condition of the issuance of this permit that its acceptance, in all its terms, conditions and provisions, is attested hereunder by the President and Secretary of the Tubular Dispatch Company, and certificate of such acceptance and agreements, in resolution of the Board of Directors and provisions, by resolution of the Board of Directors of said Company, shall be filed with the Commissioner of Public Works; and that thereupon this permit shall take effect.

The Tubular Dispatch Company, pursuant to the resolution of its Board of Directors, hereby certifies and declares that it accepts the said permit with all its terms, conditions and provisions, and agrees to all the terms, conditions and provisions of the said permit and directs that this Certificate be executed on behalf of the Tubular Dispatch Company, under the seal of said Company, by its President and Secretary.

(Corporate Seal.)

(Signed) TUBULAR DISPATCH COMPANY, by Jno. E. MILHOLLAND, President; ROBERT J. FOX, Secretary.

State of New York, City & County of New York, ss. On this second day of December, 1897, before me, the undersigned, a notary public of the State of New York, in and for the County of New York, personally came Robert J. Fox, known to me to be the Secretary of the Tubular Dispatch Company, the corporation described in and which executed the foregoing certificate of acceptance, who being by me duly sworn, did depose and say: that he resides in the said City and County of New York; that he is the Secretary of the Tubular Dispatch Company and knows the corporate seal thereof; that the seal affixed to the foregoing certificate of acceptance is the corporate seal of said Company, and was thereto affixed by order of the Board of Directors of said Company; and that he signed his name thereto by the like order as Secretary of said Company; and further, that deponent is acquainted with John E. Milholland and

knows him to be the President of said Company; that the signature of said John E. Milholland subscribed to the foregoing certificate of acceptance is in the genuine handwriting of said John E. Milholland and was thereto subscribed by the like order of the said Board of Directors, and in the presence of said deponent.

In witness whereof, I have hereto set my hand and seal the day and year first above written.

(Signed) FRÉDÉRIC C. WOODWARD, Notary Public, New York Co., N. Y.

(Notarial Seal, No. 120.)

COMMISSIONER'S OFFICE, No. 150 NASSAU STREET, NEW YORK, December 4, 1897.

TO CONTRACTORS.

BIDS OR ESTIMATES, INCLOSED IN A sealed envelope, with the title of the work and the name of the bidder indorsed thereon, also the number of the work as in the advertisement, will be received at No. 150 Nassau street, corner of Spruce street, in the Chief Clerk's office, Room No. 1704-7, until 12 o'clock on Wednesday, December 15, 1897. The bids will be publicly opened by the head of the Department, in basement, at No. 150 Nassau street, at the hour above mentioned.

No. 1. FOR REGULATING AND PAVING WITH ASPHALT PAVEMENT, ON THE PRESENT ASPHALT PAVEMENT, THE CARRIAGEWAY OF OLIVER STREET, from Cherry to Madison street.

No. 2. FOR REGULATING AND PAVING WITH ASPHALT PAVEMENT, ON THE PRESENT ASPHALT PAVEMENT, ON THE CARRIAGEWAY OF PELL STREET, from Bowers to Mott street.

No. 3. FOR REGULATING AND PAVING WITH ASPHALT PAVEMENT, ON THE PRESENT ASPHALT PAVEMENT, ON THE CARRIAGEWAY OF TWENTY-FIRST STREET, from Eighth to Tenth avenue, where not within the limits of grants of land under water.

No. 4. FOR REGULATING AND PAVING WITH ASPHALT PAVEMENT, ON THE PRESENT ASPHALT PAVEMENT, THE CARRIAGEWAY OF TWENTY-FIRST STREET, from Ninth to Tenth avenue, so far as the same is within the limits of grants of land under water.

No. 5. FOR REGULATING AND PAVING WITH ASPHALT PAVEMENT, ON THE PRESENT ASPHALT PAVEMENT, THE CARRIAGEWAY OF THIRTY-FOURTH STREET, from Eighth to Ninth avenue.

No. 6. FOR REGULATING AND PAVING WITH ASPHALT PAVEMENT, ON THE PRESENT ASPHALT PAVEMENT, THE CARRIAGEWAY OF FORTY-THIRD STREET, from Eighth to Ninth avenue.

No. 7. FOR REGULATING AND PAVING WITH ASPHALT PAVEMENT, ON THE PRESENT ASPHALT PAVEMENT, THE CARRIAGEWAY OF FORTY-NINTH STREET, from Ninth to Tenth avenue.

No. 8. FOR REGULATING AND PAVING WITH ASPHALT PAVEMENT, ON THE PRESENT ASPHALT PAVEMENT, THE CARRIAGEWAY OF SEVENTY-SECOND STREET, from Fifth to Madison avenue.

No. 9. FOR REGULATING AND PAVING WITH MACADAM AND ASPHALT-BLOCK PAVEMENT, THE ROADWAY OF BOULEVARD LAFAYETTE, from the macadam pavement now laid on Eleventh avenue or the Boulevard, to the north side of One Hundred and Fifty-eighth street, extending from the easterly curb-line to the centre of said avenue, AND SET CURB STONES AND FLAG SIDEWALK.

No. 10. FOR REGULATING AND PAVING WITH ASPHALT PAVEMENT, ON THE PRESENT ASPHALT PAVEMENT, ON THE INTERSECTION OF THIRTY-FOURTH STREET AND PARK AVENUE.

No. 11. FOR REGULATING AND PAVING WITH ASPHALT-BLOCK PAVEMENT, ON CONCRETE FOUNDATION, THE CARRIAGEWAY OF TWENTY-FOURTH STREET, from Madison to First avenue.

No. 12. FOR COMPLETING UNFINISHED ALTERATION AND IMPROVEMENT TO SEWERS IN TWENTY-ETH STREET, between Ninth and Eleventh avenues; IN ELEVENTH AVENUE, between Twentieth and Twenty-third streets, AND IN TWENTY-FIRST AND TWENTY-SECOND STREETS, between Tenth and Eleventh avenues.

No. 13. FOR SEWERS IN ONE HUNDRED AND EIGHTH STREET, between Amsterdam avenue and Kingsbridge road, WITH CURVES AT AUDUBON AND WADSWORTH AVENUES.

Each bid or estimate shall contain and state the name and place of residence of each of the persons making the same, the names of all persons interested with him therein, and if no other person be so interested it shall distinctly state that fact; that it is made without any connection with any other person making an estimate for the same purpose, and is in all respects fair and without collusion or fraud, and that no member of the Common Council, head of a department, chief of a bureau, deputy thereof, or clerk thereof, or other officer of the Corporation, is directly or indirectly interested therein, or in the supplies or in the work to which it relates, or in any portion of the profits thereof.

Each estimate must be verified by the oath, in writing, of the party making the same, that the several matters therein stated are true, and must be accompanied by the consent, in writing, of two householders or freeholders in the City of New York, to the effect that if the contract is awarded to the person making the estimate, they will, upon its being so awarded, become bound as his sureties or neglect to execute the same, that if he shall refuse or neglect to execute the same, they will pay to the Corporation any difference between the sum to which he would be entitled upon its completion, and that which whom the contract shall be awarded at any subsequent letting, the amount to be calculated upon the estimated amount of the work by which the bids are tested.

