

UNIVERSITY OF LONDON

NO. 956.

-8 JUN 1953

INSTITUTE OF LEGAL STUDIES

**Court of King's Bench**

(APPEAL SIDE)

On appeal from a judgment of the Superior Court, for the  
Province of Quebec, (District of Montreal), rendered  
by the Honourable Mr. Justice Mercier,  
November 23rd, 1934.

***The People of the State of New York,***

(Plaintiffs in the Court below)

APPELLANTS

—vs—

***Heirs of the late John M. Phillips,***

(Defendants in the Court below)

—&amp;—

***The Crown Trust Company et al.,  
es-qual., for the Heirs of the  
late Francis Phillips,***

Defendants severing in their defence  
and en reprise d'instance.

RESPONDENTS

—&amp;—

***The Montreal Safe Deposit Company,***

TIERS-SAISIS

**C A S E****VOLUME 5. — PAGES 2001. TO 2500.****BERTRAND, GUERIN, GOUDRAULT and GARNEAU,**

Attorneys for Appellants.

**COOK, MAGEE, NICHOLSON and O'DONNELL,**Attorneys for the Heirs of the late  
John M. Phillips, Respondents.**HACKETT, MULVENA, FOSTER, HACKETT and HANNEN,**Attorneys for The Crown Trust Company et al., es-qual.,  
for the Heirs of the late Francis Phillips, Respondents.***J.-D. de LAMIRANDE et Cie, 4557 rue St-Denis, Montréal.***

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*The Montreal Safe Deposit Company,*

TIERS-SAISIS

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C A S E

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EXHIBIT C-29 (*continued*):

Notice to gas companies, etc.

Not to hinder other companies.

10 XXXI. The Contractor will give notice in writing to all gas, railroad and other companies owning or controlling any pipe, tracks or other structures which during the progress of the work may be affected by the prosecution of the same so that said companies may protect or remove their structures, and he will not cause any hindrance to, or interference with, any such gas company or other company or companies in protecting their said pipes, tracks or other structures, nor in removing or otherwise protecting and replacing the main and service pipe, lampposts, lamps, tracks or other structures where necessary, but the Contractor will suffer the said company or companies to take all such measures as are requisite for the purpose aforesaid. But if said  
20 gas, railroad, or other companies, within five days after receipt of such notice, fail to support, remove or otherwise protect their structures (except such railroad tracks or other railroad structures upon or within a right of way owned by a railroad company (see Section XXXIV), the Contractor will upon the approval of the President protect or remove the same, it being expressly understood that the cost thereof shall not be a charge against The City, but shall be a matter for adjustment between the Contractor and the company or companies concerned.

Pipes, conduits, etc., of private companies.

30 XXXII. It is hereby agreed that The City is not responsible or liable for the support, protection or reconstruction of such gas pipes, conduits, water pipes, tracks or structures owned by private companies enjoying special franchises or occupying any portion of the street or way on or below the surface in its streets or ways, as the Contractor admits that he has carefully examined the location of work, has made special inquiry at the offices of the companies owning, controlling or operating said pipes, conduits, tracks and structures, and he has determined to his satisfaction the character, size, location and length of such  
40 pipes, conduits, tracks and structures; that he has inspected the public records of the various City Departments having cognizance and control of pipes, conduits, and other subsurface structures, and of The City's water pipes, conduits and sewers, and he has made such further personal inspection and investigation as he deemed proper to determine the correctness of the information so obtained; and he clearly understands that The City does not

EXHIBIT C-29 (*continued*):

insure the accuracy of such reports or information, and agrees that he will not make any claim against The City for damages or extra work caused or occasioned by his relying upon such records, reports or information furnished by any City Department or any companies, either as a whole or in part.

10 Protection and restoration of pipes, etc., of private companies.

20 XXXIII. The Contractor agrees to confer with and to make to or entertain an offer from such private companies as own the said pipes, conduits, tracks or structures, except such railroad companies whose tracks or other railroad structures are upon or within a right of way owned by said companies (see Section XXXIV); and the Contractor further agrees to enter into an agreement with said companies by what terms and at what prices the support, protection, removal and reconstruction of the pipes, conduits, tracks and structures will be undertaken and accomplished, and in the event of the failure to make such an agreement with said companies, he will not complain nor make any demand on The City for additional compensation or pay for supporting, protecting, removing or restoring the said pipes, conduits, tracks or other structures.

Agreement between City and railroad company, etc.

30 XXXIV. If for the purpose of performing the work required by this contract The City has entered into an agreement with any railroad company owning a right of way, or with the owners of any property through or across which the work, or any part thereof, is to be constructed, the Contractor agrees to carry on such work or such part thereof as directed in accordance with the terms of such agreement, a copy whereof is hereto annexed and is hereby agreed upon as forming part of this contract.

Contractor to notify Department Water Supply, Gas and Electricity.

40 XXXV. At least twenty-four hours before breaking ground, for the purpose of constructing the work of this contract, the Contractor agrees to give notice thereof in writing to the Department of Water Supply, Gas and Electricity.

City's water pipes, etc.

XXXVI. If upon excavating it shall be found that any existing water pipes or appurtenances owned or controlled or



EXHIBIT C-29 (*continued*):

operated by The City follow the lines, or occupy the place, of the sewer or sewers and appurtenances to be laid or built as shown on the plan, such existing water pipes and appurtenances will be removed and relaid, or rebuilt, by and at the cost of the Department of Water Supply, Gas and Electricity of The City of New York; if, however, in order to facilitate the work to be done under this contract, it be found desirable to temporarily remove any  
10 water pipes or appurtenances owned or controlled or operated by The City, the removal and replacing in their original positions of such water pipes and appurtenances will be done by the Department of Water Supply, Gas and Electricity for the Contractor at his cost and expense.

Protection of City's water pipes, etc.

XXXVII. The Contractor agrees to protect all water mains and service water pipes owned, controlled or operated by  
20 The City which may be affected in any manner by the work done under this contract, except as hereinbefore provided, and to protect all such water and service pipes from freezing, and if he fails to do so, the Commissioner of Water Supply, Gas and Electricity is hereby authorized to protect such main and service pipes, or in the event of their having suffered injury to replace such pipes, and recalk and repair the same immediately, as the work progresses, and the cost thereof shall be charged to the Contractor; the cost so charged shall be deducted from any sum or sums due  
30 or to become due to the Contractor under this contract, and in case such sum or sums shall be insufficient to cover such cost, the Contractor will be liable for the balance.

Protection of gas and water mains and pipes, etc.

XXXVIII. The Contractor agrees to sustain in their places and protect from injury all water or gas mains, conduits, subways or service pipes, steam pipes and pneumatic pipes, and all sidewalks, curbs, stoops, areas, and all other property in the vicinity of his work, from direct or indirect injury by caving or  
40 otherwise, and he hereby assumes all expenses for direct or indirect damage which may be occasioned by injury to any of them, and he agrees to have at all times a sufficient quantity of timber and other necessary materials and appliances on the ground, and will use the same, as required, for bracing and sheeting the sides and ends of excavations, and for sustaining and supporting any and all pipes, conduits, subways, lamp-posts and lamps or other structures that are undermined, weakened, endangered or threat-

EXHIBIT C-29 (continued):

ened; and in case any damage or injury shall or may result to said pipes, conduits, subways, lamp-posts and lamps and other works or structures of any gas, electric, railroad or other company whatsoever, or to any private property, through or by reason of any negligence, wilfulness, carelessness or want of skill on the part of the Contractor, his agents or servants, the Contractor hereby agrees to pay such amount as may be sufficient to cover the expense and damages occasioned by such negligence, wilfulness, carelessness or unskillfulness, and that such amount shall be charged against him; and the President is hereby authorized to deduct and retain from any moneys which may be due, or which shall become due, under this Contract, a sum sufficient, in his judgment, to cover the cost of making good any such damages, expense or loss, and to apply said sum so deducted and retained to the requisite repairs or renewals, or to reimburse the parties damaged or injured.

20 Old water and gas pipes.

XXXIX. All iron, water and gas pipes which it becomes necessary to remove shall be considered the property of The City and will be piled by the Contractor in such part or parts of the streets as may be directed, unless notice to the contrary is given him in writing, in which case he will remove the same at his own expense.

Change of grade.

30 XL. In case the grade of the street shall be changed during the progress of the work, the Contractor will conform to the altered grade at the contract prices, as far as they are applicable; and for any work for which there is no contract price, the provisions in relation to work not provided for in this contract shall apply.

Measurement of work and material.

40 XLI. All quantities of work and materials to be paid for will be measured and determined, according to the plan and the working lines that may be given, and the specifications, when the work conforms thereto. No allowance will be made on any part of the work for any excess above the quantities required by such plan, lines and specifications. Should the dimensions of any part of the work, or of the materials, be less than those required by the plan, the actual quantities only will be allowed in measurement.

EXHIBIT C-29 (*continued*):

Payment on acceptance of work.

XLII. The Contractor will not be entitled to demand or receive payment for any portion of the work or materials unless the same has been fully completed in the manner set forth in this contract, and such completion duly certified by the Engineer in Charge of Sewers, and until each and every one of the stipulations  
10 hereinbefore mentioned is complied with, and the work completed to the satisfaction of the President and accepted by him, and the final certificate of completion and acceptance thereof, signed by the President and said Engineer, filed with the Comptroller. The City will pay to the Contractor on or before the expiration of thirty days from the filing of said final certificate of completion and acceptance in the office of the Comptroller, the whole of the moneys accruing to the Contractor, under this contract, except  
20 such sum or sums of money as shall be retained under any of the provisions herein contained for that purpose, or in any law of the State, or under any ordinance of The City passed prior to the date of this contract and now in force.

Moneys to be retained for repairs to unpaved streets.

It is hereby further agreed that The City shall be and is hereby authorized to retain out of the moneys payable to the Contractor, during a period of six months from the date of the final completion and the acceptance by the President of the work done under this contract the sum of \$0 06/100 for each linear foot of  
30 sewer, basin connection, and house connection constructed under this contract within unpaved streets, and the sum of \$0 12/100 for each linear foot constructed within streets repaired by the Contractor. And should the Contractor fail to make such repairs to the street surface as may become necessary by reason of the work done under this contract within two days of the date of service of notice upon him so to do, then the President may expend such sum or any part thereof in making such repairs.

Payment of retained moneys to be made after six months.

40 It is hereby further agreed that The City, upon the expiration of the said period of six months, will pay to the said party of the second part the whole or such part of the moneys retained as may remain after the expenses of making said repairs, in the manner aforesaid, shall have been paid therefrom.

EXHIBIT C-29 (continued) :

Termination of six months' period.

10 It is hereby further agreed that if the termination of the said period of six months after the completion and acceptance of the work done under this contract shall fall within the months of December, January, February or March, then and in that case the said months of December, January, February and March, or such part thereof as the President may determine, will not be included in the computation of said period of six months.

Final certificate to control.

20 XLIII. The action of the Engineer in Charge of Sewers, by which the Contractor is to be bound and concluded according to the terms of this Contract shall be that evidenced by said Engineer's final certificate, all prior certificates upon which eighty-five per centum (85%) payments may have been made being merely estimates, and subject to the corrections of such final certificate, which may be made without notice to the Contractor thereof, or of the measurements upon which the same is based.

85% payments.

30 XLIV. In case the amount of this contract, based on the Engineer's estimate and the contract prices, shall be five thousand dollars (\$5,000.00) or over, payment will be made to the Contractor by monthly installments of eighty-five Per Cent. (85%) of the estimated value of the work performed, provided the work is being prosecuted in conformity with the provisions of the contract, and in a manner satisfactory to the Engineer, in which case, however, the quantity returned shall be such that the amount paid will be fairly due and in accordance with the provisions and stipulations of this contract; provided, the amount of work done on each installment shall not be less than fifteen hundred dollars (\$1,500.00); and provided that The City may at all times reserve and retain out of said installments, or any of them, all such sum or sums as by the terms hereof or any act of the Legislature of the State of New York, or of any ordinance of The City of New York, 40 now in force, it is or may be authorized to reserve or retain; and provided that where the Contractor, although the lowest bidder in the gross calculation, is to receive unusual or extraordinary prices for any of the different items of the work when considered separately, nothing herein contained shall be construed to affect the right of the President to determine the amount that may be due from time to time, not necessarily by the prices agreed upon in this contract, but by causing an estimate to be made of the

EXHIBIT C-29 (*continued*):

value of the work done, taking as a basis of the calculations the whole amount of money that will have become due, according to the terms of this contract, when the whole work shall be completed.

If abandoned, etc.

10 Contract may be declared abandoned.

Completion of work to be undertaken by President.

XLV. The Contractor hereby agrees that if the work to be done under this contract shall be abandoned by him, or if this contract shall be assigned or the work sublet by him otherwise than as provided by the terms hereof, or if at any time the Engineer shall be of the opinion, and shall so certify, in writing, to the President that the performance of the contract is unnecessarily or unreasonably delayed, as evidenced by its actual rate  
20 of progress compared with the required progress (See Section XIV); or that the Contractor is wilfully violating any of the conditions or covenants of this contract or the specifications thereof, or is executing the same in bad faith, or not in accordance with the terms thereof, or that the work is not fully completed within the time designated in this contract for its completion, the President may declare this contract or any part thereof abandoned and notify the Contractor to discontinue all work or any part thereof under this contract, by a written notice to be  
30 served upon the Contractor either personally, or by leaving said notice at his residence, or with his agent in charge of the work, or in the manner provided in Section XLVI., or with any employee found on the work, and the Contractor agrees to thereupon discontinue said work or such part thereof, and he further agrees that the President shall thereupon have the power to contract for the completion of the contract in the manner prescribed by law, or to place such and so many persons as he may deem  
40 advisable, by contract or otherwise, to work at and complete the work declared abandoned, and to use such materials as he may find upon the line of the work, and to procure other materials for the completion of the same, and to charge the expense of said labor and materials to the Contractor; and it is further agreed that the expense so charged shall be deducted and paid by The City out of such moneys as may be due or may at any time thereafter become due to the Contractor under and by virtue of this contract, or any part thereof. And in case such expense shall exceed the amount which would have been payable under the contract if the same had been completed by the Contractor, he shall

EXHIBIT C-29 (*continued*):

and will pay the amount of such excess to The City. Should the Contractor fail to complete the work as stipulated herein, or should the contract be declared abandoned, he agrees to forfeit all money earned, but unpaid whether certified or not at the time of the abandonment of the contract. In case such expense shall be less than the sum which would have been payable under the Contract if the same had been completed by the Contractor, he  
10 agrees to forfeit all claim to the remainder; and when any particular part of the work is being carried on by the President, by contract or otherwise, under the provisions of this clause of the contract, the Contractor agrees to continue the remainder of the work in conformity with the terms of this contract and in such manner as in nowise to hinder or interfere with the persons or workman employed, as above provided, by the President, by contract or otherwise, to do any part of the work, or to complete the same under the provisions of this section of the contract.

20 Notice to Contractor.

XLVI. It is agreed that the residence or place of business, given in the bid upon which this contract is founded, is hereby designated as the place where all notices, letters and other communications shall be served, mailed or delivered. It is further agreed that any notice, letter or other communication addressed to the Contractor and delivered at the above-named place, or deposited in a post-paid wrapper in any post-office box regularly maintained by the post-office, shall be deemed sufficient service  
30 thereof upon the Contractor. It is also further agreed that the place named may be changed at any time by an instrument in writing, executed and acknowledged by the Contractor and delivered to the President. It is also further agreed that nothing herein contained shall be deemed to preclude or render inoperative the service of any notice, letter or other communication upon the Contractor personally.

Labor law.

40 XLVII. The Contractor agrees that he will comply with the provisions of "The Labor Law." He further agrees that no laborer, workman or mechanic in the employ of the Contractor, sub-contractor or other person doing or contracting to do the whole or a part of the work contemplated by the contract, shall be permitted or required to work more than eight hours in any one calendar day, except in cases of extraordinary emergency, caused by fire, flood or danger to life or property; that the wages

EXHIBIT C-29 (*continued*):

to be paid for a legal day's work to all classes of such laborers, workmen or mechanics upon public work or upon any material to be used thereupon shall not be less than the prevailing rate for a day's work in the same trade or occupation in the locality where such public work is being constructed. Each such laborer, workmen or mechanic shall receive the prevailing rate of wages. This contract shall be void and of no effect, unless the person or corporation, making or performing the same shall comply with the provisions of section 14 of the Labor Law.

No estoppel.

XLVIII. The City shall not, nor shall any Department or officer thereof be precluded or estopped by any return or certificate made or given by the President, any Engineer or other officer, agent or appointee of The City under any provision of this contract from at any time (either before or after the final completion and acceptance of the work and payment therefor pursuant to any such return or certificate) showing the true and correct amount, quality and character of the work done and materials furnished by the Contractor, or any other person under this contract, or from showing at any time that any such return or certificate is untrue and incorrect or improperly made in any particular, or that the work and materials, or any part thereof do not in fact conform to the contract; and The City shall not be precluded or estopped, notwithstanding any such return or certificate or payment in accordance therewith, from demanding and recovering from the Contractor such damages as it may sustain by reason of his failure to comply with the contract.

Understanding of plans and specifications.

XLIX. The Contractor hereby distinctly and expressly declares and acknowledges that, before the signing of this contract, he has carefully read the same, and the whole thereof, together with and in connection with the plan and specifications, and that he has made such examination of this contract and of said plan and specifications, and the location where said work is to be done, and such investigation of the work required to be done, and in regard to the material required to be furnished, as to enable him to thoroughly understand the intention of the same, and the requirements, covenants, agreements, stipulations and restrictions contained in this contract and in said plan and specifications; and distinctly agrees that he will not hereafter make any claim or demand upon The City, based upon or arising out of any alleged misunderstanding or misconception on his part of

EXHIBIT C-29 (continued):

the said requirements, covenants, stipulations and restrictions: and that any information given to the Contractor by the Engineer or others as to the quantities in the work, prior to, or during the progress of the work, shall have no bearing or effect whatsoever, upon the total amount of work to be paid for, in the final settlement.

10 Chap. 478, Laws 1916.

This contract shall be void and of no effect unless the person or corporation making or performing the same shall secure compensation for the benefit of, and keep insured during the life of this contract, the employees engaged thereon, in compliance with the provisions of Chapter 41 of the laws of 1914, known as the Workmen's Compensation Law, and acts amendatory thereof.

20 IN WITNESS WHEREOF, The President of the Borough of Queens has hereunto set his hand for and on behalf of The City of New York, and the Contractor has also hereunto set his or its hand the day and year herein first above written; and the President and Contractor have executed this agreement in triplicate; one part of which is to remain with the President, one other to be filed with the Comptroller of The City of New York, and the third to be delivered to the Contractor.

.....  
Acting President of the Borough of Queens.