The consent last above mentioned must be accompanied by the oath or affirmation, in writing, of each of the persons signing the same, that he is a householdholder in the City of New York, and is worth the amount of the security required for the completion of the contract, over and above all his debts of every nature and over and above his liabilities as bail, surety, or otherwise, and that he has offered himself as surety in good faith, with the intention to execute the bond required by law.

No estimate will be considered unless accompanied by either a certified check upon one of the State or National banks of the City of New York, drawn to the order of the Comptroller, or money to the amount of five per centum of the amount of the security required for the faithful performance of the contract. Such check or money must not be inclosed in a sealed envelope containing the estimate, but must be handed to the officer or clerk of the Department who has charge of the estimate-book, 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 the deposit will be returned to him.

THE COMMISSIONER OF PUBLIC WORKS RESERVES THE RIGHT TO REJECT ALL BIDS RECEIVED FOR ANY PARTICULAR WORK IF HE DEEMS IT FOR THE BEST INTERESTS OF THE CITY.

PERMIT ISSUED BY THE DEPARTMENT OF PUBLIC WORKS OF THE CITY OF NEW YORK TO TUBULAR DISPATCH COMPANY.

OFFICE NO. 150 NASSAU STREET, NEW YORK, NOVEMBER 22, 1897.

PERMISSION IS HEREBY GIVEN TO THE Tubular Dispatch Company, a corporation organized and existing under the Laws of the State of New York, to take up the pavements and to excavate portions of the streets, and to lay down, construct and maintain two pneumatic tubes or pipes of iron (not exceeding nine inch bore and thirteen inch flange) and appurtenances under the streets, for the transmission of mail and other matter in and through said tubes or pipes under and pursuant to the provisions of Chapter 400 of the Laws of 1874, and Chapter 977 of the Laws of 1895, between the United States Public Stores, occupying the block bounded by Christopher, Greenwich, Barrow and Washington Streets and the United States Custom House, at the southeast corner of Wall and William Streets, as follows:

Beginning at the United States Public Stores, thence along Greenwich street nine feet east of the west curb line to the southerly side of Fulton Street, thence across and along Greenwich Street eight feet west of the east curb line to Cedar Street; thence across and along Cedar Street five feet north of the south curb line to William Street, thence across and along William Street ten feet east of the west curb line to and into the United States Custom House at the corner of Wall and William Streets.

This permit is granted and accepted subject to the construction and maintenance of said pneumatic tubes or pipes from the Appraisers' Public Stores to the United States Custom House in accordance with the plans thereof filed by said Tubular Dispatch Company upon Public Works, and such modifications of said plans as have been or may be required by the Commissioner of Public Works, as indicated by the foregoing route for laying said tubes or pipes; and also subject to the following provisions, conditions and provisions, besides such further provisions and restrictions as may be hereafter from time to time imposed by the Commissioner of Public Works in the public interests:

1. The construction and maintenance of said pneumatic tubes or pipes shall be subject to the terms, conditions and obligations imposed by the charter of said company and by the Laws of the State of New York and ordinances of the City of New York heretofore or hereafter enacted or adopted.

2. The laying and construction of said pneumatic tubes or pipes and appurtenances shall be so prosecuted as to cause as little inconvenience to public travel as practicable, and as may be directed by the Commissioner of Public Works, and so as not to interfere with the water mains or service connections, or with the sewers or house connections, or with the subways or subway connections, in any of said streets, nor with such connections hereafter to be made.

3. Wherever water-mains, or sewers, or connections therewith, or other impediment are encountered, the work at such points shall be stopped until proper plans and specifications are prepared and submitted to and approved by the Commissioner of Public Works for necessary changes, for protection of the same, and to clear the impediment thereof, in the plan for laying said pneumatic tubes or pipes, before entering on the work.

4. The trench or excavation for said pneumatic tubes or pipes may be four feet wide and from three to seven feet deep; and immediately after said tubes or pipes shall be laid said trench or excavation shall be filled with clean earth, well and thoroughly rammed while being put in, and the pavement shall be immediately replaced in a good and workmanlike manner, and to the entire satisfaction of the Commissioner of Public Works, and in all respects in accordance with the plans, and specifications thereof of the Department of Public Works, and shall be so maintained by said Company for two years after such pavement shall have been relaid; and the necessary materials and the labor for all said work shall be furnished by and at the expense of said Company.

5. In case said Company shall fail or neglect to so replace the pavement, or to so maintain the same for two years, then the Commissioner of Public Works or his successor in authority in reference thereto, after a lapse of forty-eight hours, notice served on any of the agents or employees of said Company, shall make such repairs as he finds necessary, and the said Company shall pay, on demand, to the Department of Public Works, or its successor in authority in reference thereto, all costs incurred for labor and material in making such repairs.

6. The said Company shall place sufficient and proper guards for the prevention of accidents, and shall put up and keep at night suitable and sufficient lights, and they shall indemnify and save harmless the City of New York, its officers, agents and servants, against and from all damages, costs and expenses which they may suffer or to which they may be put by reason of any injury to the person or property of any her, resulting from carelessness or negligence on the part of said Company.

7. The said Company shall immediately remove from the line of work all surplus materials, earth, sand, rubbish and stones, as rapidly as the work progresses.

8. The work shall be carried on only in such places and for such purposes in each street as the Commissioner of Public Works, or his representative, shall from time to time designate; but said Company shall prosecute the work with all necessary force of labor at such times and places as said Commissioner may from time to time require.

9. All the frames and heads and manholes or other places for access to said tubes or pipes placed on the line of the work, shall have noiseless covers and plates.

10. All the work, from the time the excavation shall be commenced to the time the pavement shall be relaid, shall be under the supervision of inspectors, who shall be appointed by and receive their instructions from the Commissioner of Public Works, and whose salary shall be paid by said Company.

11. If any contractor, foreman, mechanic or laborer shall be insolvent, or negligent in carrying out any instructions given by any properly authorized representative of the Department of Public Works, he shall be forthwith discharged; and not re-employed on the work without the consent of the Commissioner of Public Works. A notice or order given to any contractor of foreman in charge of any of the work shall be considered a notice or order of the said Company.

12. Whenever, in consequence of the weather, or any process of law, or other unexpected obstacle, the work of laying said pneumatic tubes or pipes shall be stopped for so long a time that the public travel shall be obstructed, the street shall immediately be refilled and repaired by said Company, upon notice or order from the Commissioner of Public Works, as if the work contemplated in this permit was actually completed.

13. The said Company shall give forty-eight hours' notice to the Water Furveyor of their desire to commence work at any point, and shall not disturb the pavement, or commence work, or deposit material anywhere until the Inspectors are on the grounds to give the necessary instructions, and shall apply twenty-four hours in advance to the General Inspector for separate permit for each section to be opened.

14. The said Company shall give the Health Department twenty-four hours' notice of the time and place of making excavation under each sectional permit issued from the Department of Public Works, and the said Company shall provide and use such disinfectants as and when required by the Health Department.

15. If the said Company, their contractor or agent, shall refuse or neglect to carry out any of the provisions or requirements of this permit, or of the Laws of the State of New York, or ordinances of the Commissioner of Public Works, in reference to said work, the Commissioner of Public Works shall have the right and power to do the same at the cost and expense of said Company, which

said Company hereby agrees to pay to the Department of Public Works upon demand.

16. The Commissioner of Public Works reserves the right to revoke this permit in case of any violation of its terms and conditions, or of any Laws of the State of New York, or ordinances of the City of New York.

In consideration of the permission hereby given, the said Tubular Dispatch Company, their successors or assigns, shall keep an accurate account of their gross receipts, and shall report the same to the Comptroller of the City of New York in writing, under oath of their President or Treasurer, annually, on or before the first day of February of each year for the preceding calendar year; and also, at the time of making report of receipts as aforesaid, shall pay into the Treasury of the City of New York, to the credit and for the benefit of the Sinking Fund thereof, one per centum of their gross receipts for the first twelve months after the commencement of the use of any portion of said pneumatic tubes or pipes for transmission of mail or other matter, one and one-half per centum of their gross receipts for the next succeeding twelve months, and two per centum of their gross receipts for each succeeding year thereafter. And the said Company, their successors or assigns, shall, whenever required by the said Comptroller, execute such further assurance of their obligation for payment of the percentage of their gross receipts as aforesaid as the Counsel to the Corporation of the City of New York may devise and advise in the interests of the City of New York.

It is made a condition of the issuance of this permit that its acceptance, in all its terms, conditions and provisions, is attested hereunder by the President and Secretary of the Tubular Dispatch Company, and certificate of such acceptance and agreement thereto, in all of its terms, conditions and provisions, by resolution of the Board of Directors of said Company, shall be filed with the Commissioner of Public Works, and that thereupon this permit shall take effect.

(Signed) HOWARD PAYSON WILDS, Deputy and Acting Commissioner of Public Works.

The foregoing permit, in all of its terms, conditions and provisions, is hereby accepted by the Tubular Dispatch Company, which agrees to all the terms, conditions and provisions thereof.

In attestation whereof the Tubular Dispatch Company has hereunto caused its seal to be affixed and its acceptance to be executed by its President and Secretary, this 29th day of November, 1897.

(Corporate Seal.)
(Signed) TUBULAR DISPATCH COMPANY,
By JNO. E. MILHOLLAND, President; ROBERT J. FOX,
Secretary.

State of New York, City and County of New York, ss.
On this second day of December, 1897, before me, the undersigned, a notary public of the State of New York, in and for the County of New York, personally came Robert J. Fox, known to me to be the Secretary of the Tubular Dispatch Company, the corporation described in and which executed the foregoing acceptance; who being by me duly sworn, did depose and say that he resides in the said City and County of New York; that he is the Secretary of the Tubular Dispatch Company and knows the corporate seal thereof; that the seal affixed to the foregoing acceptance is the corporate seal of said Company and was thereto affixed by order of the Board of Directors of the said Company, and that he signed his name thereto by the like order as Secretary of said Company; and further, that deponent is acquainted with John E. Milholland, and knows him to be the President of said Company; that the signature of the said John E. Milholland subscribed to the foregoing acceptance is in the genuine handwriting of the said John E. Milholland, and was thereto subscribed by the like order of said Board of Directors, and in presence of said deponent.

In witness whereof, I have hereunto set my hand and seal the day and year first above written.
(Notarial Seal, No. 120.)
(Signed) FREDERIC C. WOODWARD, Notary Public, New York Co., N. Y.

Certificate of Acceptance of the Permit of the Department of Public Works, dated November 22nd, 1897, by the Tubular Dispatch Company.

A permit having been issued by Howard Payson Wilds, Deputy and Acting Commissioner of Public Works, of the City of New York, dated November 22nd, 1897, to the Tubular Dispatch Company, to take up the pavements and to excavate portions of the streets, and to lay down, construct and maintain two pneumatic tubes or pipes of iron under the streets, for the transmission of mail or other matter under and pursuant to the Provisions of Chapter 400 of the Laws of 1874, and Chapter 977 of the Laws of 1895, along the line of certain streets therein designated between the United States Public Stores, occupying the block bounded by Christopher, Greenwich, Barrow and Washington Streets, and the United States Custom House, at the Southeast corner of Wall and William streets; upon certain terms, conditions and provisions, including as follows:

In consideration of the permission hereby given, the said Tubular Dispatch Company, their successors or assigns, shall keep an accurate account of their gross receipts, and shall report the same to the Comptroller of the City of New York, in writing, under oath of their President or Treasurer, annually, on or before the first day of February of each year, for the preceding calendar year; and also at the time of making the report of receipts as aforesaid, shall pay into the Treasury of the City of New York, to the credit and for the benefit of the Sinking Fund thereof, and one per centum of their gross receipts for the first twelve months after the commencement of the use of any portion of said pneumatic tubes or pipes for the transmission of mail or other matter, one and one-half per centum of their gross receipts for the next succeeding twelve months, and two per centum of their gross receipts for each succeeding year thereafter. And the said Company, their successors or assigns, shall, whenever required by the said Comptroller, execute such further assurance of their obligation for payment of the percentage of their gross receipts as aforesaid, as the Counsel to the Corporation of the City of New York may devise and advise in the interests of the City of New York.

It is made a condition of the issuance of this permit that its acceptance, in all its terms, conditions and provisions, is attested hereunder by the President and Secretary of the Tubular Dispatch Company, and certificate of such acceptance and agreement thereto, in all of its terms, conditions and provisions, by resolution of the Board of Directors of said Company, shall be filed with the Commissioner of Public Works; and that thereupon this permit shall take effect.

The Tubular Dispatch Company, pursuant to the resolution of its Board of Directors, hereby certifies and declares that it accepts the said permit with all its terms, conditions and provisions, and agrees to all the terms, conditions and provisions of the said permit and directs that this Certificate be executed on behalf of the Tubular Dispatch Company, under the seal of said Company, by its President and Secretary.

(Corporate Seal.)
(Signed) TUBULAR DISPATCH COMPANY,
By JNO. E. MILHOLLAND, President; ROBERT J. FOX,
Secretary.

State of New York, City & County of New York, ss.
On this second day of December, 1897, before me, the undersigned, a notary public of the State of New York, in and for the County of New York, personally came Robert J. Fox, known to me to be the Secretary of the Tubular Dispatch Company, the corporation described in and which executed the foregoing certificate of acceptance, who being by me duly sworn, did depose and say:

That he resides in the said City and County of New York; that he is the Secretary of the Tubular Dispatch Company and knows the corporate seal thereof; that the seal affixed to the foregoing certificate of acceptance is the corporate seal of said Company, and was thereto affixed by order of the Board of Directors of said Company; and that he signed his name thereto by the like order as Secretary of said Company; and further that deponent is acquainted with John E. Milholland and

knows him to be the President of said Company; that the signature of said John E. Milholland subscribed to the foregoing certificate of acceptance is in the genuine handwriting of said John E. Milholland and was thereto subscribed by the like order of the said Board of Directors, and in the presence of said deponent.