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JOSEPH L. SIGRETTO & CO.,

By Joseph L. Sigretto,  
President.  
(Contractor (s)).

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EXHIBIT C-29 (*continued*):

The City and State of New York, ss:  
County of Queens

On this 27th day of April 1917, before me personally came Richard S. Newcombe to me known and known to me to be the Acting President of the Borough of Queens, of The City of New York, the person described as such in and who as such executed  
10 the foregoing instrument, and he acknowledged to me that he executed the same as said Acting President for the purposes therein mentioned.

WILLIAM P. BUCKLEY,  
Commissioner of Deeds, New York City.

The City and State of New York, ss:  
County of Queens

20 On this 23rd day of April, 1917, before me personally came Joseph L. Sigretto to me known and known to me to be the President of Joseph L. Sigretto and Co. who being by me duly sworn, did depose and say for himself that he resides in Orange, N. J.; that he is the President of Joseph L. Sigretto and Co., the corporation described in and which executed the above instrument; that he knew the corporate seal of said corporation; that the seal affixed to the said instrument is such corporate seal; that it was so affixed by order of the Board of Directors of said  
30 Joseph L. Sigretto and Co., and that, by like order, he thereunto signed his name and official designation.

WILLIAM P. BUCKLEY,  
Commissioner of Deeds, New York City.

KNOW ALL MEN BY THESE PRESENTS, That we Joseph L. Sigretto and Co., as principal, and National Surety Company as surety are held and firmly bound unto The City of New York, in the sum of THIRTY FIVE HUNDRED DOLLARS,  
40 lawful money of the United States of America, to be paid unto THE CITY OF NEW YORK, or to its certain attorneys, successors or assigns; for which payment, well and truly to be made, we and each of us do bind ourselves, and our several and respective heirs, executors, administrators and assigns, jointly and severally, firmly by these presents.

Signed, sealed and dated this 23rd day of April, 1917.

EXHIBIT C-29 (*continued*):

10 WHEREAS, The above bounden Joseph L. Sigretto and Co., by an instrument in writing, under their hands, and bearing even date with these presents, one part whereof is hereto annexed, have contracted with The City of New York, by the President of the Borough of Queens, to furnish all the labor and materials, and to excavate for, build, construct and in all respects complete sewer and appurtenances in Atlantic Avenue (north side) from Willard (Vanderveer) Avenue to Freedom Avenue, and in Hatch Avenue from Atlantic Avenue, north side, to Fulton Street, Fourth Ward, together with all the work incidental thereto, as is fully and at large set forth and described in the contract aforesaid.

20 NOW, THEREFORE, The condition of the above obligation is such that if the said above bounden Joseph L. Sigretto and Co and its, his or their heirs, executors, administrators and assigns, or any or either of them, shall well and truly, and in a good, sufficient and workmanlike manner, perform or cause to be performed the said contract, and each and every of the covenants, promises, agreements and provisions therein contained on their part to be performed, and complete the same within the period therein stipulated, and in each and every respect comply with the conditions therein contained, then this obligation to be void; otherwise, to remain in full force and virtue.

Joseph L. Sigretto & Co. [L. S.]

30 By JOSEPH L. SIGRETTO [L.S.]  
President.

National Surety Company [L. S.]

By FRANK T. GILSON [L. S.]  
Resident Vice-President.

Attest L. W. FITZGERALD  
Res. Asst. Secretary.

EXHIBIT C-29 (*continued*):

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

On this 23rd day of April, 1917, before me personally came Joseph L. Sigretto to me known and known to me to be the President of Joseph L. Sigretto and Co. who, being by me duly sworn, did depose and say for himself that he resides in Orange, N. J.;  
10 That he is the President of Joseph L. Sigretto and Co., the corporation described in, and which executed the above instrument, that he knew the corporate seal of said corporation; that the seal affixed to the said instrument is such corporate seal: that it was so affixed by order of the Board of Directors of said Joseph L. Sigretto and Co., and that by like order he thereto signed his name and official designation.

WILLIAM P. BUCKLEY,  
Commissioner of Deeds, New York City.

20

STATE OF NEW YORK, ss.:  
COUNTY OF NEW YORK

On April 25, 1917, before me personally appeared FRANK T. GILSON, Resident Vice-President of the NATIONAL SURETY COMPANY, with whom I am personally acquainted, who, being by me duly sworn, said that he is the Resident Vice-President of the NATIONAL SURETY COMPANY, the corporation described in and which executed the within instrument; that  
30 he knows the corporate seal of said Company; that the seal affixed to the within instrument is such corporate seal; that it was affixed by order of the Board of Directors of said Company, and that he signed said instrument as Resident Vice-President of said Company by like authority; and that the liabilities of said Company, do not exceed its assets as determined by an audit of the Company's annual statement filed with the Superintendent of Insurance of the State of New York and certified to by said Superintendent, pursuant to Section 2 of Chapter 182 of the Laws  
40 of the State of New York for the year 1913, amending section 182 of chapter 33 of the Laws of the State of New York for the year 1909 constituting chapter 28 of the Consolidated Laws of the State of New York. And said FRANK T. GILSON further said that he is acquainted with L. W. FITZGERALD and knows him to be the Resident Assistant Secretary of said Company; that the signature of the said L. W. FITZGERALD subscribed to the said instrument is in the genuine handwriting of the said L. W.

EXHIBIT C-29 (*continued*):

FITZGERALD and was thereto subscribed by the like order of the said Board of Directors and in the presence of him, the said Resident Vice-President.

CHARLES J. KOCH,

Notary Public, For Kings County, No. 33; Certificate filed in New York Co. No. 156; Bronx No. 10, Queens No. 76, Richmond & Westchester Counties; Kings County Register's Office No. 8025; New York County Register's Office No. 8139; Bronx County Register's Office No. 823; My Commission expires March 30, 1918.

10

COPY OF BY-LAW

BE IT REMEMBERED: That at a regular meeting of the Board of Directors of the NATIONAL SURETY COMPANY, duly called and held on the sixth day of February, 1912, a quorum being present, the following By-Law was adopted:

20

ARTICLE XIII.

Section I. *Signatures required.*—All bonds, recognizances, or contracts of indemnity, policies of insurance, and all other writings obligatory in the nature thereof, shall be signed by the President, a Vice-President, a Resident Vice-President, or Attorney-in-Fact, and shall have the seal of the Company affixed thereto, duly attested by the Secretary, an Assistant Secretary, or Resident Assistant Secretary. All Vice-Presidents and Resident Vice-Presidents shall each have authority to sign such instruments, whether the President be absent or incapacitated, or not, and the Assistant Secretaries and Resident Assistant Secretaries shall each have authority to seal and attest such instruments, whether the Secretary be absent or incapacitated, or not; and the Attorneys-in-Fact shall each have authority, in the discretion of such Attorneys-in-Fact, to affix to such instruments an impression of the Company's seal, whether the Secretary be absent or incapacitated, or not, or to attach the individual seal of the Attorney-in-Fact thereto, or to use the scroll of the Attorney-in-Fact, or a wafer, wax, or other similar adhesive substance affixed thereto, or a seal of paper or other similar substance affixed thereto by mucilage, or other adhesive substance, or use the word "seal" or the letters "L. S." opposite the signature of such Attorneys-in-Fact, as the case may be.

30

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EXHIBIT C-29 (continued):

STATE OF NEW YORK,  
COUNTY OF NEW YORK, ss.:

I, L. W. FITZGERALD, Resident Assistant Secretary of the NATIONAL SURETY COMPANY, have compared the foregoing By-Law with the original thereof, as recorded in the Minute Book of said Company, and do certify that the same is a correct and true transcript therefrom, and of the whole of Article XIII, Section I of said original By-Law.

Given under my hand and the seal of the Company, in the County of New York, April 25, 1917.

L. W. FITZGERALD,  
Resident Assistant Secretary.

For use in New York and other states which do not require published figures to conform to statement furnished the department of such state after audit by them.

NATIONAL SURETY COMPANY OF NEW YORK

Financial Statement, December 30th, 1916.

WM. B. JOYCE, President. HUBERT J. HEWITT, Secretary.

ASSETS

Cash in Banks and Offices .....	\$2,475,272.31
Government, Municipal and Other Bonds, and Stocks .....	8,734,216.18
Real Estate, Mortgages and Collateral Loans .....	264,157.99
Unpaid Premiums (excluding Premiums 90 days overdue) .....	962,208.57
Accrued Interest and Accounts Receivable .....	505,057.52
Total.	\$12,940,912.57

LIABILITIES.

Unearned Premium Reserve .....	\$2,780,723.87
Contingent Claim and Expense Reserve (Less Re- insurance) .....	1,079,726.62
Reserve for taxes and Unpaid Commissions (not due) .....	287,026.46
Accounts Payable and Expenses Incurred (not due)	157,339.87
Dividend Declared (Payable Jan. 2nd, 1917) .....	90,000.00
Capital Stock .....	4,000,000.00
Surplus .....	4,546,095.75
Total,	\$12,940,912.57

EXHIBIT C-29 (continued):

STATE OF NEW YORK,  
COUNTY OF NEW YORK, ss:

L. W. FITZGERALD being duly sworn, says: That he is Resident Assistant Secretary of the NATIONAL SURETY COMPANY, that said Company is a Corporation duly organized, existing, and engaged in business as a Surety by virtue of the Laws of the State of New York, and has duly complied with all the requirements of the Laws of said State and of the Laws of the State of New York applicable to said Company, and is duly qualified to act as Surety under such Laws; that said Company has also complied with and is duly qualified to act as Surety under the Act of August 13, 1894, entitled, "An Act Relative to Recognizances, Stipulations, Bonds and Undertakings, and To Allow Certain Corporations To be Accepted As Surety Thereon," as amended by the Act of Congress of March 23, 1910. That the foregoing is a full, true and correct statement of the financial condition of said Company on the 30th day of December, 1916.

L. W. FITZGERALD,  
Resident Assistant Secretary.

Sworn to before me this April 25, 1917,

CHARLES J. KOCH,  
Notary Public For Kings County, No. 33; Certificate filed in New York Co. No. 156; Bronx No. 10, Queens No. 76, Richmond & Westchester Counties; Kings County Register's Office No. 8025; New York County Register's Office No. 8139; Bronx County Register's Office No. 823; My Commission expires March 30, 1918.

FUNDS

PRESIDENT'S CERTIFICATE

It is hereby certified that the estimated cost of the work and materials required by the within contract is NINE THOUSAND AND NINETY TWO AND 10/100 DOLLARS, (\$9,092 10/100, and is chargeable to the Street Improvement Fund of The City of New York.

.....  
Acting President of the Borough of Queens.

The City of New York, April 27th, 1917.

EXHIBIT C-29 (continued):

SPECIFICATIONS

TRENCHES

Length of trench.

1. Unless otherwise directed or permitted not more than 200 feet of any trench in advance of the end of the built sewer shall be open at any time, and unless written permission to the contrary is given, the trench shall be excavated to its full depth for a distance of at least 20 feet more than the minimum length of sewer permitted to be laid in it. (See paragraphs 159 and 182.) Trenches for house connection drains shall not be open on both sides of the street at the same time, unless permission has previously been given to close the street. Unless otherwise directed each trench for basin connections and house connection drains shall be fully excavated for its entire length before any pipes are laid therein.

Sheeting and bracing.

2. Where necessary the sides of the trenches and excavations shall be supported by adequate sheeting and bracing. Unless specially permitted sheeting against which concrete is placed shall not be removed and will not be paid for. The Contractor will be held accountable and responsible for the sufficiency of all sheeting and bracing used, and for all damage to persons or property resulting from the improper quality, strength, placing, maintaining or removing of the same.

Sheeting in soft material.

3. Where the material to be excavated is of such a character as to render it necessary, the sheeting shall be closely driven and to such depth below the bottom of the sewer as may be directed.

Tunneling.

4. All work shall be done in open trenches or excavations; no tunneling shall be done except with the consent of the Engineer.

Trees and stumps.

5. The Contractor shall grub and clear the surface over the trenches and excavations of all trees and stumps and remove the same from the work.

EXHIBIT C-29 (*continued*):

Material to be disinfected.

6. If required, any or all of the excavated material shall be satisfactorily disinfected or deodorized or immediately removed from the work.

Roadway, sidewalks, etc., to be kept clear.

- 10           7. The excavated material and materials of construction shall be so deposited, and the work shall be so conducted as to leave open and free for traffic all crosswalks, a space on each sidewalk not less than one-third the width of such sidewalk and unless permission is given to the contrary a roadway not less than 8 feet wide for the free passage of vehicles. Street hydrants, water gates, fire alarm boxes and letter boxes shall be kept accessible for use. During the progress of the work the Contractor shall maintain such crosswalks, sidewalks and roadways in satisfactory condition, and the work shall at all times be so conducted  
20 as to cause a minimum of inconvenience to public travel, and permit of safe and convenient access to private and public property along the line of the work.

Surplus material.

- 30           8. If all of the excavated material cannot be stored on the street in such a manner as to maintain the traffic conditions hereinbefore specified, the surplus shall be removed from the work and stored. After the construction of the sewer, so much of this material as is of satisfactory quality and necessary for the purpose shall be brought back and used for backfilling the trench.

Fence.

10. Where necessary a suitable fence shall be placed along the sides of the trench to keep the street safe for traffic.

Temporary bridges.

- 40           11. Where any crosswalk is intersected by the trench, it shall be temporarily replaced by a substantial timber bridge not less than 3 feet wide, with side railings. Where required, suitable temporary bridges for vehicles shall be provided and maintained across the trench.



EXHIBIT C-29 (*continued*):

Disposal of water from trenches.

12. The Contractor shall at all times during the progress of the work keep the trenches and excavations free from water. The water from the trenches and excavations shall be disposed of in such a manner as will not cause injury to the public health, nor to public or private property, nor to the work completed or in progress, nor to the surface of the streets, nor cause any interference with the use of the same by the public.

Cost to be covered.

13. The cost of all labor required to be done and all materials required to be furnished in the performance of all the work specified in paragraphs 1 to 12 inclusive, except as otherwise provided, shall be covered by all the contract prices for all the items for which there are contract prices.

20

EARTH EXCAVATION.

14. Earth excavation shall include the removal of all material other than rock as hereinafter defined.

Width of trench for sewers, etc.

15. The minimum widths of trenches in earth, for pipe sewers, basin connections, house connection and other drains not over 18 inches in diameter, shall be such as to give a clearance inside the sheeting of 8 inches on each side of the pipe. The minimum widths of trenches in earth, inside the sheeting, for other sewers shall be the greatest external width of the structures, including the necessary forms, to be built therein.

30

16. Where a manhole or other appurtenance or the foundation therefor extends beyond the exterior lines of the sewer or its foundation, the minimum excavation in earth, required for the same shall be that contained in a prism with vertical sides and a horizontal section equal to the smallest rectangle which will enclose such appurtenance and its foundation.

40

Excavation for receiving basins, etc.

17. The minimum dimensions of the excavation in earth, for brick receiving basins, inlet basins, shall be such as to give a clearance inside the sheeting of 1 foot on all sides, above the foundation, but in all such cases the excavation shall be large enough to include the foundations for such structures shown on

EXHIBIT C-29 (*continued*):

the plan. The excavation for concrete receiving basins, catch basins shall be of such dimensions as to permit the proper placing and removal of the necessary forms.

Depth of trenches.

- 10 18. The trenches shall be excavated to the depths required for the foundations of the sewers and appurtenances shown on the plan, and where the conditions are such as to make it necessary, to such additional depths as may be directed. Where pipe is laid without a cradle the bottom of the trenches shall be excavated to fit the lower third of the pipe, and excavations shall be made to receive the hubs. All irregularities in the bottoms of the trenches shall be filled up to the required grade with suitable material.

Cost to be covered.

- 20 19. The cost of all labor required to be done and all materials required to be furnished in the performance of all the work specified in paragraphs 15 to 18 inclusive, except as otherwise provided, shall be covered by all the contract prices for all the items for which there are contract prices.

ROCK EXCAVATION.

20. Rock excavation shall include the excavation and removal of the following materials:

- 30 (a) Rock which shall be determined to be of such a character as to warrant its removal by blasting, in order to insure the prompt and proper prosecution of the work.

(b) Boulders and pieces of rock, masonry in mortar and concrete, each of which contains 1 cubic yard or more, except the masonry and concrete of old sewers and their appurtenances.

- 40 21. Pieces of rock, masonry, concrete or boulders, which fall or slide into the trench from beyond the lines thereof, as herein defined, will not be measured, and the cost of the removal of the same shall be covered by all the contract prices for all the items for which there are contract prices.

BACKFILLING.

Backfilling around sewers, etc.

30. Unless otherwise specified or directed, all trenches and excavations shall be backfilled immediately after the struc-

EXHIBIT C-29 (*continued*):

tures are built therein. For a depth of at least 2 feet over the top of the sewer, basin connection, house connection or other drain, the material for backfilling trenches as excavated, shall be clean earth, sand or rock dust. It shall be carefully deposited in uniform layers not exceeding 6 inches in depth, and unless otherwise permitted, each layer shall be carefully and solidly tamped with appropriate tools in such a manner as to avoid injuring or  
10 disturbing the completed work.

Backfilling for remainder of trench.

31. Backfilling for the remainder of the trenches as excavated, shall be proved material free from organic matter and containing no stone over 10 inches in their largest dimensions. Any stones shall be so distributed through the mass that all interstices are filled with the fine material. This backfilling shall be deposited as directed, and unless otherwise permitted, shall  
20 be spread in layers and solidly tamped.

Backfilling around manholes, receiving basins, etc.

32. Backfilling within 2 feet of manholes, house connection drains, receiving basins, inlet basins, and other structures shall be of the same quality as that specified in paragraph 30. It shall be uniformly deposited on all sides and unless otherwise permitted, solidly tamped in such a manner as to avoid injuring the structures or producing unequal pressures thereon.

30 Puddling.

33. Backfilling shall, if required, be flooded or puddled with water as the work progresses, instead of being tamped.

34. When sheeting is drawn, all cavities remaining in or adjoining the trench shall be solidly filled. When sheeting is left in place all cavities behind such sheeting shall be solidly filled as directed.

Deficiency of filling.

40 35. Unless otherwise shown on the plan, the trenches shall be backfilled to the height of the surface of the ground as it existed at the commencement of the work. Should there be a deficiency of proper material for the purpose, the Contractor shall furnish and place such additional material as may be required.

EXHIBIT C-29 (*continued*):

Temporary bulkheads.

36. For retaining the backfilling only temporary bulkheads will be allowed over sewers, basin connections and drains. Such bulkheads shall not be of stone, and they shall be removed as the trenches are backfilled.

10 Curves, branches, etc., not to be covered.

37. Basin connections, house and sewer connections and intersections, ends of sewers and branches shall not be covered until the Engineer shall have inspected, measured and located the same, and given permission to backfill the trenches over them.