In witness whereof, I have hereunto set my hand and seal the day and year first above written.
(Signed) FREDERIC C. WOODWARD, Notary Public, New York Co., N. Y.
(Notarial Seal, No. 120.)

COMMISSIONER'S OFFICE, NO. 150 NASSAU STREET, NEW YORK, December 2, 1897.

TO CONTRACTORS.

BIDS OR ESTIMATES, ENCLOSED IN A sealed envelope, with the title of the work and the name of the bidder indorsed thereon, will be received at No. 150 Nassau street, corner of Spruce street, in the Chief Clerk's office, Room No. 1704-7, until 12 o'clock m. on Wednesday, December 15, 1897. The bids will be publicly opened by the head of the Department, in basement, at No. 150 Nassau street, at the hour above mentioned.

No. 1. FOR REGULATING AND PAVING WITH ASPHALT PAVEMENT, ON THE PRESENT PAVEMENT, THE CARRIAGEWAY OF OLIVER STREET, from Cherry to Madison street.

No. 2. FOR REGULATING AND PAVING WITH ASPHALT PAVEMENT ON THE PRESENT PAVEMENT, THE CARRIAGEWAY OF PELL STREET, from Bower to Mott street.

No. 3. FOR REGULATING AND PAVING WITH ASPHALT PAVEMENT ON THE PRESENT PAVEMENT, THE CARRIAGEWAY OF TWENTY-FIRST STREET, from Eighth to Tenth avenue, where not within the limits of grants of land under water.

No. 4. FOR REGULATING AND PAVING WITH ASPHALT PAVEMENT, ON THE PRESENT PAVEMENT, THE CARRIAGEWAY OF TWENTY-FIRST STREET, from Ninth to Tenth avenue, so far as the same is within the limits of grants of land under water.

No. 5. FOR REGULATING AND PAVING WITH ASPHALT PAVEMENT, ON THE PRESENT PAVEMENT, THE CARRIAGEWAY OF THIRTY-FOURTH STREET, from Eighth to Ninth avenue.

No. 6. FOR REGULATING AND PAVING WITH ASPHALT PAVEMENT, ON THE PRESENT PAVEMENT, THE CARRIAGEWAY OF FORTY-THIRD STREET, from Eighth to Ninth avenue.

No. 7. FOR REGULATING AND PAVING WITH ASPHALT PAVEMENT, ON THE PRESENT PAVEMENT, THE CARRIAGEWAY OF FORTY-NINTH STREET, from Ninth to Tenth avenue.

No. 8. FOR REGULATING AND PAVING WITH ASPHALT PAVEMENT, ON THE PRESENT PAVEMENT, THE CARRIAGEWAY OF SEVENTY-SECOND STREET, from Fifth to Madison avenue.

No. 9. FOR REGULATING AND PAVING WITH MACADAM AND ASPHALT-BLOCK PAVEMENT, THE ROADWAY OF BOULEVARD LAFAETTE, from the macadam pavement now laid on Eleventh avenue or the Boulevard, to the north side of One Hundred and Fifty-eighth street, extending from the easterly curb-line to the centre of said avenue, AND SET CURB-STONES AND FLAG SIDEWALK.

No. 10. FOR REGULATING AND PAVING WITH ASPHALT PAVEMENT, ON THE PRESENT PAVEMENT, THE CARRIAGEWAY OF SEVENTY-FOURTH STREET, from Fifth to Madison avenue.

No. 11. FOR REGULATING AND PAVING WITH ASPHALT-BLOCK PAVEMENT, ON CONCRETE FOUNDATION, THE CARRIAGEWAY OF TWENTY-FOURTH STREET, from Madison to First avenue.

No. 12. FOR COMPLETING UNFINISHED ALTERATION AND IMPROVEMENT TO SEWERS IN TWENTIETH STREET, between Ninth and Eleventh avenues; IN ELEVENTH AVENUE, between Twentieth and Twenty-third streets, AND IN TWENTY-FIRST AND TWENTY-SECOND STREETS, between Twentieth and Twenty-third streets, IN ONE HUNDRED AND SEVENTY-EIGHTH STREET, between Amsterdam avenue and Kingsbridge road, WITH CURVES AT AUBURN, ELEVENTH AND WADSWORTH AVENUES.

No. 14. FOR SEWERS IN ONE HUNDRED AND EIGHTIETH STREET, between Amsterdam avenue and Kingsbridge road, WITH CURVES AT AUBURN AND WADSWORTH AVENUES.

Each bid or estimate shall contain and state the name and place of residence of each of the persons making the same, the names of all persons interested with him therein, and if no other person be so interested it shall distinctly state that fact; that it is made without any connection with any other person making an estimate for the same purpose, and is in all respects fair and without collusion or fraud, and that no member of the Common Council, head of a department, or other officer of the Corporation, is directly or indirectly interested therein, or in the supplies or in the work to which it relates or in any portion of the profits thereof.

Each estimate must be verified by the oath, in writing, of the party making the same, that the several matters therein stated are true, and must be accompanied by the consent, in writing, of two householders or freeholders in the City of New York, to the effect that if the contract is awarded to the person making the estimate, they will, upon its being so awarded, become bound as his sureties for its faithful performance, and that if he shall refuse or neglect to execute the same, they will pay to the Corporation any difference between the sum to which he would be entitled upon its completion, and that which the Corporation may be obliged to pay to the person to whom the contract shall be awarded upon the estimated letting, the amount to be calculated upon the estimated amount of the work by which the bids are tested.

The consent last above mentioned must be accompanied by the oath or affirmation, in writing, of each of the persons subscribing the same, that they are a householdholder in the City of New York, and is worth the amount of the security required for the completion of the contract, over and above all his debts, of every nature and over and above his liabilities as bail, surety, or otherwise, and that he has offered himself as surety in good faith, with the intention to execute the bond required by law.

No estimate will be considered unless accompanied by either a certified check upon one of the State or National banks of the City of New York, drawn to the order of the Comptroller, or money to the amount of five per centum of the amount of the security required for the faithful performance of the contract. Such check or money must not be inclosed in a sealed envelope containing the estimate, but must be handed to the officer or clerk of the Department who has charge of the estimate-book, 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 the deposit will be returned to him.

THE COMMISSIONER OF PUBLIC WORKS RESERVES THE RIGHT TO REJECT ALL BIDS RECEIVED FOR ANY PARTICULAR WORK IF HE DEEMS IT FOR THE BEST INTERESTS OF THE CITY.

Department of Public Works,

Commissioner's Office,

No. 150 Nassau Street,

New York,

December 29, 1897

HON. WILLIAM L. STRONG,

M a y o r.

Dear Sir:

For your information, I enclose a copy of a permit issued to the Tubular Dispatch Company on the 24th inst.

The permit is similar to other permits heretofore granted to the same Company to open streets and lay pneumatic tubes therein, and provides, in paragraph 16, that the City shall be compensated for the privilege granted.

Very respectfully,



Deputy Commissioner of Public Works.

Enclosure.

days. Return days: Tuesdays, Thursdays and Saturdays. Ninth District—No. 170 East One Hundred and Twenty-first street. Court opens every morning at 9 o'clock (except Sundays and legal holidays). Tenth District—Corner of Third avenue and One Hundred and Fifty-eighth street. 9 A. M. to 4 P. M. Eleventh District—No. 919 Eighth avenue. Court open daily (Sundays and legal holidays excepted) from 9 A. M. to 4 P. M. Twelfth District—Westchester, New York City. Open daily (Sundays and legal holidays excepted), from 9 A. M. to 4 P. M. Thirteenth District—Corner Columbus avenue and One Hundred and Twenty-sixth street. Court open daily (Sundays and legal holidays excepted), from 9 A. M. to 4 P. M.

City Magistrates' Courts—Office of Secretary, Second District Police Court, Jefferson Market, No. 125 Sixth avenue. First District—Tombs, Centre street. Third District—No. 69 Essex street. Fourth District—Fifty-seventh street, near Lexington avenue. Fifth District—One Hundred and Twenty-first street, southeastern corner of Sylvan place. Sixth District—One Hundred and Fifty-eighth street and Third avenue.

OFFICIAL PAPERS.

MORNING—"NEW YORK PRESS," "NEW YORK TRIBUNE." Evening—"Mail and Express," "News." Weekly—"Lestie Weekly," "Weekly Union." German—"Staats-Zeitung."

HENRY McMILLEN, Supervisor.

DEPARTMENT OF PUBLIC WORKS

PERMIT ISSUED BY THE DEPARTMENT OF PUBLIC WORKS OF THE CITY OF NEW YORK TO TUBULAR DISPATCH COMPANY. DEPARTMENT OF PUBLIC WORKS, COMMISSIONER'S OFFICE No. 150 NASSAU STREET, NEW YORK, December 24, 1897.

PERMISSION IS HEREBY GIVEN TO THE Tubular Dispatch Company, a corporation organized and existing under the Laws of the State of New York, to take up the pavements and to excavate portions of the streets, and to lay down, construct and maintain four pneumatic tubes or pipes of iron, (not exceeding four inch bore and twelve inch flange) and appurtenances, under the streets, for the transmission of mail and other matter in and through said tubes or pipes, under and pursuant to the provisions of Chapter 490 of the Laws of 1874, and Chapter 977 of the Laws of 1895; as follows:

Beginning at the Grand Central Post Office Sub-Station "H," thence along 44th St. five feet from the South curb line to Lexington avenue, thence along Lexington avenue five feet from the East curb line to the Harlem river.

Beginning at the intersection of 51st Street and Eighth Avenue, thence North on Eighth Avenue five feet from the West curb line to 155th Street, thence along 155th Street five feet from the South curb line to Amsterdam Avenue, thence along Amsterdam Avenue five feet from the East curb line to 190th Street, thence along 190th Street five feet from the South curb line to Eleventh Avenue, thence along Eleventh Avenue five feet from the East curb line to Nagle Avenue, thence along Nagle Avenue five feet from the East curb line to Amsterdam Avenue, thence along Amsterdam Avenue five feet from the East curb line to Kingsbridge road, thence along Kingsbridge Road five feet from the East curb line to the Harlem River.

Beginning at the Hudson River and Manhattan Street, thence along Manhattan Street five feet from the North curb line to 125th Street, thence along 125th Street five feet from the North curb line to the East River.

And to construct, and maintain two pneumatic tubes or pipes of iron and appurtenances:

Beginning at the intersection of 104th Street and Eighth Avenue, thence along 104th Street five feet North of the South curb line to Columbus Avenue, thence along Columbus Avenue five feet from the West curb line to Post Office Sub-Station "10."

Beginning at the intersection of 84th Street and Eighth Avenue, thence along 84th Street five feet from the North curb line to Columbus Avenue, thence along Columbus Avenue five feet from the West curb line to Post Office Sub-Station "W."

Beginning on 56th Street at the Hudson River, thence along 56th Street five feet from the South curb line to the East River.

Beginning on 42nd Street at the Hudson River, thence along 42nd Street five feet from the South curb line to 43rd Street, thence along 43rd Street five feet from the South curb line to Vanderbilt Avenue, thence along Vanderbilt Avenue five feet from the West curb line to 42nd Street, thence along 42nd Street eight feet from the South curb line to Depew Place, thence along Depew Place two feet from the East curb line to the South Street, thence along 144th Street two feet from the South curb line to Lexington Avenue, thence along Lexington Avenue five feet from the East curb line to 23rd Street, thence along 23rd Street five feet from the North curb line to Fourth Avenue.

Beginning at the intersection of 43rd Street and Depew Place, thence along 43rd Street five feet from the South curb line to the East River.

Beginning on 33rd Street at the Hudson River, thence along 33rd Street five feet from the South curb line to First Avenue, thence along First Avenue five feet from the East curb line to 34th Street, thence along 34th Street five feet from the curb line to the East River.

Beginning on Thirtieth Avenue at 24th Street, thence along Thirtieth Avenue five feet from the East curb line to 22nd Street, thence along 22nd Street five feet from the North curb line to Avenue A, thence along Avenue A five feet from the East curb line to 23rd Street, thence along 23rd Street five feet from the South curb line to the East River.

Beginning on 14th Street at the Hudson River, thence along Thirteenth Avenue five feet from the East curb line to 13th Street, thence along 13th Street five feet from the North curb line to the East River.

Beginning at the General Post Office, thence along Park Place five feet from the North curb line to West Broadway, thence along West Broadway five feet from the East curb line to Bleeker Street, thence along Bleeker Street five feet from the South curb line to Eighth Avenue, thence along Eighth Avenue five feet from the North curb line to 12th Street, thence along 12th Street five feet from the North curb line to Sixth Avenue, thence along Sixth Avenue five feet from the East curb line to 51st Street, thence along 51st Street five feet from the South curb line to Eighth Avenue.

Beginning at the intersection of 51st Street and Eighth Avenue, thence along 51st Street five feet from the South curb line to Ninth Avenue, thence along Ninth Avenue three feet from the East curb line to Gansevoort Street, thence along Gansevoort Street five feet from the North curb line to West street, thence along West street ten feet from the East curb line to Battery Place, thence along Battery Place five feet from the South curb line to State Street, thence along State Street five feet from the West curb line to Whitehall Street, thence along Whitehall Street five feet from the West curb line to South Street, thence along South Street five feet from the West curb line to Front Street, thence along Front Street five feet from the North curb line to Montgomery Street, thence along Montgomery street five feet from the North curb line to Cherry Street, thence along Cherry Street five feet from the North curb line to East Street, thence along East Street five feet from the West curb line to Grand Street, thence along Grand Street five feet from the North curb line to the Bowery, thence along the Bowery five feet from the East curb line to Broome Street, thence along Broome Street five feet from the North curb line to Center street.