Removal of surplus material.

20 38. As the trenches are backfilled, the Contractor shall remove all surplus material and regrade and leave free, clear and in good order all roadways and sidewalks to within . . . . . feet of the end of the completed work. During the progress of and until the final acceptance of the work, he shall maintain in good and safe condition the surface of the street over all the trenches, and promptly fill all depressions over and adjoining the trenches caused by settlement of the backfilling. In case of failure or neglect on the part of the Contractor to comply with the requirements of this paragraph within 24 hours after the service upon him of a written notice so to do, the President may furnish all materials and do all work required, and the cost thereof will be charged to the Contractor and deducted from any moneys due or to become due him under this contract. All surplus material or any part thereof shall, if required, be deposited as directed on the streets and avenues within the limits of this contract where the same are below grade, and in such a manner as to leave the surfaces of the filled material even.

30

Cost covered.

40 39. The cost of all labor required to be done and all materials required to be furnished in the performance of all the work specified in paragraphs 30 to 38 inclusive, shall be covered by all the contract prices for all the items for which there are contract prices.

CEMENT.

40. All cement used in the work shall be a high grade Portland cement of a well-established and approved brand. It

EXHIBIT C-29 (*continued*):

shall be the product obtained by finely pulverizing clinker produced by calcining to incipient fusion, an intimate mixture of properly proportioned argillaceous and calcareous substances, with only such additions subsequent to calcining as may be necessary to control certain properties. Such additions shall not exceed 3 per cent. by weight, of the calcined product.

10 Specific gravity; weight.

41. The cement shall have a specific gravity of not less than 3.10 after being thoroughly dried at 212° F. It shall weigh not less than 380 pounds net, to the barrel, 4 bags of 95 pounds each being considered equivalent to a barrel.

Fineness.

20 42. The cement shall be dry, finely ground, of uniform color and free for lumps. It shall leave a residue of not more than 8 per cent. by weight, when passed through a No. 100 sieve, and not more than 25 per cent. when passed through a No. 200 sieve.

Tensile strength.

43. Standard briquettes shall develop within the periods specified, tensile strength not less than that shown in the following table.

Neat Cement:

30 24 hours ..... 175 pounds per-sq. in.  
7 days (1 day in moist air, 6 days in  
water) ..... 500 pounds per sq. in.  
28 days (1 day in moist air, 27 days  
in water) ..... 600 pounds per sq. in.

Mortar consisting of 1 part cement and 3 parts of Standard Ottawa Sand, by weight:

40 7 days (1 day in moist air, 6 days in  
water) ..... 180 pounds per sq. in.  
28 days (1 day in moist air, 27 days  
in water) ..... 225 pounds per sq. in.

The average of the tensile strengths developed at each age by the briquettes in any set made from one sample will be considered the strength of the sample at that age, excluding any results that are manifestly faulty. The average strength of briquettes at 28

EXHIBIT C-29 (*continued*):

days shall be greater than the average strength at 7 days, and if tests are made after 28 days the strength shall be not less than that at 28 days.

Soundness.

- 10 44. Pats of neat cement when tested for constancy of volume or soundness shall remain firm and hard and show no sign of checking, cracking, distortion or desintegration.

Setting.

45. Unless otherwise required, the cement shall not develop initial set in less than 30 minutes, and shall develop final set in not less than 1 hour nor more than 10 hours. Quick-setting cement of an approved brand shall, if required, be kept on the work in sufficient quantity to provide for any contingency requiring the use of the same.

- 20 Testing.

46. The cement will be subjected to such tests as the Engineer may deem necessary, and such tests will be made in accordance with the methods recommended by the Committee on Uniform Tests of Cement of the American Society of Civil Engineers, except that the time of setting will usually be determined by means of the Gilmore needles. In case of dispute as to the time of setting, this test will be made by means of the Vicat needle.

- 30 Retesting.

47. Any cement which shall have been kept in storage after testing for a sufficient time to warrant it, shall be retested. Any prior acceptance shall be considered void and the acceptance or rejection of the cement shall depend upon the results of the latest tests.

Approval of brand may be rescinded.

- 40 48. The Engineer may at any time rescind the approval of any brand of cement that develops objectionable qualities.

Samples.

49. The Contractor shall notify the Engineer of the arrival of cement on the work, and furnish such facilities as may be required for obtaining samples for testing. Samples will be

EXHIBIT C-29 (*continued*) :

taken so as to fairly represent the material. The number of packages sampled and the quantity to be taken from each will depend upon the importance of the work and the number of tests to be made.

Delivery and storing.

- 10           50. Cement shall be delivered on the work in barrels or approved bags of uniform size, with the brand and the name of the manufacturer plainly marked thereon; it shall be immediately stored in a dry place and carefully protected from the weather. A sufficient stock of cement shall be kept on the work in advance of the necessity for its use to permit of the making of the required seven day tests. Except by written permission, no cement shall be used before it has been tested and accepted, and any concrete or masonry which may have been made under such permission with cement that is subsequently rejected, shall be  
20 removed and replaced by the Contractor, at his own expense, with concrete or masonry made of accepted cement.

Cost to be covered.

51. The cost of furnishing, storing and incorporating cement in the work, and the cost of samples required for testing, shall be covered by the contract prices for the structures or classes of work in connection with which the cement is used.

MORTAR.

- 30           52. All mortar used in the work, unless otherwise specified, shall be composed of 1 volume of cement, as in the original package, and  $2\frac{1}{2}$  volumes of sand. Where required, mortar of cement and sand in other proportions or mortar of neat cement shall be used as directed.

Sand.

- 40           53. Sand shall be composed of grains of clean, sharp quartz, not softer than hard limestone. It shall be moderately coarse and preferably made up of grains of varying size not exceeding one-quarter ( $\frac{1}{4}$ ) inch producing a mass with low percentage of voids. It shall not contain, in all, more than five (5) per cent, by volume of clay, loam, mica, scales, silt, or other objectionable inorganic matter, nor more than one (1) per cent. of organic matter.

EXHIBIT C-29 (*continued*):

Tests may also be made of the cement and sand used in the proportions of one (1) part cement to three (3) parts sand, and these tests must show at least 70 per cent. of the strength of the mortar made with the cement and standard sand, or the sand may be rejected.

Mixing.

- 10        54. Mortar shall be mixed in a suitable box or on a tight platform, and never upon the pavement or ground. The cement and sand shall be thoroughly mixed dry, until the mixture has a uniform color. Clean, fresh water shall then be added and the mass worked until a mortar, which is uniform and of the required consistency is produced. The mortar shall be mixed in no greater quantity than is required for the work in hand, and any that has set sufficiently to require retempering shall not be used.

20        Freezing weather.

55. The mixing and use of mortar in freezing weather shall be subject to the same requirements as hereinafter specified for mixing and placing concrete under similar conditions.

Cost covered.

- 30        56. The cost of all labor and materials required to furnish and place the mortar in the work, as specified, shall be covered by the contract price for the structure or class of work in connection with which the mortar is used.

CONCRETE.

Class A concrete.

57. Class A concrete shall be made of 1 part of cement, 2 parts of sand and 4 parts of broken stone or gravel.
- 40        58. Broken stone for Class A concrete shall be approved trap rock, dense fine-grained blue limestone or granite broken into roughly cubical or pyramidal fragments. Broken stone which contains dust, loam, clay, organic matter or other improper substances shall not be used. Broken stone for Class A concrete shall be the run of the crusher that will pass through a screen with circular openings  $1\frac{1}{4}$  inches in diameter and shall be retained on a screen with openings  $\frac{1}{8}$ -inch in diameter. Gravel shall be equal in quantity to North Shore Long Island gravel, shall be clean and sound, and shall be of the sizes herein specified for broken stone.



EXHIBIT C-29 (*continued*):

Measuring ingredients.

67. For the purpose of determining the proportions of the materials for concrete, each bag of cement will be considered as containing 9/10 cubic foot, and the other ingredients shall be measured by an approved method.

10 Water.

68. Only clean fresh water shall be used for concrete.

Mixing.

69. Unless permitted to be mixed by hand, concrete shall be mixed in approved mechanical batch mixers, so constructed and operated that the ingredients of the concrete may be accurately measured and thoroughly mixed. Enough water shall be added during the mixing to bring the concrete to the required consistency, which generally shall be such that the concrete may be  
20 poured into place without causing the separation of the stones from the mortar. When concrete is mixed by hand the broken stone or gravel shall be spread on a tight platform in a bed about 6 inches deep and shall be thoroughly wetted. The cement and sand shall be mixed dry on a suitable platform, until the mixture has a uniform color. This mixture shall be spread evenly on the bed of wet stone, water added, and the entire mass turned until each piece of stone is entirely coated with mortar and a concrete  
30 produced which is uniform and of the consistency herein specified for machine mixed concrete. When a comparatively dry concrete is required it shall be mixed to such consistency as may be directed.

Placing concrete.

70. Concrete shall be mixed only in such quantity as is required for the work in hand, and any that has set sufficiently to require retempering shall not be used. Any concrete in which the water has separated from the solid matter shall be satisfactorily remixed before being placed. The concrete shall be so  
40 deposited in the work as to prevent the separation of the stone from the mortar. It shall be deposited in as nearly a continuous operation as practicable and shall be tamped or spaded with suitable tools to expel air bubbles and produce a dense and compact mass. When the operation of placing concrete is interrupted the concrete in the work, shall, if required, be confined by suitable temporary forms or bulkheads. When concrete is to sur-

EXHIBIT C-29 (*continued*):

round reinforcing metal, structural steel, or wire netting, it shall be so deposited as to work closely around such material. When a comparatively dry concrete is used it shall be deposited in horizontal layers not exceeding 6 inches in depth and solidly tamped.

Joining old and new concrete.

- 10           71. When fresh concrete is to be laid on or adjoining concrete already set, the surface of the latter shall be thoroughly cleaned, washed, and roughened, and coated with a grout of neat cement before the fresh concrete is deposited.

Forms and centres.

- 20           72. The Contractor shall provide all necessary forms and centres for shaping concrete wherever used. They shall be true to the required shapes and sizes, strong enough and so secured in place as to withstand all operations incidental to placing the concrete, and watertight, and the faces against which the concrete is to be placed shall be satisfactorily smooth and clean. Timber used in forms and centres for exposed faces of concrete shall be seasoned stock. Unless otherwise permitted, those surfaces of forms and centres which will be in contact with concrete shall be coated as directed with an approval lubricant; when no lubricant is required such surfaces shall be thoroughly wetted just before the concrete is placed.

- 30           Removal of forms and centres.

73. The forms and centres shall be left in place until the concrete has set sufficiently to permit their removal without danger to the structure, and until so much of the backfilling or embankment as may be directed has been put in place. No forms or centres shall be struck or removed until permission to do so has been given.

Exposed surfaces.

- 40           74. Special care shall be used to secure a smooth and uniform finish to the surfaces of concrete which will be exposed in the completed structure. Immediately after the removal of the forms such surfaces, if uneven, shall be rubbed smooth to a uniform and satisfactory finish, all exposed edges of concrete shall be neatly rounded as directed, and if any voids, projections or other imperfections be found, such defects shall at once be

EXHIBIT C-29 (*continued*):

corrected by tooling, cutting out and filling with mortar, or otherwise, as directed.

Expansion joints.

75. Expansion joints shall be provided in such manner and at such places as are shown on the plan or as may be directed. All unavoidable joints shall be made as shown on the plan or as directed.

Freezing weather.

77. In freezing weather, until the temperature falls to 24 degrees Fahrenheit the water used for concrete shall, if directed, be heated to an approved temperature, and if directed, one per cent. by weight of salt shall be added to the water for each degree Fahrenheit that the temperature of the air is below 32 degrees Fahrenheit. The other materials for the concrete shall be heated sufficiently to remove all frost and ice. No concrete shall be laid when the temperature of the air is below 24 degrees Fahrenheit.

Protection.

78. Concrete shall be allowed to set for such time as may be directed before being worked or walked upon, or before filling, backfilling or other material is placed upon or against it. It shall not be flooded with water until it has sufficiently set. Concrete shall be carefully protected from injury, from freezing and from the drying effects of the sun and wind by covering it with canvas, bagging, hay or other suitable and approved materials. Such protection shall be placed as soon as the concrete is in condition to receive it, and except in freezing weather, the covering as well as the concrete shall be kept wet for such time as may be directed.

Prices to cover.

79. The cost of all concrete and the requirements specified in connection therewith shall be covered by the contract price for the structure in connection with which it is used.

BRICK MASONRY.

Quality of bricks.

81. All bricks used in the work shall be sound and hard burned throughout, and of uniform size and quality. If required the bricks shall be culled immediately after they are brought on

EXHIBIT C-29 (*continued*):

the work and all bricks which are warped, cracked or of improper quality shall be at once removed. The proportion of bats permitted will be determined according to the character and location of the work in which they are to be used. When bricks are used as the lining for inverts of sewers they shall be specially selected, and no bats shall be used except for closers.

10 How laid.

83. Bricks shall be satisfactorily wet when being laid and each brick shall be laid in mortar so as to form full bed, end and side joints in one operation. The joints shall be not wider than  $\frac{3}{8}$  inch, except when the bricks are laid radially, in which case the narrowest part of the joint shall not exceed  $\frac{1}{4}$  inch. The bricks shall be laid in a workmanlike manner, true to line, and wherever practicable the joint shall be carefully struck and pointed on the inside. Brickwork shall be laid with a satisfactory bond, and as it progresses shall be racked back in courses, unless otherwise permitted.

Protection.

84. All fresh brickwork shall be carefully protected from freezing and from the drying effects of the sun and wind, and if required, it shall be sprinkled with water at such intervals and for such a time as may be directed. Brickwork shall be protected from injuries of all sorts, and all portions which may become damaged or may be found defective shall be repaired, or if directed, be removed and rebuilt.

Freezing weather.

85. In freezing weather bricks shall be heated sufficiently to remove all ice and frost.

Price to cover.

86. The cost of all brick masonry shall be covered by the contract price for the structure in connection with which it is used.

STEEL REINFORCEMENT BARS.

Shape.

112. Steel bars for reinforcing concrete shall be of such shape as to afford an approved mechanical bond with the concrete at frequent intervals and to insure intimate contact between the steel and concrete.

**EXHIBIT C-29 (continued):**

**Samples.**

113. The Contractor shall indicate the type of bars proposed to be used, and if required shall furnish samples thereof, and he is cautioned not to place the order for the bars until the type has been approved.

10 **Size.**

114. Each bar shall have a net cross sectional area equivalent to that designated on the plan or required, or it shall be the commercial size of the approved type of bar having a net cross sectional area next larger than that designated or required.

**Variation in weight.**

115. Reinforcement bars will be rejected if their actual weight varies more than 5 per cent. from their theoretical weight as shown by the manufacturer's tables.

20 **Quality.**

116. All steel for reinforcement bars shall be made by the open hearth process and shall conform to the latest revised Standard Specifications for Steel Reinforcement Bars adopted by the American Society for Testing Materials, and such tests as may be required, shall be made in accordance therewith, and at the places hereinafter specified. The chemical and physical properties of the steel shall be as follows:

30

Properties Considered	Structural Steel Grade		Hard Grade*		Cold Twisted Bars
	Plain Bars	Deformed Bars	Plain Bars	Deformed Bars	
Phosphorus, max.					
Bessemer .....	0.10	0.10	0.10	0.10	0.10
Open Hearth .....	0.05	0.05	0.05	0.05	0.05
Ultimate Tensile Strength, pounds per sq. in. ....	55,000-70,000	55,000-70,000	80,000 min.	50,000 min.	Recorded only
Yield Point, minimum pounds per sq. in. ....	33,000	33,000	50,000	50,000	55,000
Elongation, minimum per cent. in 8 inches .....	1,400,000	1,250,000	1,200,000	1,000,000	5 per cent.
	tens. str.	tens. str.	tens. str.	tens. str.	
Cold bend without fracture:					
Bars under ¾ in. in diam. or thickness .....	180° to diam. of 1t.	180° to diam. of 1t.	180° to diam. of 3t.	180° to diam. of 4t.	180° to diam. of 2t.
Bars ¾ in. in diam. or thickness and over ...	180° to diam. of 1t.	180° to diam. of 2t.	90° to diam. of 3t.	90° to diam. of 4t.	180° to diam. of 3t.

40

t: Nominal thickness or diameter of bar. \* The hard grade will be used only when specified.

EXHIBIT C-29 (*continued*):

117. Reinforcement bars shall be rolled from billets of new steel; they shall be straight and free from seams, flaws, cracks and imperfections of all kinds.

10 119. Test pieces 18 inches long may be cut from any of the bars delivered on the work, and the failure of any test piece to meet the specified requirements, or the failure of any bar when being bent will be sufficient cause for the rejection of all steel from the melt from which the test piece or bar was made.

Delivery and protection.

20 121. Bars shall be delivered in bundles, to each of which shall be securely wired a metal tag with the number of the melt from which the bars were made stamped thereon. The bars shall be protected at all times from mechanical injury and from the weather and when placed in the work they shall be free from dirt, scale-rust, paint and oil. Bars which are not to be embedded in concrete within a short time after being placed in the work shall, if directed, be immediately coated with a thin grout of equal parts of cement and sand.

Cutting and bending.

122. The bars shall be bent to the shapes shown on the plan and in conformity with approved templates. When bars are cut and bent on the work, the Contractor shall employ competent men and shall provide the necessary appliances for the purpose.

30 Placing.

123. All bars shall be as long as can be conveniently used, accurately bent, placed, spaced and jointed as shown or directed, and they shall be securely held in their required positions by approved devices until the concrete has been placed around them.

Price to cover.

40 125. The cost of all steel reinforcement bars and the requirements specified in connection therewith shall be covered by the contract price for the structure in connection with which it is used.

WROUGHT IRON.

Quality.

132. Wrought iron shall be double rolled, tough, fibrous and uniform in quality. It shall be thoroughly welded in rolling

EXHIBIT C-29 (*continued*):

and be free from surface defects. It shall have an ultimate tensile strength of at least 48,000 pounds per square inch, an elongation of at least 20 per cent. in 8 inches, and a fracture wholly fibrous. Specimens shall bend cold, with the fiber, through 180 degrees around a diameter equal to the thickness of the piece tested. When nicked and bent the fracture shall be at least 90 per cent. fibrous.

10 Galvanizing painting.

133. Exposed wrought iron shall be thoroughly and uniformly galvanized.

Price to cover.

134. The cost of all wrought iron and the requirements specified in connection therewith shall be covered by the contract price for the structure in connection with which it is used.

20

IRON CASTINGS.

Quality.