Beginning at the intersection of Fourth Avenue and 42nd Street, thence along Fourth Avenue, thence along from the East curb line to 13th Street, thence along Fourth Avenue eleven feet six inches from the West curb line to 9th Street, thence along 9th Street six feet from the North curb line to Third Avenue, thence

along Third Avenue six feet from the East curb line to Astor Place, thence along Astor Place twelve feet from the South curb line to Lafayette Place, thence along Lafayette Place six feet from the East curb line to Elm Street, thence along Elm Street five feet from the East curb line to Mulberry Street, thence along Mulberry Street six feet from the East curb line to Broome Street, thence along Broome Street nine feet from the North curb line to Center Street, thence along Center Street seventeen feet from the East curb line to Park Row, thence along Park Row four feet from the West curb line to the General Post Office.

Beginning at the General Post Office, thence along Reekman street ten feet from the North curb line to William Street, thence along William Street ten feet from the East curb line to South William Street, thence along South William Street five feet from the West curb line to Broad Street, thence along Broad Street eight feet from the West curb line to Stone street, thence along Stone Street thirteen feet from the South curb line to Whitehall Street, thence along Whitehall Street five feet from the West curb line to State street.

Beginning at the intersection of Norfolk and Grand Streets, thence along Norfolk Street five feet from the North curb line to Division Street, thence along Division Street five feet from the North curb line to Chatham Square, thence along Chatham Square twenty feet from the West curb line to Park Row, thence along Park Row five feet from the East curb line to Center street, thence across and along Park Row four feet from the West curb line to the General Post Office.

Beginning at the intersection of Park Place and West Broadway, thence along Park Place five feet from the North curb line to West Street.

Beginning at the intersection of Lexington Avenue and 86th Street, thence along Eighty-sixth Street five feet South of the North curb to and into P. O. Sub-Station K on 86th Street seventy-five feet East of Third Avenue.

Beginning at the intersection of Lexington avenue and Sixty-seventh street, thence along Sixty-seventh street five feet North of the South curb to Third avenue, thence along Third avenue five feet East of the West curb to and into P. O. Sub-Station Y on Third avenue, between Sixty-seventh and Sixty-eighth streets.

This permit is granted and accepted subject to the construction and maintenance of said pneumatic tubes or pipes in accordance with the plans thereof filed by said Popular Dispatch Company upon their application for this permit with the Department of Public Works, and such modifications of said plans as have been or may be required by the Commissioner of Public Works, as indicated by the foregoing route for laying said tubes or pipes; and also subject to the following terms, conditions and provisions, besides such further provisions and restrictions as may be hereafter from time to time imposed by the Commissioner of Public Works in the public interests:

1. The construction and maintenance of said pneumatic tubes or pipes shall be subject to the terms, conditions and obligations imposed by the charter of said Company and by the Laws of the State of New York and ordinances of the City of New York heretofore or hereafter enacted or adopted.

2. The laying and construction of said pneumatic tubes or pipes and appurtenances shall be so prosecuted as to cause as little inconvenience to public travel as practicable, and as may be directed by the Commissioner of Public Works, and so as not to interfere with the water mains or service connections, or with the sewers or house connections, or with the subways or stoway connections, in any of said streets, nor with such connections hereafter to be made.

3. Wherever water-mains, or sewers, or connections therewith, or other impediment are encountered, the work at such points shall be stopped until proper plans and specifications are prepared and submitted to and approved by the Commissioner of Public Works for necessary changes, for protection of the same, and to clear the impediment thereof, in the plan for laying said pneumatic tubes or pipes, before entering on the work.

4. The trench or excavation for said pneumatic tubes or pipes may be four feet wide and from three to seven feet deep; and immediately after said tubes or pipes shall be laid said trench or excavation shall be filled with clean earth, well and thoroughly rammed while being put in, and the pavement shall be immediately replaced in a good and workmanlike manner, and to the entire satisfaction of the Commissioner of Public Works, and in all respects in accordance with the plans and specifications thereof of the Department of Public Works, and shall be so maintained by said Company for two years after such pavements shall have been relaid; and the necessary materials and the labor for all said work shall be furnished by and at the expense of said Company.

5. In case said Company shall fail or neglect to so replace the pavement, or to so maintain the same for two years, then the Commissioner of Public Works or his successor in authority in reference thereto, after a lapse of forty-eight hours notice served on any of the agents or employees of said Company, shall make such repairs as he finds necessary, and the said Company shall pay, on demand, to the Department of Public Works, or its successor in authority in reference thereto, all cost incurred for labor and material in making such repairs.

6. The said Company shall place sufficient and proper guards for the prevention of accidents, and shall put up and keep at night suitable and sufficient lights, and they shall indemnify and save harmless the City of New York, its officers, agents and servants, against and from all damages, costs and expenses which they may suffer or to which they may be put by reason of any injury to the person or property of another, resulting from carelessness or negligence on the part of said Company.

7. The said Company shall immediately remove from the line of work all surplus materials, earth, sand, rubbish and stones, as rapidly as the work progresses.

8. The work shall be carried on only in such places and for such distances in each street as the Commissioner of Public Works or his representatives shall from time to time designate; but the said Company shall prosecute the work with all necessary force of labor at such times and places as said Commissioner may, from time to time require.

9. All the frames and heads for manholes or other places for access to said tubes or pipes placed on the line of the work, shall have noiseless covers on plates, and all the work, from the time the excavation shall be commenced to the time the pavement shall be relaid and reconstructed, the street shall immediately be refilled and repaved by said Company, upon notice or order from the Commissioner of Public Works, as if the work contemplated in this permit was actually completed.

10. Whenever, in consequence of the weather, or any process of law, or other unexpected obstacle, the work for laying said pneumatic tubes or pipes shall be stopped for so long a time that the public travel shall be obstructed, the street shall immediately be refilled and repaved by said Company, upon notice or order from the Commissioner of Public Works, as if the work contemplated in this permit was actually completed.

11. If any contractor, foreman, mechanic or laborer shall be insolent, or negligent in carrying out any instructions given by any properly authorized representative of the Department of Public Works, he shall be forthwith discharged; and not re-employed on the work without the consent of the Commissioner of Public Works. A notice or order given to any contractor or foreman in charge of any of the work shall be considered a notice or order to the said Company.

12. Whenever, in consequence of the weather, or any process of law, or other unexpected obstacle, the work for laying said pneumatic tubes or pipes shall be stopped for so long a time that the public travel shall be obstructed, the street shall immediately be refilled and repaved by said Company, upon notice or order from the Commissioner of Public Works, as if the work contemplated in this permit was actually completed.

13. The said Company shall give forty-eight hours' notice to the Water Purveyor of their desire to commence work at any point, and shall not disturb the pavement, commence work, or deposit material anywhere until the inspectors are on the grounds to give the necessary instructions, and shall apply twenty-four hours in advance to the General Inspector for separate permit for each section to be opened.

14. The said Company shall give the Health Department twenty-four hours' notice of the time and place of

making excavation under each sectional permit issued from the Department of Public Works, and the said Company shall provide and use such disinfectants as and when required by the Health Department.

15. If the said Company, their contractor or agent, shall refuse or neglect to carry out any of the provisions or requirements of this permit, or if the laws of the State of New York, or ordinances of the City of New York, relating to said work, the Commissioner of Public Works shall have the right and power to do the same at the cost and expense of said Company, which said Company hereby agrees to pay to the Department of Public Works upon demand.

16. The Commissioner of Public Works reserves the right to revoke this permit in case of any violation of its terms and conditions, or of any Laws of the State of New York, or ordinances of the City of New York. In consideration of the permission hereby given, the said Tubular Dispatch Company, their successors or assigns, shall keep an accurate account of their gross receipts, and shall report the same to the Comptroller of the City of New York in writing, under oath of their President or Treasurer, annually, on or before the first day of February of each year for the preceding calendar year; and also, at the time of making report of receipts as aforesaid, shall pay into the Treasury of the City of New York, to the credit and for the benefit of the Sinking Fund thereof, one per centum of their gross receipts for the first twelve months after the commencement of the use of any portion of said pneumatic tubes or pipes for transmission of mail or other matter, one and one-half per centum of their gross receipts for the next succeeding twelve months, and two per centum of their gross receipts for each succeeding year thereafter. And the said Company, their successors or assigns, shall, whenever required by the said Comptroller, execute such further assurance of their obligation for payment of the percentage of their gross receipts as aforesaid as the Counsel to the Corporation of the City of New York may devise and require.

It is made a condition of the issuance of this permit that its acceptance, in all its terms, conditions and provisions is attested hereunder by the President and Secretary of the Tubular Dispatch Company, and certificate of such acceptance and agreement thereto, in all of its terms, conditions and provisions, by resolution of the Board of Directors of said Company, shall be filed with the Commissioner of Public Works, and that thereupon this permit shall take effect.

(Signed) HOWARD FAYSON, Deputy Commissioner of Public Works.

The foregoing permit, in all of its terms, conditions and provisions, is hereby accepted by the Tubular Dispatch Company, which agrees to all the terms, conditions and provisions thereof.

In attestation whereof the Tubular Dispatch Company has hereunto caused its seal to be affixed, and its acceptance to be executed by its President and Secretary, this 27th day of December, 1897.

(Corporate Seal.)

(Signed) TUBULAR DISPATCH COMPANY, by J. SO. E. MILHOLLAND, President; ROBERT J. FOX, Secretary.

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

On this 27th day of December, 1897, before me, the undersigned, a notary public of the State of New York, and for the County of New York, personally came ROBERT J. FOX, known to me to be the Secretary of the Tubular Dispatch Company, the company described in and which executed the foregoing acceptance; who being by me duly sworn, did depose and say that he resides in the said City and County of New York; that he is the Secretary of the Tubular Dispatch Company and knows the corporate seal thereof; that the seal affixed to the foregoing acceptance is the corporate seal of the said Company and was thereto affixed by order of the Board of Directors of the said Company, and that he signed his name thereto by the like order as Secretary of the said Company; and further, that deponent is acquainted with JOHN E. MILHOLLAND, and knows him to be the President of the said Company; that the signature of the said JOHN E. MILHOLLAND subscribed to the foregoing acceptance is in the genuine handwriting of the said JOHN E. MILHOLLAND, and was thereto subscribed by the like order of the said Board of Directors, and in presence of said deponent.

In witness whereof, I have hereunto set my hand and seal the day and year first above written.

(Notarial Seal.)

(Signed) FREDERIC C. WOODWARD, Notary Public, New York County, N. Y.

Certificate of Acceptance of the Permit of the Department of Public Works, dated December 24th, 1897, by the Tubular Dispatch Company.

A permit having been issued by HOWARD FAYSON, Deputy Commissioner of Public Works, of the City of New York, dated December 24, 1897, to the Tubular Dispatch Company, to take up the pavements and to lay down, construct and maintain two pneumatic tubes or pipes of iron under the streets, for the transmission of mail or other matter under and pursuant to the provisions of chapter 400 of the Laws of 1874, and chapter 977 of the Laws of 1895, along the line of certain streets therein designated upon certain terms, conditions and provisions, including as follows:

"In consideration of the permission hereby given, the said Tubular Dispatch Company, their successors or assigns, shall keep an accurate account of their gross receipts, and shall report the same to the Comptroller of the City of New York in writing, under oath of their President or Treasurer, annually, on or before the first day of February of each year for the preceding calendar year; and also, at the time of making report of receipts as aforesaid, shall pay into the Treasury of the City of New York, to the credit and for the benefit of the Sinking Fund thereof, one per centum of their gross receipts for the first twelve months after the commencement of the use of any portion of said pneumatic tubes or pipes for transmission of mail or other matter, one and one-half per centum of their gross receipts for the next succeeding twelve months and two per centum of their gross receipts for each succeeding year thereafter. And the said Company, their successors or assigns, shall, whenever required by the said Comptroller, execute such further assurance of their obligation for payment of the percentage of their gross receipts as aforesaid, as the Counsel to the Corporation of the City of New York may devise and require in the interests of the City of New York."

"It is made a condition of the issuance of this permit that its acceptance, in all its terms, conditions and provisions is attested hereunder by the President and Secretary of the Tubular Dispatch Company, and certificate of such acceptance and agreement thereto, in all of its terms, conditions and provisions, by resolution of the Board of Directors of said Company, shall be filed with the Commissioner of Public Works; and that thereupon this permit shall take effect."

The Tubular Dispatch Company, pursuant to the resolution of its Board of Directors, hereby certifies and declares that it accepts the said permit with all its terms, conditions and provisions, and agrees to all the terms, conditions and provisions of the said permit and directs that this Certificate be executed on behalf of the Tubular Dispatch Company, under the seal of said Company, by its President and Secretary.

(Corporate Seal.)

(Signed) TUBULAR DISPATCH COMPANY, by J. SO. E. MILHOLLAND, President; ROBERT J. FOX, Secretary.

State of New York, City & County of New York, ss. On this twenty-seventh day of December, 1897, before me, the undersigned, a Notary Public of the State of New York, and for the County of New York, personally came ROBERT J. FOX, known to me to be the Secretary of the Tubular Dispatch Company, the corporation described in and which executed the foregoing certificate of acceptance, who being by me duly sworn, did depose and say: that he resides in the said City and County of New York; that he is the Secretary of the Tubular Dispatch Company and knows the corporate seal thereof; that the seal affixed to the foregoing certificate of acceptance is the corporate seal of said Company, and

was thereto affixed by order of the Board of Directors of the said Company; and that he signed his name thereto by the like order as Secretary of said Company; and further, that deponent is acquainted with JOHN E. MILHOLLAND and knows him to be the President of the said Company; that the signature of JOHN E. MILHOLLAND subscribed to the foregoing certificate of acceptance is in the genuine handwriting of JOHN E. MILHOLLAND and was thereto subscribed by the like order of the said Board of Directors, and in the presence of said deponent.

In witness whereof, I have hereunto set my hand and seal the day and year first above written.

(Signed) FREDERIC C. WOODWARD, Notary Public, New York County, N. Y.