136. Iron castings shall be of the best foundry pig iron, gray, tough and free from cold shuts, blow holes and other imperfections. The weight shall be conspicuously painted by the manufacturer with white oil paint on each casting. The castings shall be sound, clean and neatly finished. Where required, castings shall be thoroughly coated with coal tar pitch varnish.

30 Cost covered.

137. The cost of all labor and materials required to furnish coat and place the castings as specified, shall be covered by the contract price for the structure or class of work in connection with which they are used.

TIMBER SHEETING.

Quality, placing, etc.

40 142. Timber sheeting and the rangers and braces for the same shall be of a satisfactory quality of timber and of sufficient size and strength to adequately support the sides of the trenches and excavations. Sheeting shall be driven in such a manner as to avoid cracking and splitting, and if required for the proper prosecution of the work, shall be tongued and grooved.

EXHIBIT C-29 (*continued*):

CONCRETE SEWERS.

Inverts.

Brick lining.

10 154. Inverts of concrete sewers shall be formed between transverse templets and shall be screeded. The templets shall be placed at such intervals as to divide the invert into sections of suitable size for convenient construction, and unless otherwise permitted, the concrete shall be deposited in alternate sections and allowed to set before the remaining sections are built. Un-  
20 less otherwise shown on the plan, a layer of mortar not less than  $\frac{1}{2}$ -inch thick shall be spread evenly and to a smoothly finished surface upon the concrete of the invert as soon as such concrete is in place. Where the radii of inverts are too short to permit screeding between templets, the inverts shall be shaped by means of suitable forms, which shall be removed as soon as the concrete has a sufficient set, and if required, the surfaces of inverts shall  
20 be floated or troweled to a smooth finish. The concrete for inverts shall be deposited continuously for their entire cross sections and for such longitudinal distances as may be convenient. Inverts shall be carefully protected from all injury during progress of the work.

Side walls.

30 155. Concrete in the side walls of sewers shall be deposited continuously to the height directed and for such longitudinal distances as may be convenient.

Roof.

40 156. Concrete in the roofs of sewers shall be deposited continuously for the full depths and widths of the roofs and for such longitudinal distances as may be convenient. The outer surfaces of roofs shall be finished with an excess of mortar and left true and smooth. They shall be covered and protected as specified in paragraph 78, and such covering shall remain thereon until the backfilling or embankment is placed.

Bulkheads.

157. While being deposited the concrete for sewers shall be confined by temporary, vertical bulkheads placed at such intervals longitudinally as may be required for convenient working. The bulkheads shall be so designed as to give an approved shape to the end of the section of concrete under construction, shall be



EXHIBIT C-29 (*continued*):

satisfactorily secured in place before the concrete is deposited, and shall remain in place until the concrete has set sufficiently to hold its shape.

Reinforcement.

158. Where shown on the plan concrete sewers shall be reinforced with metal of the dimensions and shapes shown, and of the quality and in the manner hereinbefore specified.

Minimum length of invert.

159. Unless otherwise permitted or ordered, not less than 16 feet of foundation or invert for concrete sewer shall be built at one operation.

Connections.

160. Connections and branches for lateral sewers and receiving basins shall be built in where shown on the plan or where directed. Such connections and branches shall be closed with bulkheads of brick masonry 8 inches thick unless otherwise shown on the plan. All necessary openings and bulkheads for branch sewers shall be built in concrete sewers where shown on the plan or where directed.

Measurements.

161. The lengths of concrete sewers will be determined by horizontal measurements, along their centre lines. No deductions will be made on account of openings at branches and man-holes. The measurement of a branch concrete sewer will be made from the inner surface of the wall of the main sewer through which it enters. A reducer will be paid for at the contract price for the sewer at the larger end thereof.

Prices to cover.

162. The contract prices for concrete sewers shall cover the cost of all necessary excavation (except rock); of furnishing, maintaining and removing all forms, centres, templets and temporary bulkheads; of all openings and bulkheads; of all back-filling; and of all labor and materials required to construct concrete sewers as shown by the normal sections on the plan and as specified.

VITRIFIED PIPE SEWERS.

Vitrified pipe.

168. Vitrified pipe sewers shall be built of shale or clay hub and spigot pipes with deep and wide sockets. They shall be

EXHIBIT C-29 (continued) :

thoroughly and perfectly burned, without warps, cracks or other imperfections, and shall be fully and smoothly salt-glazed over the entire inner and outer surfaces, except that the inside of the hub and the outside of the spigot may be unglazed for two-thirds the depth of the hub. On all other portions of the pipe the glazing shall completely cover and form an integral part of the pipe body. If not left unglazed the inside of the hub and the outside of the spigot shall be scored in 3 parallel lines extending completely around the circumference. When it is broken, vitrified pipe shall show dense and solid material, without serious cracks or laminations; it shall be of such toughness that it can be worked with a chisel and hammer, and when struck with a hammer, it shall have a metallic ring.

Identification marks.

169. Each pipe shall have clearly impressed on its outer surface the name of the manufacturer and of the factory in which it was made.

Shape and dimensions.

170. The sizes of the pipes are designated by their interior diameters. Each pipe shall be a cylinder with a circular section, and shall have a uniform thickness. The minimum lengths, thicknesses, depths of hubs and annular spaces for the respective sizes of pipe shall be as follows :

	Size	Length	Thickness	Depth of Socket	Annular Space
30	6.....	2 feet	5/8 inch	2 1/2 inches	5/8 inch
	8.....	3 "	3/4 "	2 3/4 "	5/8 "
	10.....	3 "	7/8 "	2 3/4 "	5/8 "
	12.....	3 "	1 "	3 "	5/8 "
	15.....	3 "	1 1/4 "	3 "	5/8 "
	18.....	3 "	1 1/2 "	3 1/4 "	5/8 "
	20.....	3 "	1 2/3 "	3 1/2 "	5/8 "
	22.....	3 "	1 5/6 "	3 3/4 "	5/8 "
40	24.....	3 "	2 inches	4 "	5/8 "
	27.....	2 1/2 "	2 1/4 "	4 "	3/4 "
	30.....	2 1/2 "	2 1/2 "	4 "	3/4 "
	33.....	2 1/2 "	2 5/8 "	5 "	1 1/4 "
	36.....	2 1/2 "	2 3/4 "	5 "	1 1/4 "
	42.....	2 1/2 "	3 1/2 "	5 "	1 1/4 "

EXHIBIT C-29 (continued):

Curves, bends, etc.

171. Where curved pipes are required they shall be furnished in either one-eighth or one-quarter bends of their respective sizes. Curved pipe, bends, siphons, and special pipe of the sizes and forms shown on the plan shall be furnished and laid, and unless otherwise provided they will be paid for at the contract prices for the corresponding sizes of vitrified pipe sewers.

Samples for testing.

172. Any or all of the following tests may be applied to samples selected from the pipe delivered on the work. For the purposes of making such tests as may be required the Contractor shall furnish and deliver when and where directed one length of pipe for each 200 feet of pipe sewer to be laid.

Crushing tests.

20 173. When supported at the bottom upon a knife edge one inch in width in such manner that an even bearing is provided throughout the whole length, exclusive of the bell, and pressure is applied at the crown uniformly through a similar knife edge, the various sizes of pipe shall withstand the following pressures:

	Diameter	Pressure
	6 inches .....	900 lbs. per lin. ft.
	8 " .....	900 " " " "
30	10 " .....	1,000 " " " "
	12 " .....	1,050 " " " "
	15 " .....	1,250 " " " "
	18 " .....	1,400 " " " "
	20 " .....	1,550 " " " "
	22 " .....	1,750 " " " "
	24 " .....	1,950 " " " "
	27 " .....	2,150 " " " "
	30 " .....	2,350 " " " "
	33 " .....	2,500 " " " "
40	36 " .....	2,800 " " " "
	42 " .....	3,200 " " " "

Drop weight test.

174. When supported on a dry sand bed 2 inches deep, all pipe shall withstand without cracking the impact from 2 blows of a cast iron ball weighing 8 pounds falling 18 inches. Spurs shall

EXHIBIT C-29 (*continued*):

resist without fracture the impact from 2 blows of such a ball falling 6 inches and striking on the extreme end of the hub of the spur.

Hydrostatic test.

- 10 175. When subjected to an internal hydrostatic pressure of 8 pounds per square inch, vitrified pipe shall show no percolation.

Absorption test.

176. After having been thoroughly dried and then immersed in water for 24 hours, sample pieces of pipe with all broken edges shall not absorb more than 4 per cent. of their weight of water.

Factory rejection.

- 20 177. The entire product of any pipe factory may be rejected when, in the judgment of the Engineer, the methods of manufacture fail to guarantee uniform results, or where the materials used are such as produce inferior pipe, as indicated by repeated failure to comply with the tests herein specified.

Cradles.

178. In earth trenches pipe sewers shall be laid in concrete cradles when required by the plan.

- 30 Without cradle.

179. When the sewer is to be laid without a cradle the trench shall be excavated as specified in paragraph 18 and the earth forming the bed carefully freed of stones. The pipe shall then be evenly bedded therein and the backfilling placed and firmly tamped in such a manner as to avoid disturbing the sewer.

Concrete cradle.

- 40 180. When the sewer is to be laid in a concrete cradle, the concrete for the full width of the cradle shall be deposited continuously to the height of the outside bottom of the pipe. Before the concrete has set the pipe shall be evenly bedded therein and the remainder of the concrete immediately deposited and carefully tamped in such a manner as to avoid disturbing the sewer.

EXHIBIT C-29 (*continued*):

How laid.

182. All pipes shall be laid with ends abutting and true to line and grade. The pipes shall be fitted together and matched so that when laid in the work they will form a sewer with a smooth and uniform invert. Unless otherwise permitted or directed, not less than 12 feet of pipe sewer shall be laid in one operation.

183. Unless otherwise shown on the plan, the joints of vitrified pipe sewers shall be made as hereinafter specified in paragraph 185.

Gasket and mortar joints.

185. Gasket and mortar joints shall be made in the following manner: A closely twisted hemp or oakum gasket of suitable diameter, in no case less than  $\frac{3}{4}$ -inch, and in one piece of sufficient length to pass around the pipe and lap at the top, shall be solidly rammed into the annular space between the pipes with a suitable calking tool. Before being placed, the gasket shall, if desired, be saturated with neat cement grout. The remainder of the space shall then be completely filled with plastic mortar mixed 1 to  $1\frac{1}{2}$ , and the joint wiped inside and finished to a smooth bevel outside.

Inspection of joints.

186. Unless otherwise permitted, at least 4 finished joints shall be left exposed for inspection throughout the working day, and the necessary staging for the protection of the exposed sewers and for the handling of excavated material shall be provided. A suitable ladder affording easy access for such inspection shall be furnished at every trench open for the proposed sewer.

Subgrade to be tested.

187. No pipe or the cradle therefor shall be laid or placed until the subgrade of the trench shall have been tested and found correct.

Sewer to be kept clean.

188. The interior of the sewer shall, as the work progresses, be cleared of all dirt, cement and superfluous materials of every description.

EXHIBIT C-29 (continued):

Backfilling.

189. Immediately after the sewer is laid the trench shall be backfilled as provided in paragraphs 30 to 38 inclusive and 186. No walking on or working upon the completed sewer (except as may be necessary in tamping the backfilling) will be permitted until the trench has been backfilled to a height of at least  
10 2 feet over the top of the sewer.

Temporary covers.

190. The exposed ends of pipe sewers shall be provided with approved temporary covers fitted to the pipe so as to exclude earth and other materials.

Branch pipes.

191. Branch pipes and connection pipes shall be of the same quality and dimensions, and laid in the same manner as  
20 specified for vitrified pipe sewers. Dead ends of pipes shall be closed with bulkheads of brick masonry 8 inches in thickness.

Connection with existing work.

192. Wherever the proposed sewer is to connect with an existing manhole in which there is a branch pipe which is damaged or of unsuitable size or in improper position, such pipe shall be removed and be replaced with a pipe of suitable size or be reset in the proper position. The pipe so substituted or reset will be  
30 paid for at the contract price, for the corresponding size of pipe sewer.

Pipes cut to fit masonry.

193. The ends of pipes which enter masonry shall be neatly cut to fit the face of the masonry. When directed, such cutting shall be done before the pipes are built in.

Measurement.

194. The length of pipe sewers to be paid for will be determined by horizontal measurements along their center lines, and  
40 no deductions will be made on account of openings at manholes.

Prices to cover.

195. The contract prices for vitrified pipe sewers shall cover the cost of all necessary excavation (except rock); of all cradles required; of all necessary trimmings, fitting and build-

EXHIBIT C-29 (*continued*):

ing into masonry; of all bulkheads; of all backfilling; of all samples furnished; and of all labor and materials required to furnish and lay the sewers complete in place, as shown on the plan and as specified.

BASIN CONNECTIONS.

10           206. The connections between inlets (new type) and basin manholes and between basin manholes and sewers or sewer manholes shall be of vitrified pipe of the size shown on the standard details on file in the Engineer's Office, Bureau of Sewers. The pipes shall be of the same quality and dimensions, and laid in the same manner as hereinbefore specified for vitrified pipe sewers.

Measurement.

20           207. The lengths of basin connections to be paid for will be determined by measurements along their axes.

Prices to cover.

208. The contract price for basin connections shall cover the cost of all necessary excavation (except rock); of all necessary trimming, fitting and building into concrete, or masonry; of all backfilling; and of all labor and materials required to furnish and lay the basin connections complete in place as specified.

30           SPURS FOR HOUSE CONNECTIONS.

213. Spurs for house connections shall be of vitrified pipe 6 inches in diameter, equal in quality and dimensions to that specified for vitrified pipe sewers.

In concrete sewers.

40           214. In concrete sewers spurs shall be built in as shown on the plan or as directed. They shall be hub and spigot pipes with the spigot end molded or cut to fit flush with the inner surface of the sewer, and of sufficient length to reach the exterior of the sewer.

In pipe sewers.

215. Pipes having 6-inch spurs with hubs molded thereon shall be furnished and laid in pipe sewers where shown on the plan or directed. Such pipes will be paid for at the contract

EXHIBIT C-29 (*continued*):

prices for vitrified pipe sewers, and the spurs will be paid for in addition at the contract price for spurs.

Covers.

10 216. The ends of all spurs not connected with drains shall be closed with approved covers. If required such covers shall be cemented in place, and when directed the covers shall be so cemented before the pipes are lowered into the trench.

Price to cover.

217. The contract price for spurs shall cover the cost of all labor and materials required to furnish and place the same as specified, and the cost of furnishing and cementing the covers for the same.

DRAINS FOR HOUSE CONNECTIONS.

20 218. Where shown on the plan or where directed, drains for house connections shall be built from the spurs in such a manner and for such distance as may be shown or directed.

Depth at curb.

219. House connections drains shall be laid with a minimum gradient of  $\frac{1}{4}$  inch to a foot, and wherever possible the depth from curb grade to the inner bottom of the drain at curb line shall be at least 8 feet.

30 Material.

220. Unless otherwise shown on the plan, drains for house connections shall be of vitrified pipe of the quality and dimensions specified for vitrified pipe sewers. The ends of the drains shall be closed with approved covers.

How laid.

40 221. All the requirements, as hereinbefore specified, relating to excavation, laying and backfilling of vitrified pipe sewers shall apply, as far as they are applicable, to drains for house connections.

Measurement.

222. The lengths of pipe drains for house connections to be paid for will be determined by measurement along their axes.



EXHIBIT C-29 (*continued*):

Price to cover.

223. The contract price for drains for house connections shall cover the cost of all necessary excavation (except rock); the cost of all backfilling; the cost of all covers, bends and specials required; and the cost of all labor and materials required to furnish and lay the drains for house connections complete in place, as specified.

MANHOLES.

227. The masonry or concrete for manholes shall be built to within such distances of the existing surface of the ground as directed.

Brick manholes.

228. Brick manholes shall be formed by means of templets placed at top and bottom with not less than 8 lines drawn between them, and they shall be smoothly and evenly plastered on the outside with a layer of mortar  $\frac{1}{2}$ -inch thick. When manholes extend above the existing surface of the ground, the entire exposed surface shall be coated with 2 coats of whitewash.

Concrete manholes.

229. Concrete manholes shall be built of the materials, sizes and dimensions shown on the plan.

30 Steps.

230. Galvanized wrought iron steps of the size and shape shown on the plan shall be firmly built into the manholes at vertical intervals of about 16 inches.

Head and cover.

231. The manhole head and cover shall be of cast iron, and unless otherwise shown on the plan, each head, exclusive of cover, shall weigh not less than 475 pounds and each cover shall weigh not less than 135 pounds. The weight of each head and cover shall be conspicuously painted thereon by the manufacturer with white oil paint. The head shall be set on the masonry or concrete in a full bed of stiff mortar.

Price to cover.

233. The contract price for manholes shall cover the cost of all necessary excavation (except rock); of all backfilling; of

EXHIBIT C-29 (continued) :

all plastering; of all whitewashing; of all steps; and of all labor and materials required to construct the same complete, in place, as shown on the plan and specified.

BASIN MANHOLES (NEW TYPE)

10 234. Basin Manholes (new type) shall be built of the materials, forms and dimensions, shown on the standard details on file in the Engineer's Office, Bureau of Sewers.

235. The contract price for basin manholes shall cover the cost of all necessary excavation, except rock, of all backfilling, of all labor and materials required to construct the basin manholes, complete in place as shown on the plan and specified, together with all necessary restoration of sidewalks.

INLETS (NEW TYPE).

20 243. Inlets and the heads therefor shall be of the materials, forms and dimensions shown on the standard details on file in the Engineer's Office, Bureau of Sewers.

244. The contract price for inlets (new type) shall cover the cost of all necessary excavation, except rock, of all backfilling, and of all labor and materials required to construct the inlets complete, in place, as shown on the plan and specified, together with all necessary curb adjustment.

30 RESTORATION OF SURFACE AND CLEANING UP.

Restoration of unpaved roadways, sidewalks, etc.

254. At such time as may be directed, all unpaved roadways, gutters and sidewalks affected by the work done under this contract shall be restored by the Contractor to the same condition in which they were at the time of the opening of bids for this contract.

40 Pavements, etc., restored by Contractor.

256. If required by the plan, roadway and sidewalk pavements, cross-walks, curbs, etc., shall be satisfactorily constructed and adjusted by the Contractor at such times as may be directed. Sidewalk pavements shall be restored in whole flags, squares or sections which shall correspond in quality and appearance with

EXHIBIT C-29 (*continued*) :

the original or adjoining flags, squares or sections. All work and materials used in such restoration and adjustment shall conform in all respects to the standard specifications now in use by the President for similar work and materials.

SPECIFICATIONS FOR THE RESTORATION OF WATER-  
BOUND MACADAM PAVEMENT.

10

After the grading has been completed a trench four (4) inches in depth shall be excavated to the width as shown on the plans, or as may be directed by the Engineer. The trench shall be in the center of the street as graded. The cross-section of the trench shall be parallel to the surface of the unfinished pavement which shall have a circular cross-section with a rise of one-half ( $\frac{1}{2}$ ) inch per foot of width from the edge of the pavement to the center of the roadway. Any improper material disclosed shall be removed and suitable material substituted therefor. The trench shall be rolled to a firm even surface throughout its cross-section and length with a steam roller.

20

Upon the completion of the rolling the surface of the trench shall have the required cross-section at the depth below the finished surface as stated heretofore. The intention is that the trench shall be kept free from water. If injury is done to material in bottom of trench by reason of water getting into it such material must be replaced by suitable material which shall then be rolled.

30

The new broken stone shall be trap rock roughly cubical or pyramidal fragments hard, sound, durable and with sharp edges. It shall be free from dust, dirt, loam, disintegrated stone or foreign matter of any kind. Such of the old stone found in the old pavement complying with the above requirements may be used after it has been cleaned.

40

The stone shall be composed of what is known as commercial one and one-half ( $1\frac{1}{2}$ ) inch stone complying with the following requirements:—

One and one-half ( $1\frac{1}{2}$ ) inch broken stone shall be the product of the crusher that will pass through a screen having square or circular openings two and one-half ( $2\frac{1}{2}$ ) inches in diameter and be retained on screen with square or circular openings one and one-half ( $1\frac{1}{2}$ ) inch in diameter.

EXHIBIT C-29 (continued) :

This stone shall be spread upon the road to a depth of five (5) inches loose measurements, after which it shall be thoroughly rolled and sand added as needed to within an inch of the top of the finished roadway.

10 Trap rock screenings, complying with the following specifications shall then be added to the depth of one (1) inch and sufficient water used to insure the fillings of the voids and the rolling shall be continued until all motion ceases in the mass.

20 All screenings shall be the product of the crusher that will pass through a screen having square or circular openings five-eighths ( $5/8$ ) inch in diameter. Not less than twenty (20) nor more than thirty (30) per cent by weight shall pass a twenty (20) mesh sieve. Not more than fifteen (15) per cent by weight of stone dust shall pass a one hundred (100) mesh sieve. All excess sand or screenings shall be removed from the surface of the pavement.

All the rolling shall be done with a ten (10) ton for steam roller. All rolling shall begin at the sides of the road and continued toward the center. The space between the edges of the pavement and the gutter line or edge of the embankment shall have a slope of one (1) inch per foot, or as directed by the Engineer.

Temporary restoration.

30 258. At such times as may be directed roadway and sidewalk pavements, crosswalks, curbs, etc., which have been removed, whether under guarantee or not, shall be temporarily restored by the Contractor to the satisfaction of the Engineer.

When new pavement is laid.

40 260. If pavement, sidewalks, crosswalks, curbs, etc., are laid where none existed at the time the bids for this contract were opened, the Contractor shall excavate and remove such portions of the pavements, sidewalks, crosswalks, curbs, etc., and their foundations as may be necessary for the prosecution of the work, but he will not be required to make a permanent restoration of them.

Trenches flooded.

261. Before laying any pavements, sidewalks, crosswalks, curbs, etc., the trenches shall, if required, be flooded with water,

**EXHIBIT C-29 (continued):**

as directed, and all resulting holes or depressions shall be filled and tamped solid.

**Unnecessary cross gutters.**

10        262. All cross gutters rendered unnecessary by the work under this contract shall be removed and the entire street intersection or so much thereof as may be necessary shall be regraded and repaved as herein specified.

**Cleaning up.**

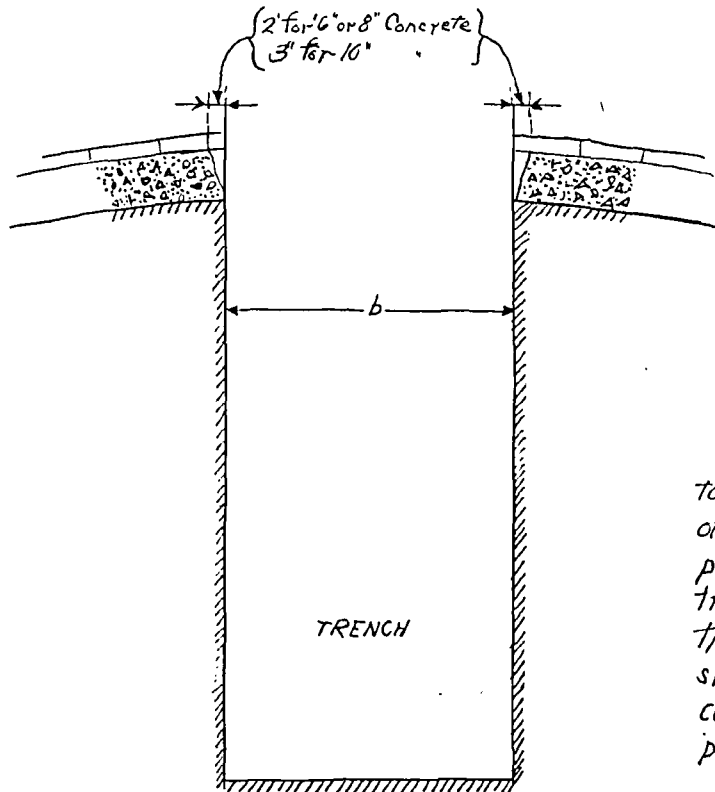
20        263. At such times as may be directed the Contractor shall remove from the streets, all materials which were placed thereon by him as a consequence of performing this work and which are not required by the contract to be left as part of the finished work. The entire work and portions of the streets affected thereby shall be left in a satisfactory condition. The sidewalks and crosswalks shall be swept clean of all material which may have come thereon by reason of the work under this contract, and if required, they shall be sprinkled with water during the sweeping.

**Cost to be covered.**

30        264. The cost of all the labor required to be done and all the materials required to be furnished in the performance of all the work specified in paragraphs 254 to 263 inclusive, shall be covered by all the contract prices for all the items for which there are contract prices.

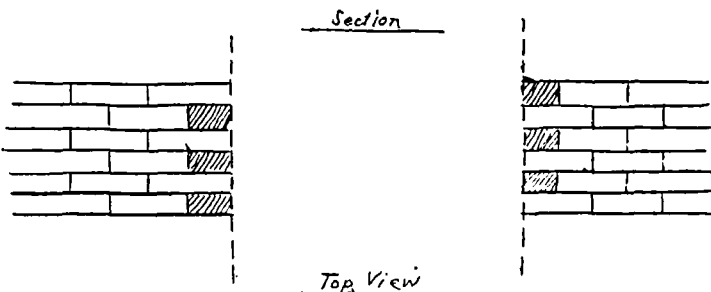
**CITY OF NEW YORK**  
 OFFICE OF THE PRESIDENT, BOROUGH OF QUEENS  
 BUREAU OF HIGHWAYS

SKETCH SHOWING  
 YARDAGE TO BE COMPUTED FOR RESTORING DIFFERENT  
 CLASSES OF PAVEMENT OVER SEWER TRENCHES  
 JAN. 18<sup>TH</sup> 1916.



The figures below are the minimum dimensions to be added to the width "b" of the sewer trench when computing the amount of deposit required from the sewer contractor to pay for the repaving of the area disturbed by him, except when the sides of the trench have settled during construction, or where the foundation has been injured, which amount of settlement or injury shall be added thereto; or where creeping of pavement has occurred, when an adequate amount shall be added to obtain proper bond with adjacent pavement

Brick -	8 1/2 inches each side = 17 inches.
Wood Block	8 " " " = 16 "
Asph ..	12 " " " = 24 "
Gran .	9 " " " = 18 "
Sheet Asphalt	6 " " " = 12 "
Bituminous Concrete	6 " " " = 12 "
Water Bound Macadam	6 " " " = 12 "



Top View  
 Not Drawn to Scale.

*James Rice* ENGINEER OF HIGHWAYS  
 ENGINEER IN CHARGE - ENGINEERING CONSTRUCTION.

EXHIBIT C-83:

EXHIBIT C-83.

(*Agreement Sigretto & Phillips, April 27, 1917.*)

CONTRACT FOR SERVICES.

10       The Undersigned, Joseph L. Sigretto Co. Inc. organized and incorporated under the laws of the State of New York and doing business at Woodhaven, Long Island, N. Y. AND JOHN M. PHILLIPS of 112 Academy Street, Long Island City, Borough of Queens, City of New York, contract and agree as follows:

          That the said Joseph L. Sigretto Co. in consideration of services rendered by the said John M. Phillips hereby agrees to employ and hire him to perform the following services to wit:

20       To supervise and assist in the execution of a certain work known as contract #47339 for the construction of a sewer and appurtenances in Hull Avenue, from Maurice Avenue to Willow Avenue; Willow Avenue, from Jay Avenue to Grand Street; Hull Avenue, from Willow Avenue to Hamilton Pl.; Hamilton Pl., from Hull Avenue to Grand Street; Grand Street, from Hamilton Pl. to Monteverde Ave., Second Ward of the Borough of Queens.

30       And it is further agreed that the said John M. Phillips shall receive as compensation and wages for said employment one half the profits which may arise from said contract above mentioned and known as above set forth.

          And it is further agreed that he shall be paid five per centum (5%) of each and every payment made by the City of New York in payment of said contract and at the time of said payments.

40       It is further agreed that in the event of said payments being less in aggregate than 50% of the net profits of said contract with the City of New York, then the said John M. Phillips shall be paid the difference between the sum of all payments made to him and fifty per centum (50%) of the net profits of said City contract above set forth.

          It is further agreed that the said John M. Phillips shall pursue his duties in consultation with the Joseph L. Sigretto Co. and it is agreed that if this contract is sold sublet, or an assignment made, the said John M. Phillips is to participate in 50%

EXHIBIT C-83 (*continued*):

EXHIBIT C-84:

of the profits, and the said John M. Phillips hereby agrees to the terms of this contract and will perform his duties in accordance with the full intent of these presents.

Dated April 27th., 1917.

10

Joseph L. Sigretto Co. Inc.

by

J. SIGRETTO,  
President.

JOHN M. PHILLIPS.

20

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EXHIBIT C-84.

(*Agreement Sigretto & Phillips, April 27, 1917.*)

CONTRACT FOR SERVICES.

The Undersigned, Joseph L. Sigretto Co. Inc. organized and incorporated under the laws of the State of New York and doing business at Woodhaven, Long Island, N. Y. AND JOHN M. PHILLIPS of 112 Academy Street, Long Island City, Borough of Queens, City of New York, contract and agree as follows:

30

That the said Joseph L. Sigretto Co. in consideration of services rendered by the said John M. Phillips hereby agrees to employ and hire him to perform the following services to wit:

40

To supervise and assist in the execution of a certain work known as contract #47342 for the construction of a sewer and appurtenances in Atlantic Ave. (North side). From Willard (Vanderveer) Ave. to Freedom Ave.; And in Hatch Ave. from Atlantic Ave. (North Side) to Fulton St., Fourth Ward of the Borough of Queens.

And it is further agreed that the said John M. Phillips shall receive as compensation and wages for said employment one half the profits which may arise from said contract above mentioned and known as above set forth.



EXHIBIT C-84 (*continued*):

And it is further agreed that he shall be paid five per centum (5%) of each and every payment made by the City of New York in payment of said contract and at the time of said payments.

10 It is further agreed that in the event of said payments being less in aggregate than 50% of the net profits of said contract with the City of New York, then the said John M. Phillips shall be paid the difference between the sum of all payments made to him and fifty per centum (50%) of the net profits of said City contract above set forth.

20 It is further agreed that the said John M. Phillips shall pursue his duties in consultation with the Joseph L. Sigretto Co. or from any source whatsoever, and it is agreed that if this contract is sold sublet, or an assignment made, the said John M. Phillips is to participate in 50% of the profits, and the said John M. Phillips hereby agrees to the terms of this contract and will perform his duties in accordance with the full intent of these presents.

Dated April 27th., 1917.

Joseph L. Sigretto Co. Inc.

by

J. SIGRETTO,  
President.

30 JOHN M. PHILLIPS.

EXHIBIT C-85:

EXHIBIT C-85.

(*Agreement Sigretto & Phillips, April 27, 1917.*)

CONTRACT FOR SERVICES.

10       The Undersigned, Joseph L. Sigretto Co. Inc. organized and incorporated under the laws of the State of New York and doing business at Woodhaven, Long Island, N. Y. AND JOHN M. PHILLIPS of 112 Academy Street, Long Island City, Borough of Queens, City of New York, contract and agree as follows:

That the said Joseph L. Sigretto Co. in consideration of services rendered by the said John M. Phillips hereby agrees to employ and hire him to perform the following services to wit:

20       To supervise and assist in the execution of a certain work known as contract #47341 for the construction of a sewer and appurtenances in McComb Pl. (Wyckoff Ave.). From Central Ave. to Myrtle Ave.; Ridgewood Pl., from Central Ave. to Copeland Ave., and in Copeland Ave. from Ridgewood Pl. to McComb Pl., Second Ward of the Borough of Queens.

And it is further agreed that the said John M. Phillips shall receive as compensation and wages for said employment one half the profits which may arise from said contract above mentioned and known as above set forth.

30       And it is further agreed that he shall be paid five per centum (5%) of each and every payment made by the City of New York in payment of said contract and at the time of said payments.

40       It is further agreed that in the event of said payments being less in aggregate than 50% of the net profits of said contract with the City of New York, then the said John M. Phillips shall be paid the difference between the sum of all payments made to him and fifty per centum (50%) of the net profits of said City contract above set forth.

It is further agreed that the said John M. Phillips shall pursue his duties in consultation with the Joseph L. Sigretto Co. and it is agreed that if this contract is sold sublet, or an assignment made, the said John M. Phillips is to participate in 50% of the profits, and the said John M. Phillips hereby agrees to

EXHIBIT C-85 (*continued*):

EXHIBIT C-234:

the terms of this contract and will perform his duties in accordance with the full intent of these presents.

Dated April 27th., 1917.

10

Joseph L. Sigretto Co. Inc.

by

J. SIGRETTO,  
President.

JOHN M. PHILLIPS.

20

EXHIBIT C-234.

(*Schedule of prices on pipe, 1918 to 1927.*)

SCHEDULE OF HIGH, LOW AND AVERAGE PRICES OF PIPE SOLD BY THE LOCK JOINT PIPE COMPANY OUTSIDE OF QUEENS AND TAKEN FROM SCHEDULE OF PRICES OF LOCK JOINT PIPE ACTUALLY SOLD WITHIN THE LAST TEN YEARS, BY YEARS FROM 1918 TO 1927 INCLUSIVE.

30

This schedule was prepared by Mr. F. W. Hopkins, Jr., and was used in his testimony.

1918

24"	Norfolk, Va. — High, low and average .....	\$ 1.90
27"	Norfolk, Va. — High, low and average .....	2.25
30"	Norfolk, Va. — High, low and average .....	2.40
36"	Milburn, N. J. — High .....	3.60
	Norfolk, Va. — Low .....	3.15
40	Average ... ..	3.38
42"	Norfolk, Va. — High, low and average .....	3.50
45"	Norfolk, Va. — High, low and average .....	4.15
48"	Milburn, N. J. — High .....	5.75
	Norfolk, Va. — Low .....	5.15
	Average .....	5.45
72"	East Orange, N. J. — High, low and average .....	10.50
78"	East Orange, N. J. — High, low and average .....	12.50

EXHIBIT C-234 (continued):

1919			
	24"	Syracuse, N. Y. — High .....	2.00
		Highland Park, N. J. — Low .....	1.60
		Average .....	1.80
	27"	Syracuse, N. Y. — High .....	2.50
		Highland Park, N. J. — Low .....	2.10
		Average .....	2.30
10	30"	Niagara Falls, N. Y. — High .....	2.50
		Highland Park, N. J. — Low .....	2.40
		Average .....	2.45
	33"	Syracuse, N. Y. — High .....	3.45
		Highland Park, N. J. — Low .....	3.00
		Average .....	3.28
	36"	Syracuse, N. Y. — High .....	3.80
		Highland Park, N. J. — Low .....	3.40
		Average .....	3.60
20	42"	Niagara Falls, N. Y. — High .....	4.55
		Highland Park, N. J. — Low .....	4.35
		Average .....	4.45
	45"	Niagara Falls, N. Y. — High, low and average .....	4.80
	48"	Niagara Falls, N. Y. — High .....	5.80
		Highland Park, N. J. — Low .....	5.30
		Average .....	5.55
	51"	Niagara Falls, N. Y. — High, low and average .....	6.25
1920			
30	33"	Fort Collins, Colo. — High, low and average .....	3.35
	42"	Fort Collins, Colo. — High, low and average .....	4.70
	45"	Fort Collins, Colo. — High, low and average .....	5.25
	48"	Fort Collins, Colo. — High .....	6.05
		Baton Rouge, La. — Low .....	5.65
		Average .....	5.85
	51"	Baton Rouge, La. — High, low and average .....	6.20
	54"	Fort Collins, Colo. — High .....	7.60
		Baton Rouge, La. — Low .....	7.10
		Average .....	7.35
40	57"	Baton Rouge, La. — High, low and average .....	7.70
	60"	Philadelphia, Pa. — High .....	9.15
		Baton Rouge, La. — Low .....	8.40
		Average .....	8.77
	66"	Philadelphia, Pa. — High, low and average .....	10.25

EXHIBIT C-234 (continued) :

1921			
	36"	Niagara Falls, N. Y. — High, low and average .....	3.65
	42"	Niagara Falls, N. Y. — High, low and average .....	4.55
	45"	Flint, Mich. — High, low and average .....	4.10
	48"	Niagara Falls, N. Y. — High .....	5.90
		Flint, Mich. — Low .....	4.85
10		Average .....	5.38
	54"	Flint, Mich. — High, low and average .....	6.30
	66"	Hazelton, Pa. — High, low and average .....	12.00
	72"	Hazelton, Pa. — High, low and average .....	14.25
1922			
	27"	Philadelphia, Pa. — High, low and average .....	2.00
	33"	Johnstown, Pa. — High, low and average .....	2.85
	36"	Johnstown, Pa. — High, low and average .....	3.00
	42"	Philadelphia, Pa. — High .....	3.90
20		Flint, Mich. — Low .....	3.55
		Average .....	3.72
	45"	Philadelphia, Pa. — High .....	4.15
		Flint, Mich. — Low .....	3.75
		Average .....	3.95
	48"	Manchester, N. H. — High, low and average .....	5.45
	54"	Manchester, N. H. — High .....	6.65
		Johnstown, Pa. — Low .....	5.60
		Average .....	6.13
	66"	Flint, Mich. — High, low and average .....	9.45
30	72"	Manchester, N. H. — High, low and average .....	9.50
	78"	Manchester, N. H. — High, low and average .....	11.90
	84"	Manchester, N. H. — High, low and average .....	13.10
1923			
	24"	Nashua, N. H. — High .....	1.80
		East Orange, N. J. — Low .....	1.65
		Average .....	1.72
	27"	East Orange, N. J. — High, low and average .....	2.05
40	30"	Nashua, N. H. — High, low and average .....	2.50
	33"	East Orange, N. J. — High, low and average .....	2.90
	36"	Nashua, N. H. — High, low and average .....	3.50
	39"	East Orange, N. J. — High, low and average .....	3.35
	42"	Nashua, N. H. — High .....	4.50
		East Orange, N. J. — Low .....	4.05
		Average .....	4.27