COMMISSIONER'S OFFICE, No. 150 NASSAU STREET, NEW YORK, December 18, 1897.

TO CONTRACTORS.

BIDS OR ESTIMATES, ENCLOSED IN A sealed envelope, with the title of the work and the name of the bidder indorsed thereon, also the number of the work as in the attached ment, will be received at No. 150 Nassau street, corner of Spruce street, in the Chief Clerk's office, Room No. 1704-7, until 12 o'clock on Friday, December 11, 1897. The bids will be publicly opened by the head of the Department, on above mentioned date, at No. 150 Nassau street, at the hour and place so designated.

No. 1. FOR REGULATING AND PAVING WITH ASPHALT-BLOCK PAVEMENT, ON CONCRETE FOUNDATION, THE CARRIAGEWAY OF ONE HUNDRED AND EIGHTY-THIRD STREET, from Kingsbridge road to Amsterdam avenue.

No. 2. FOR REGULATING AND PAVING WITH ASPHALT-BLOCK PAVEMENT ON CONCRETE FOUNDATION, THE CARRIAGEWAY OF ONE HUNDRED AND SIXTY-SECOND STREET, from Kingsbridge road to Eleventh avenue or Boulevard.

No. 3. FOR REGULATING AND PAVING WITH ASPHALT-BLOCK PAVEMENT, ON CONCRETE FOUNDATION, THE CARRIAGEWAY OF ONE HUNDRED AND FORTY-EIGHTH STREET, from Seventh to Eighth avenue.

No. 4. FOR REGULATING AND PAVING WITH ASPHALT-BLOCK PAVEMENT, ON CONCRETE FOUNDATION, THE CARRIAGEWAY OF ONE HUNDRED AND FIFTY-FOURTH STREET, from Eighth to Bradhurst avenue.

No. 5. FOR REGULATING AND PAVING WITH ASPHALT-BLOCK PAVEMENT, ON CONCRETE FOUNDATION, THE CARRIAGEWAY OF EDGEcombe AVENUE, from north side of One Hundred and Forty-fifth street to north side of One Hundred and Fiftieth street.

No. 6. FOR REGULATING AND PAVING WITH ASPHALT-BLOCK PAVEMENT, ON CONCRETE FOUNDATION, THE CARRIAGEWAY OF ONE HUNDRED AND FORTY-SEVENTH STREET, from Seventh to Eighth avenue.

No. 7. FOR REGULATING AND PAVING WITH ASPHALT-BLOCK PAVEMENT ON CONCRETE FOUNDATION, THE CARRIAGEWAY OF ONE HUNDRED AND THIRTY-EIGHTH STREET, from Seventh to Lenox avenue.

No. 8. FOR REGULATING AND PAVING WITH ASPHALT-BLOCK PAVEMENT, ON CONCRETE FOUNDATION, THE CARRIAGEWAY OF ONE HUNDRED AND SEVENTY-FIFTH STREET, from Amsterdam to Eleventh avenue.

No. 9. FOR REGULATING AND PAVING WITH ASPHALT-BLOCK PAVEMENT, ON CONCRETE FOUNDATION, THE CARRIAGEWAY OF AUDUBON AVENUE, from One Hundred and Seventy-third to One Hundred and Seventy-fifth street.

No. 10. FOR REGULATING AND PAVING WITH ASPHALT-BLOCK PAVEMENT, ON CONCRETE FOUNDATION, THE CARRIAGEWAY OF ONE HUNDREDDTH STREET, from Lexington to Park avenue.

No. 11. FOR REGULATING AND PAVING WITH ASPHALT-BLOCK PAVEMENT, ON CONCRETE FOUNDATION, THE CARRIAGEWAY OF ONE HUNDRED AND SIXTY-SIXTH STREET, from Amsterdam to Edgecombe avenue.

Each bid or estimate shall contain and state the name and place of residence of each of the persons making the same, the names of all persons interested with him therein, and if no other person be so interested it shall distinctly state that fact; that it is made without any connection with any other person making an estimate for the same purpose, and is in all respects fair and without collusion or fraud, and that no member of the Common Council, head of a department, chief of a bureau, deputy thereof, or clerk thereof, or other officer of the Corporation, is directly or indirectly interested therein, or in the supplies or in the work to which it relates or in any portion of the profits thereof.

Each estimate must be verified by the oath, in writing, of the party making the same, that the several matters therein stated are true, and must be accompanied by the consent, in writing, of two householders or freeholders in the City of New York, to the effect that if the contract is awarded to the person making the estimate, they will upon its being so awarded, become bound as his sureties for its faithful performance, and that if he shall refuse or neglect to execute the same, they will pay to the Corporation any difference between the sum to which he would be entitled upon its completion, and that which the Corporation may be obliged to pay to the person to whom the contract shall be awarded at any subsequent letting, the amount to be calculated upon the estimated amount of the work by which the bids are tested.

The consent last above mentioned must be accompanied by the oath or affirmation, in writing, of each of the persons signing the same that he is a household or freeholder in the City of New York, and is worth the amount of the security required for the completion of the contract, over and above all his debts of every nature and over and above his liabilities as bail, surety, or otherwise, and that he has offered himself as surety in good faith, with the intention to execute the bond required by law.

No estimate will be considered unless accompanied by either a certified check upon one of the State or National banks of the City of New York, drawn to the order of the Comptroller, or money to the amount of five per centum of the amount of the security required for the faithful performance of the contract. Such check or money must not be enclosed in a sealed envelope containing the estimate, but must be handed to the officer or clerk of the Department who has charge of the estimates-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 the deposit will be returned to him.

THE COMMISSIONER OF PUBLIC WORKS RESERVES THE RIGHT TO REJECT ALL BIDS RECEIVED FOR ANY PARTICULAR WORK IF HE DEEMS IT FOR THE BEST INTERESTS OF THE CITY.

Blank forms of bid or estimate, the proper envelopes in which to inclose the same, the specifications and agreements, and any further information desired, can be obtained in Bureau of Water Purveyor.

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

NOTICE OF SALE AT PUBLIC AUCTION.

ON WEDNESDAY, DECEMBER 29, 1897, AT 10.30 A. M., the Department of Public Works will sell at public auction and to the highest bidder or bidders, by Mr. Louis Levy, Auctioneer, on the ground:

About 249,000 old Belgium paving blocks, and about

Department of Public Works,

Commissioner's Office,

Copy.

No. 150 Nassau Street,

New York,

December 30, 1897

M. D. Rothschild, Esq.,
606 West 114th Street.

Dear Sir:

(Signed) HOWARD PAYSON WILDS

I have received through the Mayor's office your letter to him of December 17th, and I am also in receipt of your letter of 28th inst., addressed to me, in regard to the failure of this Department to pave 114th Street, between the Boulevard and Riverside Drive.

In reply, I can only say that the contract for paving that part of 114th Street was not signed until November 29th, after which time it was considered inadvisable to begin the work on account of the probability of frost setting in. The incoming administration will no doubt cause the work to be begun as early as practicable next Spring.

Very respectfully,

(Signed) HOWARD PAYSON WILDS,

Deputy Commissioner of Public Works.

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