EXHIBIT C-234 (continued):

	48"	Monesson, Pa. — High .....	5.70
		East Orange, N. J. — Low .....	5.20
		Average .....	5.48
	60"	Monesson, Pa. — High .....	8.80
		East Orange, N. J. — Low .....	7.55
		Average .....	8.17
	66"	East Orange, — High, low and average .....	9.00
10	72"	Monesson, Pa. — High, low and average .....	12.10

1924

	30"	South Bend, Ind. — High .....	2.45
		Flint, Mich. — Low .....	2.08
		Average .....	2.26
	33"	South Bend, Ind. — High .....	2.90
		Flint, Mich. — Low .....	2.60
		Average .....	2.75
20	36"	South Bend, Ind. — High .....	3.40
		Flint, Mich. — Low .....	2.82
		Average .....	3.11
	42"	South Bend, Ind. — High .....	4.20
		Flint, Mich. — Low .....	4.17
		Average .....	4.18
	48"	South Bend, Ind. — High, low and average .....	5.45
	54"	South Bend, Ind. — High .....	6.50
		Camden, N. J. — Low .....	6.25
		Average .....	6.38
30	66"	Camden, N. J. — High, low and average .....	9.25
	72"	South Bend, Ind. — High .....	10.50
		Flint, Mich. — Low .....	9.32
		Average .....	9.91
	78"	Camden, N. J. — High, low and average .....	13.75
	84"	Camden, N. J. — High, low and average .....	15.25
	90"	Camden, N. J. — High, low and average .....	18.25

1925

	24"	Worcester, Mass. — High, low and average .....	1.90
40	27"	Worcester, Mass. — High, low and average .....	2.45
	33"	Worcester, Mass. — High .....	3.40
		Springfield, Ill. — Low .....	2.70
		Average .....	3.05
	36"	Springfield, Ill. — High, low and average .....	3.15
	39"	Pittsburgh, Pa. — High, low and average .....	3.25

EXHIBIT C-234 (continued) :

	42"	Worcester, Mass. — High .....	4.50
		Pittsburgh, Pa. — Low .....	3.80
		Average .....	4.07
	63"	Worcester, Mass. — High, low and average .....	8.65
	78"	Worcester, Mass. — High, low and average .....	12.40
	84"	Worcester, Mass. — High, low and average .....	13.75
		1926	
10	24"	Keneshia, Wis. — High, low and average .....	1.60
	30"	Keneshia, Wis. — High .....	2.45
		Carteret, N. J. — Low .....	2.20
		Average .....	2.32
	33"	Niles Center, Ill. — High, low and average .....	3.20
	36"	Niles Center, Ill. — High, (two prices \$3.70; \$3.45)	3.70
		Carteret, N. J. — Low .....	3.15
		Average, (three prices) .....	3.43
20	42"	Niles Center, Ill. — High, (two prices \$4.90; \$4.55)	4.90
		Carteret, N. J. — Low, (Kenosha \$4.30) .....	3.95
		Average, (four prices) .....	4.42
	48"	Niles Center, Ill. — High .....	6.10
		Carteret, N. J. — Low .....	4.90
		Average .....	5.50
	54"	Niles Center, Ill. — High .....	6.50
		Carteret, N. J. — Low .....	5.90
		Average .....	6.20
	60"	Niles Center, Ill. — High, low and average .....	7.90
30	66"	Niles Center, Ill. — High .....	9.40
		Carteret, N. J. — Low .....	8.80
		Average .....	9.10
	72"	Niles Center, Ill. — High .....	10.75
		Carteret, N. J. — Low .....	9.75
		Average .....	10.25
	78"	Niles Center, Ill. — High .....	13.00
		Carteret, N. J. — Low .....	12.00
		Average .....	12.50
	84"	Niles Center, Ill. — High, low and average .....	14.15
40		1927	
	24"	Tessville, Ill. — High, low and average .....	2.10
	27"	Rocky River, Ohio — High, low and average .....	2.35
	30"	Tessville, Ill. — High .....	3.00
		E. Gary, Ind. — Low .....	2.45
		Average .....	2.64

EXHIBIT C-234 (continued):

	33"	Tessville, Ill. — High .....	3.65
		Rocky River, Ohio — Low, (and Hammond Ind.) .	3.25
		Average .....	3.38
	36"	Tessville, Ill. — High .....	4.00
		Cleveland, Ohio and E. Gary, Ind. — Low .....	3.40
		Average .....	3.55
	39"	Mamaroneck, N. Y. — High, low and average .....	3.65
10	42"	Hammond, Ind. — High .....	4.60
		Highland, Ind. — Low .....	4.00
		Average .....	4.36
	48"	Hammond, Ind. — High .....	6.00
		Hazelton, Pa. — Low .....	5.15
		Average .....	5.59
	54"	Cleveland, Ohio — High .....	6.35
		Dover, Del. — Low .....	5.85
		Average .....	6.10
20	60"	Hammond, Ind. — High .....	8.80
		Dover, Del. — Low .....	7.15
		Average .....	7.85
	66"	Hammond, Ind. — High .....	10.40
		Binghamton, N. Y. — Low .....	8.50
		Average .....	9.15
	72"	Hammond, Ind. — High .....	12.40
		Highland, Ind. — Low .....	10.00
		Average .....	11.06
	78"	Hazelton, Pa. — High, low and average .....	13.23
30	84"	Hazelton, Pa. — High .....	14.21
		Highland, Ind. — Low .....	13.25
		Average .....	13.73



EXHIBIT C-235:

EXHIBIT C-235.

*(Schedule of prices on pipe, 1918 to 1927.)*

MEMORANDUM OF PRICES AT WHICH LOCK JOINT  
 PIPE HAS ACTUALLY BEEN SOLD IN THE YEARS 1918  
 10 TO 1927 INCLUSIVE OUTSIDE OF QUEENS COUNTY  
 AND IN PLACES AND ON SITES WHERE THE PIPE  
 COULD BE PRECAST ON THE JOB AND DISTRIBUTED  
 ACCORDINGLY.

These prices were checked to the ledger accounts or to  
 duplicate invoices or both, if both were available.

		Quantities	Size	Price
		Feet	Inches	
20	1918			
	Milburn, N. J.			
	Contractor: P. Mauriello	320	36	\$ 3.60
	Started Mfg. Mar. 26, 1918	1200	48	5.75
	Completed May 11th, 1918			
	Norfolk, Va.			
	Atlantic Bitulithic Co.	7540	24	1.90
	Started Mfg. July 4, 1918	512	27	2.25
	Completed Aug. 7, 1919	4936	30	2.40
30		2592	36	3.15
		2876	42	3.50
		2992	45	4.15
		1400	48	5.15
	East Orange, N. J.			
	Harrison & Craig	770	72	10.50
	Started Mfg. Mar. 18, 1918	730	78	12.50
	Completed June 11, 1918			
40	1919			
	Syracuse, N. Y.			
	Frank S. Sposato	380	24	2.00
	Started Mfg. Aug. 11, 1919	136	27	2.50
	Completed Sept. 19, 1919	1884	33	3.40
		568	36	3.80
		1800	33	3.45

EXHIBIT C-235 (continued) :

		Quantities	Size	Price
		Feet	Inches	
	Highland Park, N. J.			
	(sold Borough direct)	400	24	1.60
	Started Mfg. May 21, 1919	886	27	2.10
	Completed July 16, 1919	1012	30	2.40
10		1200	33	3.00
		1156	36	3.40
		1192	42	4.35
		246	48	5.30
	Niagara Falls, N. Y.			
	D. Spacone	884	30	2.50
	Started Mfg. Sept. 20, 1919	554	42	4.55
	Completed Oct. 16, 1919	528	45	4.80
		654	48	5.80
		330	51	6.25
20	1920			
	Fort Collins, Colo.			
	Martin Johnson & Co.	480	33	3.35
	Started Mfg. Oct. 2, 1920	540	42	4.70
	Completed Jan. 29, 1921	480	45	5.25
		3657	48	6.05
		1194	54	7.60
	Philadelphia, Pa.			
30	Curtis Bros.	1182	60	9.15
	Started Mfg. Nov. 28, 1920	518	66	10.25
	Completed Jan. 4, 1921			
	Baton Rouge, La.			
	Standard Oil Co.	3000	48	5.65
	Started Mfg. April 10, 1920	700	51	6.20
	Completed Oct. 28, 1920	840	54	7.10
		592	57	7.70
		52	60	8.40
40	1921			
	Flint, Mich.			
	(City direct)	2530	45	4.10
	Started Mfg. April 9, 1921	1480	48	4.85
	Completed June 16, 1921	1850	54	6.30

EXHIBIT C-235 (continued) :

		Quantities Feet	Size Inches	Price
	Niagara Falls, N. Y.			
	Domenick Spacone	592	36	3.65
	Started Mfg. April 13, 1921	292	42	4.55
	Completed June 28, 1921	3448	48	5.90
10	Hazleton, Pa.			
	Louis Jacques	160	66	12.00
	Started Mfg. June 15, 1921	1306	72	14.25
	Completed August 15, 1921			
	1922			
	Flint, Mich.			
	(City direct)	3100	42	3.55
	Started Mfg. May 15, 1922	1700	45	3.75
	Completed Sept. 5, 1922	3500	54	6.35
20		350	66	9.45
	Johnstown, Pa.			
	Andrews Construction Co.	508	33	2.85
	Altoona, Pa.	598	36	3.00
		5734	54	5.60
	Jos. Perna,	3318	27	2.00
	Phila. Pa.	2593	42	3.90
	Started Mfg. May 16, 1922	498	45	4.15
	Completed Sept. 14, 1922			
30	Manchester, N. H.			
	(City direct)	780	48	5.45
	Started Mfg. June 19, 1922	1770	54	6.65
	Completed Sept. 23, 1922	1345	72	9.50
		1280	78	11.90
		1505	84	13.10
	1923			
	Nashua, N. H.			
40	(City direct)	700	24	1.80
	Started Mfg. Aug. 1, 1923	650	30	2.50
	Completed Oct. 3, 1923	1400	36	3.50
		1200	42	4.50
		1100	48	5.55

EXHIBIT C-235 (continued):

		Quantities	Size	Price
		Feet	Inches	
	East Orange, N. J.			
	Spiniello Construction Co.	690	24	1.65
	Started Mfg. Oct. 9, 1923	270	27	2.05
	Completed Feb. 2, 1924	1180	33	2.90
10		335	39	3.35
		350	42	4.05
		670	48	5.20
		820	60	7.55
		800	66	9.00
	Monessen, Pa.			
	Donora Construction Co.	1700	48	5.70
	Started Mfg. May 25, 1923	800	60	8.80
	Completed Nov. 30, 1923	1100	72	12.10
	1924			
20	Flint, Mich.			
	(City direct)	720	30	2.08
	Started Mfg. Feb. 7, 1924	772	33	2.60
	Completed May 22, 1924	388	36	2.82
		146	42	4.17
		1048	72	9.32
	Camden, N. J.			
	E. R. Morehouse Co.	670	54	6.25
	Started Mfg. April 9, 1924	590	66	9.25
	Completed Sept. 25, 1924	2671	78	13.75
30		2711	84	15.25
		706	90	18.25
	South Bend, Ind.			
	G. Pontarielli	1120	30	2.45
	Started Mfg. April 30, 1924	393	33	2.90
	Completed July 10th, 1924	856	36	3.40
		475	42	4.20
		2761	48	5.45
		1726	54	6.50
		2204	72	10.50
40	1925			
	Worcester, Mass.			
	(City direct)	1124	24	1.90
	Started Mfg. Jan. 19, 1925	500	27	2.45
	Completed April 28, 1925	100	33	3.40
		740	42	4.50
		364	63	8.65
		816	78	12.40
		2124	84	13.75

EXHIBIT C-235 (continued) :

		Quantities	Size	Price
		Feet	Inches	
	Pittsburgh, Pa.			
	R. D. Thomas	3848	39	3.25
	Mike Manilla	1812	42	3.90
	Started Mfg. May 18, 1925	6390	42	3.80
	Completed August 21, 1925			
10	Springfield, Ill.			
	Hansen & Willadsen	3716	33	2.70
	Started Mfg. July 2, 1925	5996	36	3.15
	Completed Oct. 31, 1925	12220	42	3.90
	1926			
	Niles Center, Ill.	3028	33	3.20
	N. Santucci	672	36	3.45
	Started Mfg. April 19, 1926	644	36	3.70
20	Completed Sept. 21, 1926	2948	42	4.55
		2704	42	4.90
		648	48	5.45
		1300	48	6.10
		1600	54	6.50
		1638	60	7.90
		2168	66	9.40
		3028	72	10.75
		2156	78	13.00
		1832	84	14.15
30	Kenosha, Wisc.			
	Marcus Thomson	1900	24	1.60
	Started Mfg. May 4, 1926	904	30	2.45
	Completed June 4, 1926	900	42	4.30
	Carteret, N. J.			
	Louis Jacquest Construction Co.	1592	30	2.20
	Started Mfg. Sept. 7, 1926	336	36	3.15
	Completed Dec. 2, 1926	892	42	3.95
		1436	48	4.90
40		688	54	5.90
		2460	66	8.80
		1972	72	9.75
		1548	78	12.00

EXHIBIT C-235 (continued):

		Quantities Feet	Size Inches	Price
	<b>1927</b>			
	New Rochelle, N. Y.	750	30	2.80
	New Rochelle Const. Co.	1350	48	5.80
	Started Mfg. Oct. 12, 1927			
	Completed Nov. 11, 1927			
10	East Gary, Ind.			
	Barnes Brothers & Co.	1288	30	2.45
	Started Mfg. Oct. 6, 1927	1720	36	3.40
	Completed Oct. 26, 1927	1092	42	4.30
	Mamaroneck, N. Y.			
	(Town Direct)	456	36	3.50
	Started Mfg. Oct. 5, 1927	2052	39	3.65
	Completed Nov. 4, 1927			
20	Highland, Ind.			
	H. P. Downing Const. Co.	412	42	4.00
	Started Mfg. June 24, 1927	712	54	5.85
	Completed, Aug. 29, 1927	1268	60	7.15
		1284	66	8.55
		1292	72	10.00
		656	84	13.25
	Dover, Dela.			
	(Town Direct)	1228	42	4.55
	Started Mfg. June 20, 1927	1168	48	5.75
30	Completed July 28, 1927			
	Rocky River, Ohio			
	Gantose Const. Co., Cleveland	376	27	2.35
	Started Mfg. June 7, 1927	768	30	2.50
	Completed July 14, 1927	1544	36	3.50
		132	33	3.25
	Sewickley, Pa.			
	Borough direct	2856	30	2.55
40	Started Mfg. May 11, 1927	1192	36	3.55
	Completed June 17, 1927			
	Hazleton, Pa.			
	Correale Construction Co.	416	48	5.15
	Started Mfg. May 3rd, 1927	224	60	7.74
	Completed Aug. 12, 1927	632	72	10.78
		2344	78	13.23
		660	84	14.21

EXHIBIT C-235 (continued) :

		Quantities	Size	Price
		Feet	Inches	
	<b>Cleveland, Ohio.</b>			
	Cuyahoga County—Fred Williams,	1276	30	2.55
	Co. Engr. and	1436	36	3.40
	Haddad-Mall Co.	764	42	4.35
	Started Mfg. April 23, 1927	656	48	5.25
10	Completed Sept. 29, 1927	1692	54	6.35
		1312	60	7.70
	<b>Binghamton, N. Y.</b>			
	Clarence W. Rose	5500	66	8.50
	Johnson City, N. Y.			
	Started Mfg. Mar. 29, 1927			
	Completed July 21, 1927			
	<b>Tessville, Ill.</b>			
20	Krenn & Dato Bldg. & Construction Co.,			
	Chicago, Ill.	3310	24	2.10
	Started Mfg. May 21, 1927	2000	30	3.00
	Completed June 28, 1927	660	33	3.65
		660	36	4.00
	<b>Hammond, Ind.</b>			
	Cities Construction Co.	1504	33	3.25
	Started Mfg. Feb. 3, 1927	72	36	3.50
	Completed May 9th, 1927	1820	42	4.60
		1620	48	6.00
30		676	60	8.80
		1288	66	10.40
		700	72	12.40

EXHIBIT C-14:

EXHIBIT C-14.

*(Contract between Joseph L. Sigretto & Co. and The City of New York for construction of sewers and appurtenances in Fifty-first Street (Central Avenue) from Lurting (Willow) Street to Waldron Street (Lawn Avenue), Second Ward of the Borough of Queens, on June 25, 1918.)*

THE CITY OF NEW YORK—DEPARTMENT OF FINANCE  
Office of the Comptroller

20

CONTRACT SUMMARY

Contractor: JOSEPH L. SIGRETTO & CO. No. 49784

Names of Sureties: National Surety Co.

New Amsterdam Casualty Co.

30

London and Lancashire Indemnity Co.

Amount of bond: \$100,000.00

Bonds of Surety Companies released 7/9/19.

Corporate Stock substituted on 7/9/19.

40 Date of award: 6/25/18; Department: President, Queens; Date of contract: 7/12/18; Borough, Queens; Date of expiration: 300 days; Date of filing 7/6/18; Damages: \$10.00 per day; Date paid in full: 1/27/22.



EXHIBIT C-14 (continued) :

DESCRIPTION OF WORK

Construction of a sewer and appurtenances in 51st. Street  
(Central Avenue) from Lurting (Willow) Street to Waldron  
Street (Lawn Avenue), Second Ward. (Type "B" Construction.)

10		346,493.00
	A. E.	18,122.27
		9,290.97
		<hr/>
		373,906.74
	R. E.	772.97
		<hr/>
		373,133.77
20	A. E.	2,163.86
		<hr/>
		375,297.63
	Original Estimate,	\$346,493.00
	A. E.	30,386.96
		<hr/>
		376,879.96

ACCOUNTS TO BE CHARGED

30 CFM 25

The obligation on this surety bond ceases as to anything  
occurring after June 28, 1921.

If the conditions of the contract have been complied with,  
the retained percentage (if any) is due on or after June 28, 1921.

GEORGE W. MARTIN,  
Examiner.

40 LIENS AND ASSIGNMENTS

Assignment filed 9/5/18, John J. Creem, Contract.

Assignment filed 7/29/20, Nassau National Bank of Bklyn, N. Y.,  
all money, by John J. Creem, assignee.

EXHIBIT C-14 (continued):

PAYMENTS, AMOUNTS RETAINED AND EARNED

	Date	... % Payments	Amount paid to date	Amount retained to date	Amount earned to date
	11/ 4/18	22,365.20	22,365.20	3,946.80	26,312.00
	12/ 2/18	30,491.20	52,856.40	9,327.60	62,184.00
10	1/ 2/19	23,959.80	76,816.20	13,555.80	90,372.00
	2/10/19	7,942.40	84,758.60	14,957.40	99,716.00
	3/12/19	14,422.80	99,181.40	17,502.60	116,684.00
	4/ 2/19	20,910.85	120,092.25	21,192.75	141,285.00
	5/ 1/19	24,441.75	144,534.00	25,506.00	170,040.00
		31,646.35	176,180.35	31,090.65	207,271.00
	7/ 3/19	15,146.34	191,326.69	33,763.53	225,090.22
	8/ 8/19	14,592.97	205,919.66	36,338.76	242,258.42
	9/ 4/19	14,293.71	220,213.37	38,861.18	259,074.55
20	10/ 9/19	17,444.58	237,657.95	41,939.64	279,597.59
	11/10/19	16,094.29	253,752.24	44,779.81	298,532.05
	12/12/19	16,475.73	270,227.97	47,687.29	317,915.26
	1/ 8/20	10,448.23	280,676.20	49,531.09	330,207.29
	2/13/20	6,323.76	286,999.96	50,647.05	337,647.01
	3/12/20	7,436.19	294,436.15	51,959.32	346,395.47
	4/ 7/20	15,487.25	309,923.40	54,692.37	364,615.77
	6/23/20	7,897.33	317,820.73	56,086.01	373,906.74
	8/30/20	53,859.19	371,679.92	1,453.85	376,879.96
	8/ 5/21	2,163.86	373,843.78	1,453.85	
30		1,582.33	376,879.96		376,879.96
		1,453.85			

376,879.96                      IN FULL

	Deduct for not restoring pavement	Paid	\$2,163.86
	“ “ “ “ “ in R. R. Ave.		1,582.33
			<u>3,746.19</u>
		Paid	2,163.86
			<u>1,582.33</u>

40

EXHIBIT C-14 (continued):

ANNEXES TO CONTRACT

(12-34-16-13.0.)

Pros. Queens

13046

Proposals for Sewer in 51<sup>st</sup> St from Luntz to Walden St.

OPENED *Mar 24, 1915*

Securities \$ 100,000

BIDS	1052	1373	686	18	40	1198	23	22	2	78	40	42	39	104	1016	1	1	15000	50	5000	25			
<i>Richard Canale R7/5</i>																								
<i>Peace Bros R7/5</i>	90.	120.	100.	50.	5.	5.	352	90.	100.	4.	2.	5.	2.	3.	1 <sup>50</sup>	25 <sup>00</sup>	1500	0	0	0	0			
<i>Joseph Legretto Co</i>	108.	98.	86.	34.	5.	4.	410	100.	60.	2.	20	4.		2.	1 <sup>50</sup>	2000.	1000.	90.	12.	08	8.			
<i>Spallone Const R7/5</i>	<u>88</u> 94	<u>41</u> 109	<u>64</u> 79	<u>44</u> 66	6.	<u>5<sup>80</sup></u> 500	500.	100.	75	3.	2	1 <sup>50</sup>	2	1 <sup>50</sup>	2 <sup>50</sup>	1000.	1000.	90	15.	05	7 <sup>50</sup>			

EXHIBIT C-14 (continued):

142-34-10-(1,0.)

Pros. Queens

13046

Proposals for Sewer in 51<sup>st</sup> St from Lutting to Walden St.

Securities \$ 100,000

opened June 24, 1912

Bids	Proposals																					
	1052	1373	686	18	40	188	23	22	2	78	40	42	39	104	106	1	1	15000	50	5000	25	
	Con. Sewer 8"	" " 7'6"	" " 6'9"	" " 5'3"	" " 15"	" " 12"	Manhole on C.L.	" " 21"	Manhole	On St. 12"	" " 10"	Manhole 4'	Manhole on C.L.	Manhole on C.L.	Manhole on C.L.	Manhole on C.L.	Manhole on C.L.	Manhole on C.L.	Manhole on C.L.	Manhole on C.L.	Manhole on C.L.	Manhole on C.L.
Richard Carrle R 7/5	100.	111.	94.	30.	5.	3 <sup>70</sup>	250.	125.	100.	3.	1 <sup>50</sup>	2 <sup>50</sup>	2.	4.	2.	300.	300.	60.	12.	08	8.	
Peace Bros R 7/5	90.	150.	100.	50.	5.	5.	350.	90.	100.	4.	2.	5.	2.	3.	1 <sup>50</sup>	250.	150.	0	0	0	10.	B
Joseph Segretto Co	108.	98.	86.	34.	5.	4.	400.	100.	60.	2.	2.	4.	1.	2.	1 <sup>50</sup>	200.	100.	90.	12.	08	8.	
Spallone Co R 7/5	94 <sup>57</sup>	109 <sup>41</sup>	79 <sup>64</sup>	66 <sup>64</sup>	6.	5 <sup>50</sup>	500.	100.	75.	3.	2.	1 <sup>50</sup>	2.	1 <sup>50</sup>	2 <sup>50</sup>	1000.	1000.	90.	15.	08	7 <sup>00</sup>	

EXHIBIT C-14 (*continued*):

THE CITY OF NEW YORK

Office of

THE PRESIDENT OF THE BOROUGH OF QUEENS

Maurice E. Connolly  
President

10 Joseph Flanagan  
Borough Secretary

Hugh Hall  
Secretary to President

Long Island City, August 5, 1918.

Hon. Charles L. Craig, Comptroller,  
City of New York.

20 Sir:—

Referring to contract No. 49784:—

“For the construction of a sewer and appurtenances in FIFTY-FIRST STREET (Central Avenue) from Lurting (Willow) Street to Waldron Street (Lawn Avenue), Second Ward. (Type “B” construction).”

30 I beg to inform you that the contractor, Joseph L. Sigretto & Co., 1455 Woodhaven Avenue, Woodhaven, N. Y., has been ordered to commence the work embraced in said contract on August 12, 1918, or before five days from the receipt of his notice.

Yours very truly,

FRANK X. SULLIVAN,  
Acting President of the Borough of Queens.  
WPB-PJH

40 AGREEMENT made this 25th day of October, 1918, between the CITY OF NEW YORK, party of the First Part, and JOHN J. CREEM, No. 899 Green Avenue, Brooklyn, N. Y., assignee of Joseph L. Sigretto & Company, party of the Second Part.

WHEREAS, the parties hereto under date of July 12, 1918, entered into a contract, designated as #49784:

EXHIBIT C-14 (*continued*):

For constructing a sewer and appurtenances in Fifty-first Street (Central Avenue) from Lurting (Willow) Street to Waldron Street (Lawn Avenue), Second Ward of the Borough of Queens, and

10 WHEREAS the Party of the Second Part has requested, in view of the abnormal conditions prevailing—due to the war and the difficulty of obtaining the necessary materials to carry on the construction of this sewer—that the contract be modified so that partial payments may be made as the work progresses for the reinforced concrete pipe, as delivered on the line of the work, although not incorporated in the sewer structure; and,

WHEREAS, paragraph VIII of the Contract, provides:

20 “This contract may be modified and changed from time to time as may be previously agreed to in writing between the parties hereto in a manner not materially affecting the substance thereof of increasing the contract price thereunder, in order to carry out and complete more fully and perfectly the work herein agreed to be done and performed.”

30 1. NOW THEREFORE, it is agreed that Contract #49784, dated July 12, 1918, be, and the same is hereby modified to provide that 85% Progress Payments be made to the Party of the Second Part for the reinforced concrete pipe actually delivered on the site of the work, and accepted by the engineer in accordance with the following schedule of prices;

40 2. No payment will be made by the Party of the First Part for any reinforced concrete pipe, so delivered but not incorporated in the sewer structure, unless and until the Party of the Second Part shall have furnished to the Comptroller of the City of New York satisfactory evidence that the Party of the Second Part is the sole owner of such material, free and clear from all liens or other encumbrances, said material upon being estimated for payment shall become the property of the Party of the First Part. The Party of the Second Part shall not, however, by reason of said payments be relieved from responsibility for said material and the protection thereof and shall make good any loss or damage thereto, and shall be responsible for the entire work until the same is finally accepted by the Party of the First Part, as provided in the contract.

EXHIBIT C-14 (*continued*):

3. This agreement shall take effect if, and only when the written consents of the London and Lancaster Indemnity Company of America, the National Surety Company and the New Amsterdam Casualty Company, the sureties upon said contract, are obtained and attached hereto.

10 SCHEDULE OF UNIT PRICES TO BE USED IN MAKING UP 85 PER CENT. CERTIFICATES.

For constructing a sewer and appurtenances in FIFTY-FIRST STREET (Central Ave.) from Lurting Street to Waldron Street (Lawn Ave.), Second Ward.

October 15th, 1918.

	1,052 Linear Feet 8'0" Reinforced Concrete		
	Sewer (Precast Type "B") .....@	\$108.00	113,616.00
20	Cost of pipe furnished and delivered .....	\$34.00	
	Laying & jointing of pipe		
	Excavation		
	Backfill		
	Pumping .....	74.00	108.00
		<hr/>	<hr/>
	1,373 Linear Feet 7'6" Reinforced Concrete		
	Sewer (Precast Type "B") .....@	98.00	134,554.00
30	Cost of pipe furnished and delivered .....	\$32.00	
	Laying & jointing of pipe		
	Excavation		
	Backfill		
	Pumping .....	66.00	98.00
		<hr/>	<hr/>
	686 Linear Feet 7'0" Reinforced Concrete		
	Sewer (6'9" Mod.) (Precast Type "B") .....	80.00	54,880.00
40	Cost of pipe furnished and delivered .....	\$30.00	
	Laying & jointing of pipe		
	Excavation		
	Backfill		
	Pumping .....	50.00	80.00
		<hr/>	<hr/>

EXHIBIT C-14 (*continued*):

ALL OTHER ITEMS TO BE PAID FOR AT THE PRICE BID.

IN WITNESS WHEREOF, the parties hereto have executed this agreement the day and the year first above written.

FRANK X. SULLIVAN,  
Acting President of the Borough of Queens,  
For the City of New York,

10

PARTY OF THE FIRST PART.

JOHN J. CREEM,  
for John J. Creem,

PARTY OF THE SECOND PART.

20

The undersigned being sureties on the bonds given as security for the faithful performance of the contract mentioned in the foregoing agreement hereby consent to the making of the foregoing agreement.

London & Lancaster Indemnity Company  
of America

R. R. DICKINSON,  
Attorney-in-fact

M. A. CRAIG,  
Attorney-in-fact

30

National Surety Company,  
by J. R. WELLS,  
Vice President

F. J. DANAHY,  
Res. Ass't Secretary.

New Amsterdam Casualty Company,

40

by E. H. BROOKS,  
Vice-President

Attest WM. L. MCGINTY,  
Ass't Secretary.

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EXHIBIT C-14 (*continued*):

City of New York  
PRESIDENT OF THE BOROUGH OF QUEENS

Maurice E. Connolly  
President

10 Joseph Flanagan  
Borough Secretary

Hugh Hall  
Secretary to President

Long Island City, October 29, 1918.

20 Honorable Charles L. Craig,  
Comptroller, City of New York,  
Municipal Building,  
New York City.

Dear Sir:—

I transmit herewith agreement and Schedule of Unit Prices  
in connection with contract for

30 "Constructing sewer and appurtenances in 51st Street  
(Central Avenue) from Lurting (Willow) Street to Wal-  
dron (Lawn Ave.) Street, Second Ward, Borough of  
Queens."

Very truly yours,

Enclosure.  
GK/WPB

FRANK X. SULLIVAN,  
Acting President, Borough of Queens.

40

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EXHIBIT C-14 (*continued*):

City of New York

PRESIDENT OF THE BOROUGH OF QUEENS.

Maurice E. Connolly  
President

10 Joseph Flanagan  
Borough Secretary

Hugh Hall  
Secretary to President

HT/KAI Long Island City, May 14, 1919.

20 The Honorable Charles L. Craig,  
Comptroller of the City of New York,  
Municipal Building,  
New York City.

Sir:—

On October 25, 1918, contract #49784, John J. Creem, 899  
Kent Av., Brooklyn, N. Y., assignee of Joseph L. Sigretto and  
Company, Contractors:

30 For constructing a sewer and appurtenances in 51ST  
STREET (CENTRAL AV.) from Lurting (Willow) St.  
to Waldron St. (Lawn Av.), Second Ward of the Borough  
of Queens.

was modified so as to allow 85% progress payments to be made  
for the reinforced concrete pipe actually delivered on the site of  
the work, before it was incorporated in the sewer structure.

40 In making up the schedule of prices for this modification,  
a typographical error was made on item #3—686 lineal feet 6'9"  
Reinforced Concrete Sewer (Precast Type "B" 7'0" substituted).  
The price given in the schedule is \$80.00 per lineal foot, whereas  
it should have been \$86.00 per lineal foot.

Your attention is called to this matter, so that the pay-  
ments on this contract may not be delayed.

Yours very truly,

FRANK X. SULLIVAN,  
Acting President of the Borough of Queens.

EXHIBIT C-14 (*continued*):

AGREEMENT made this 14th day of June 1920 between The City of New York, Party of the First Part, and John J. Creem, 203 Argyle Road, Brooklyn, Assignee of Joseph L. Sigretto and Company, Party of the Second Part:

WHEREAS, the parties hereto, under date of July 12, 1918, entered into a contract, designated as number 49,784:

10 For the construction of a sewer and appurtenances in 51st STREET from Lurting St. to Waldron St., Second Ward, Borough of Queens, and

WHEREAS, subsequent to the entering into of this contract the established street grade of 51st Street between Nichols Street and Waldron Street was changed to conform more closely to the existing surface, so as to avoid change of grade damage, such change for a considerable distance being upward of four feet, which would place the high level sewer between these streets at a greater depth than required; and

20 WHEREAS, it was deemed advisable to change the elevation of the high level sewer to conform more nearly to the established practice of placing the lateral sewers at such elevation as to provide a covering of ten feet, which gives sufficient depth to serve all ordinary buildings; and

30 WHEREAS, it has been determined that a fair and reasonable deduction to be made from the price bid for the construction of the 12-inch high level sewer, on account of its being laid at a shallower depth than called for on the contract plan, is 38 cents per lineal foot; and

WHEREAS, Paragraph VIII of the Contract provides:

40 "This contract may be modified and changed from time to time, as may previously be agreed to in writing between the parties hereto in a manner not materially affecting the substance thereof or increasing the contract price thereunder, in order to carry out and complete more fully and perfectly the work herein agreed to be done and performed"; and

NOW, THEREFORE, the Party of the Second Part, for himself, his successors and assigns, agreed to and with the Party of the First Part to lay the 12-inch high level sewer in connection with the above contract, where placed at the shallower depth, an

EXHIBIT C-14 (*continued*) :

approximate distance of 1,111 lineal feet for 38 cents per linear foot less than the price bid; viz. \$3.62, the bid price, being Four Dollars per lineal foot.

IN WITNESS WHEREOF, John J. Creem has signed this agreement and The City of New York has caused said agreement to be signed by the President of the Borough of Queens in the  
10 day and year first above mentioned.

FRANK X. SULLIVAN,  
Acting President of the Borough of Queens,  
for the City of New York,  
PARTY OF THE FIRST PART.

JOHN J. CREEM,  
PARTY OF THE SECOND PART.

On this contract, the Party of the Second Part deposited  
20 with the Comptroller of The City of New York bonds of The City of New York to the amount of \$100,000.00, as surety for the full and proper execution of this work.

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Office of the

PRESIDENT OF THE BOROUGH OF QUEENS

Maurice E. Connolly  
30 President

Joseph Flanagan  
Borough Secretary

Hugh Hall  
Secretary to President

Long Island City, June 25, 1920.

Hon. Charles L. Craig,  
40 Comptroller, City of New York.

Dear Sir:—

(Attention of Auditors)

In the matter of Contract #49784 awarded to Joseph L. Sigretto Co., subsequently assigned to John J. Creem #203 Argyle Road, Brooklyn, N. Y. This contract was executed on July 12,

EXHIBIT C-14 (*continued*):

1918 and registered August 1, 1918—"For construction of sewer and appurtenances in 51st Street from Liberty Street (Waldron Street) to Waldron Street (Lawn Avenue) 2nd Ward, Borough of Queens."

10 The estimated contract cost as per bid was \$346,493.00 chargeable to Code CFM 25 Street Improvement Fund—work contracted for after January 1st 1898.

The cost of work done under this contract to date (see contract voucher #145, registered and transmitted to your department under date of June 23, 1920) is \$373,906.74, which said cost is \$27,413.74 in excess of the estimated contract cost of \$343,493.00, due principally to excess quantities in the items of concrete, rock excavation, timber sheeting, etc.

20 I hereby further certify that the said additional cost of \$27,413.74 is correct, and respectfully request that a second additional contract certificate in the sum of \$9,290.97 be issued of record by you and the usual bookkeeping notice be sent to this department authorizing a like entry in our books. The first additional certificate issued by your office was for the sum of \$18,122.77.

Very truly yours,

FRANK X. SULLIVAN,  
Commissioner of Public Works and  
Acting President of the Borough of Queens.

30 FG/D

EXHIBIT C-14 (*continued*):

Office of the  
PRESIDENT OF THE BOROUGH OF QUEENS

Maurice E. Connolly  
President

10 Joseph Flanagan  
Borough Secretary

Hugh Hall  
Secretary to President

Long Island City, August 26, 1920.

Hon. Charles L. Craig,  
Comptroller, City of New York.

20 Sir:—

Referring to contract No. 49784;—

“For the construction of a sewer and appurtenances  
in 51ST STREET from Lurting Street to Waldron Avenue,  
Second Ward.”

30 I beg to inform you that in accordance with the recom-  
mendation of the Engineer in Charge, Engineering-Construction,  
and the Engineer of Construction, I have this day granted an ex-  
tension of time of two hundred and forty-two (242) days to the  
contractor in which to complete the work on the said contract.

This contract was in progress during the war and during  
the trying time following the war, which made it extremely dif-  
ficult to obtain material on account of embargoes, strikes, etc.  
It was likewise difficult to obtain laborers in sufficient numbers  
and the labor available was very inefficient, greatly retarding  
the work.

40 The severe winter weather during 1919-1920 was also a  
handicap and although the contractor did not shut down, his work  
was greatly retarded.

Yours very truly,

JR-PJH  
MAURICE E. CONNOLLY,  
President of the Borough of Queens.

EXHIBIT C-14 (*continued*):

NOTICE.—Bidders are particularly requested to carefully examine the Proposal for Bids, Form of Agreement, Specifications, Plan and the location of the work and the surroundings thereof before bidding.

No.....

10

THE CITY OF NEW YORK  
Office of  
THE PRESIDENT OF THE BOROUGH OF QUEENS

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BUREAU OF SEWERS

1918

20

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ASSESSMENT WORK

Proposal for Bids, Bid, Bond, Agreement and Specifications for Constructing Sewers and Appurtenances in

FIFTY-FIRST STREET (Central Avenue) from Lurting (Willow) Street to Waldron Street (Lawn Avenue), Second Ward of the Borough of Queens

30

together with all the work incidental thereto.

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Time for presenting bids.

1. *Scaled bids* for the above-entitled work will be received at the office of the President of the Borough of Queens, Queens Subway Building, Long Island City, in The City of New York, until 11 o'clock A. M., on MONDAY JUNE 14th, 1918.

Time allowed for completion.

40

2. The time allowed for the full completion of the work herein described will be THREE HUNDRED (300) CONSECUTIVE WORKING DAYS.

Security required.

3. The amount of security required will be ONE HUNDRED THOUSAND 00/100 DOLLARS (\$100,000 00/100).

EXHIBIT C-14 (continued):

Bidders referred to form of agreement, etc.

4. Bidders are referred to the form of agreement, to the specifications and to the plan and drawings of Standard Details on file at the office of the President, and to the following Engineer's estimate of the quantity and kind of work required, the items whereof in all cases include all materials and labor necessary to fully complete said work. Prices for each item shall be named, upon the sum total of which the comparison and tests of bids will be made.

NOTICE TO BIDDERS.

- Bidders are invited to tender bids on monolithic plain and reinforced concrete sewers from 27-inches upward, these sewers being the standards of the Sewer Department and hereafter designated as Type "A", or on reinforced concrete pipe sewers from 24-inches upward (precast) which will be designated as Type "B", or on both types, if they so desire, but it is to be distinctly understood that no bids will be accepted on combinations of Types "A" and "B". Specifications for reinforced concrete pipe sewers, Type "B", will be found attached to page 66 hereof.

Engineer's Estimates.

TYPE "A" OR SEWER DEPT. STANDARD.

- |       |   |
|-------|---|
| 1,052 | Linear Feet 8'-0" Reinforced Concrete Sewer                         |
| 1,373 | Linear Feet 7'-6" Reinforced Concrete Sewer                         |
| 686   | Linear Feet 6'-9" Reinforced Concrete Sewer                         |
| 18    | Linear Feet 3'-3" Plain Concrete Sewer                              |
| 40    | Linear Feet 15" Vitrified Pipe Sewer                                |
| 1,780 | Linear Feet 12" Vitrified Pipe Sewer                                |
| 23    | Manholes on Reinforced Concrete Sewers                              |
| 22    | Manholes on Vitrified Pipe Sewers                                   |
| 2     | Inlets, Complete  |
| 78    | Linear Feet 12" Vitrified Pipe Basin Connections                    |
| 40    | Linear Feet 10" Vitrified Pipe Basin Connections                    |
| 40    | 42 Vertical Feet Risers for House Connections Drains, including Y's |
| 39    | Six-inch Spurs (24" long) on Reinforced Concrete Sewer              |
| 104   | Six-inch Spurs on 12" Vitrified Pipe Sewers                         |
| 1,016 | Linear Feet 6" Vitrified Pipe House Connection Drains               |
| 1     | Junction Chamber at 51st Street & Orontes Street, Complete          |



EXHIBIT C-14 (continued):

- 1 Junction Chamber at 51st Street & Waldron Street, Complete  
150,000 Feet B. M. Timber for sheeting and bracing  
50 Cubic Yards Class "A" Concrete, exclusive of concrete shown on plan  
5,000 Lbs. Reinforcing Steel, exclusive of steel shown on plan  
25 Cubic Yards Rock Excavation.

10

TYPE "B".

- 1,052 Linear Feet 8'-0" Reinforced Concrete Pipe Sewer (Precast Type "B")  
1,373 Linear Feet 7'-6" Reinforced Concrete Pipe Sewer (Precast Type "B")  
686 Linear Feet 6'-9" Reinforced Concrete Pipe Sewer (Precast Type "B")  
18 Linear Feet 3'-3" Reinforced Concrete Pipe Sewer (Precast Type "B")  
40 Linear Feet 15" Vitrified Pipe Sewer  
1,780 Linear Feet 12" Vitrified Pipe Sewer  
23 Manholes on Reinforced Concrete Sewers  
22 Manholes on Vitrified Pipe Sewers  
2 Inlets, Complete  
78 Linear Feet 12" Vitrified Pipe Basin Connections  
40 Linear Feet 10" Vitrified Pipe Basin Connections  
42 Vertical Feet Risers for House Connections Drains, including Y's  
39 Six-inch Spurs (24" long) on Reinforced Concrete Sewer  
104 Six-inch Spurs on 12" Vitrified Pipe Sewers  
1,016 Linear Feet 6" Vitrified Pipe House Connection Drains  
1 Junction Chamber at 51st Street & Orontes Street, Complete  
1 Junction Chamber at 51st Street & Waldron Street, Complete  
150,000 Feet B. M. Timber for sheeting and bracing  
50 Cubic Yards Class "A" Concrete, exclusive of concrete shown on plan  
5,000 Lbs. Reinforcing Steel, exclusive of steel shown on plan  
25 Cubic Yards Rock Excavation.

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The quantities for rock excavation, 150,000 ft. B. M. timber for sheeting and bracing, 50 cubic yards Class "A" concrete (exclusive of concrete shown on plan), and 5,000 lbs. reinforcing steel (exclusive of steel shown on plan), are for the purpose of

EXHIBIT C-14 (*continued*):

securing prices in the event that rock is encountered, that the timber may be necessary, that the concrete shall be required, and that the reinforcing steel shall be used.

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THE BOARD OF ESTIMATE AND APPORTIONMENT

10

City of New York

(Cal. No. 35)

A copy of a resolution of the Local Board of the Newtown District, duly adopted by said Board on the 21st day of July, 1911, and approved by the President of the Borough of Queens on the 26th day of July, 1911, having been transmitted to the Board of Estimate and Apportionment, as follows, to wit:

20 Resolved, that this Board does hereby initiate proceedings for the said local improvement, to wit:

30 For the construction of a sewer and appurtenances in Fifty-First Street (Central Avenue), from Lurting (Willow) Street to Waldron Street (Lawn Avenue), Second Ward of the Borough of Queens, and thereupon on the 21st day of March, 1912, resolutions having been adopted by the Board of Estimate and Apportionment authorizing the President of the Borough of Queens to prepare the necessary plans, specifications and an estimate of the cost of the proposed improvement based on actual survey and further resolving that the Board of Estimate and Apportionment will consider the authorization of the construction of the proposed improvement after the President of the Borough of Queens has submitted certain statements as provided in the said resolution, and the said resolution having been duly complied with by the President of the Borough of Queens, as appears by papers and documents on the files of the Board of Estimate and Apportionment, and there having been presented to the Board of Estimate and Apportionment an estimate in writing in such detail as the Board has directed that the cost of the proposed work or improvement, together with the preliminary expenses, will be the sum of \$223,400, and a statement of the assessed value according to the last preceding tax roll of the real estate included within the probable area of assessment, to wit, the sum of \$32,321,880, having also been presented, it is

40

RESOLVED, that the said resolution of the Local Board be and the same is hereby approved and the construction of the

EXHIBIT C-14 (*continud*):

local imporvement therein provided for is hereby authorized. This Board does hereby determine that no portion of the cost and expense thereof shall be borne and paid by The City of New York, but that the whole of such cost and expense, including the aforesaid preliminary expenses, shall be assessed upon the property deemed to be benefited by the said local improvement.

10 I hereby certify that the foregoing is a true copy of a resolution adopted by the Board of Estimate and Apportionment at a meeting of said Board held on May 31, 1918.

Dated, New York, June 3, 1918.

JAMES MATTHEWS,  
Assistant Secretary,  
Board of Estimate and Apportionment.

J.C.D.

20

Office of

THE PRESIDENT OF THE BOROUGH OF QUEENS

Maurice E. Connolly  
President

Joseph Flanagan  
Borough Secretary

Hugh Hall  
Secretary to President

30

Long Island City, July 25, 1918.

Hon. Charles L. Craig, Comptroller,  
City of New York.

Sir:—

I beg to transmit herewith for registration in the Department of Finance, City of New York, the following contracts;—

40

“For constructing sewer and appurtenances in FIFTY-FIRST STREET (Central Avenue) from Lurting (Willow) Street to Waldron Street (Lawn Avenue), 2nd Ward, Borough of Queens.”

“For regulating, grading, curbing and flagging, and re-regulating, re-grading, re-curbing and re-flagging the following streets:—

EXHIBIT C-14 (continued):

CRESCENT STREET from 13th Street to Nott Avenue,  
HUNTER AVENUE from Harris Avenue to Nott Avenue,  
and  
NOTT AVENUE from Harris Avenue to Jackson Avenue,  
First Ward of the Borough of Queens, together with  
all work incidental thereto, other than any portion  
of the said streets which may fall under the jurisdiction  
of the Commissioner of Parks for the Borough of Queens.”

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“For regulating and repaving with asphalt block  
pavement upon a concrete foundation, together with all  
work incidental thereto, in GRAND AVENUE from Hop-  
kins Avenue to Crescent Street, First Ward, Borough of  
Queens.”

Yours very truly,

MAURICE E. CONNOLLY,  
President of the Borough of Queens.

20 WPB-PJH encls

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Personal examination of work.

5. The foregoing Engineer's Estimate is *approximate only*  
and is not to be considered as a binding feature of the contract.  
Bidders are required to submit their bids upon the following ex-  
press conditions which apply to and become a part of every bid  
received. Bidders must satisfy themselves by personal examina-  
tion of the location of the proposed work and surroundings there-  
of, and by such other means as they may prefer as to the accuracy  
of the foregoing estimate, and shall not at any time after sub-  
mission of their bids, dispute or complain of such estimate of the  
engineer, nor assert that there was any misunderstanding in  
regard to the quantity or kind of materials to be furnished or  
work to be done.

30

Prices to be stated in writing and in figures.

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6. Any bid which fails to name a price, written both in  
words and in figures, per unit of measurement for each of the  
items for which quantities are given, will be held to be informal  
and will be rejected. In case of any discrepancy between the price  
in words and that in figures, the price in words will be considered  
as the bid.

EXHIBIT C-14 (*continued*):

Prices bid to cover.

7. The prices bid must cover the cost of furnishing *all necessary materials and labor for and the complete performance of all the work* set forth in this proposal, described in the form of agreement and specification annexed hereto, and indicated by the plan of the work on file in the office of the President, to all  
10 of which information the bidders are referred.

Rock excavation.

8. The attention of the bidders is particularly directed to the specifications relating to rock excavation.

Bids may be rejected.

9. Permission will not be given for the withdrawal of any bid and the right is expressly reserved by the President to reject all bids if he shall deem it to the public interest so to do.  
20 No bid will be accepted from, or contract awarded to, any person who is in arrears to The City of New York upon debt or contract or who is a defaulter, as surety or otherwise, upon any obligation to The City of New York.

Times and places for commencing and prosecuting work to be determined by the President.

10. Bidders are especially notified that the President reserves the right to determine the times and places for commencing and prosecuting the work, and that postponement or delay  
30 on the whole, or any part thereof, occasioned by the precedence of other contracts, which may be either let or executed before the opening of the bids for this work, can constitute no claim for damages nor for a reduction of the damages fixed for delay in completing the work beyond the time allowed.

No extra compensation.

11. The Contractor will be required to complete the entire work to the satisfaction of the President and in accordance with  
40 the agreement, the specifications and the plan of the work. No extra compensation beyond the amount payable for the several classes of work hereinbefore enumerated, which shall be actually furnished and performed at the prices bid therefor by the bidder to whom the contract is awarded, shall be due or payable for the entire materials and work.

EXHIBIT C-14 (*continued*):

Deposit to accompany bid.

12. No bid will be received or considered unless accompanied by either a certified check upon one of the National or State Banks of The City of New York, drawn to the order of the Comptroller, or money or corporate stock or certificate of indebtedness of any nature issued by The City of New York, which  
10 the Comptroller shall approve as of equal value with the security required, to an amount of five per centum of the amount of the bond required for the faithful performance of the contract (as provided by section 420 of The Greater New York Charter, as amended). Such check or money or other form of security must not be inclosed in the sealed envelope containing the bid, but must be handed to the officer or clerk who has charge of the bidding, and no bid can be deposited in the box provided for that purpose until such check or money or other form of security has been  
20 examined by said officer or clerk and found to be correct. All such deposits, except those of the lowest three bidders, will be returned to the persons making the same within ten days after the opening of the bids: within three days after the awarding of the contract, the remaining deposits, except that made by the bidder whose bid has been accepted, will be returned to the persons making the same. If the successful bidder shall refuse or neglect to execute the contract within five days after notice that it has been awarded to him, and that the adequacy and sufficiency of the security offered has been approved by the Comptroller, the amount of the deposit made by him shall be forfeited to and  
30 retained by The City of New York, but if he shall execute the contract within the time aforesaid, the amount of his deposit will be returned to him.

Names of persons interested.

13. Bidders are required to state in their bids, under oath, their names and places of residence or business, the names of all persons interested with them therein, and if no other person be so interested, they shall distinctly state that fact; also, that  
40 it is made without any connection with any other person making any bid for the same purpose, and that it is in all respects fair and without collusion or fraud; and that no member of the Board of Aldermen, head of a department, chief of a bureau, deputy thereof or clerk therein or officer or employee of The City of New York, is, shall be or become interested, directly or indirectly, as contracting party, partner, stockholder, surety or otherwise, in or in the performance of the contract or in the material, work

EXHIBIT C-14 (*continued*) :

or business to which it relates, or in any portion of the profits thereof. Bidders must verify by oath, in writing, the several matters stated in their bids.

Sealed bids to be submitted.

10           14. Each bid must be delivered in a sealed envelope, endorsed with the *title* of the work for which the bid is made, with the name of the bidder, and the date of presentation to the President at his office, on or before the date and hour hereinbefore named, at which time and place the bids received will be publicly opened by the President and read and the award of the contract made according to law as soon thereafter as practicable. The person or persons to whom the contract may be awarded will be required to attend at said office with the sureties offered by him or them and execute the contract within five days from the date of the service of a notice to the effect that the  
20 contract has been so awarded and the surety accepted; and in case of failure or neglect so to do he or they will be considered as having abandoned the contract and as being in default to the City.

Bidders shall use blank forms to be furnished by the President.

30           15. Bidders shall make their bids upon the forms prepared by the President, a copy of which with the proper envelope in which to enclose the same can be obtained upon application therefor at the office of the President, Long Island City, where the plan can be seen, as also the form of contract, including the specifications in the form approved by the Corporation Counsel.

MAURICE E. CONNOLLY,  
*President of the Borough of Queens.*

The City of New York,....., 191

EXHIBIT C-14 (*continued*):

THE CITY OF NEW YORK  
OFFICE OF THE PRESIDENT OF THE BOROUGH  
OF QUEENS

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BUREAU OF SEWERS

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10

CONTRACT FOR

the construction of a sewer and appurtenances in FIFTY-FIRST STREET (Central Avenue) from Lurting (Willow) Street to Waldron Street (Lawn Avenue), Second Ward of the Borough of Queens, together with all the work incidental thereto.

Parties.

20

THIS AGREEMENT, made and entered into this 12th day of July, in the year one thousand nine hundred and eighteen by and between The City of New York, party of the first part, by the President of the Borough of Queens, and Joseph L. Sigretto & Co., of 1455 Woodhaven Avenue, Woodhaven, L. I., Contractor, party of the second part, pursuant to the provisions of The Greater New York Charter, and the resolution of The Board of Estimate and Apportionment adopted on the 21st day of March 1912, of which resolution the following is a copy:

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RESOLUTION

BOARD OF ESTIMATE AND APPORTIONMENT

City of New York

40 WHEREAS, The President of the Borough of Queens has transmitted to the Board of Estimate and Apportionment a copy of a resolution of the Local Board of the Newton District, duly adopted by said Board of the 21st day of July, 1911, and approved by the President of the Borough of Queens on the 26th day of July, 1911, as follows, to wit:

“RESOLVED, That this Board does hereby initiate proceedings for the said local improvement, to wit:



EXHIBIT C-14 (continued) :

For the construction of a sewer and appurtenances in Fifty-First Street (Central Avenue), from Lurting (Willow) Street to Waldron Street (Lawn Avenue), Second Ward of the Borough of Queens," and which resolution is accompanied with an approximate estimate of the cost of work and the assessed value of the property benefited.

10           RESOLVED, That the Board of Estimate and Apportionment hereby authorizes the President of the Borough of Queens to prepare plans, specifications and an estimate of cost based on actual survey, and also to secure a determination of the boundary of the district of assessment; the entire expense of the work done subsequent to the date of this authorization to be charged against the Street Improvement Fund and later included in the assessment.

20           RESOLVED, That the Board of Estimate and Apportionment will consider the authorization of the construction of the said proposed improvement after the President of the Borough of Queens has submitted a statement showing that all of the above described work has been done, that he has secured the approval of the form of contract by the Corporation Counsel, that he is prepared to place the improvement under contract as soon as he receives the consent of the Board, and that the assessment map will be completed on or before the date of payment on acceptance; this report being accompanied by a further statement showing the quantity of work to be performed under each item and the unit price thereof, the expense incurred for preliminary work, the allowance to be made for additional engineering and contingencies, the total probable cost, and the number of working days to be allowed the contractor for carrying out the work.

30

I hereby certify that the foregoing is a true copy of a resolution adopted by the Board of Estimate and Apportionment at a meeting of said Board held on March 21, 1912.

Dated, New York, March 23, 1912.

40    WILLIAM M. LAWRENCE,  
  Assistant Secretary,  
  Board of Estimate and Apportionment.

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EXHIBIT C-14 (continued) :

RESOLUTION

BOARD OF ESTIMATE AND APPORTIONMENT.

City of New York

(Cal. No. 35)

10       A copy of a resolution of the Local Board of the Newtown District, duly adopted by said Board on the 21st day of July, 1911, and approved by the President of the Borough of Queens on the 26th day of July, 1911, having been transmitted to the Board of Estimate and Apportionment, as follows, to wit:

“RESOLVED, That this Board does hereby initiate proceedings for the said local improvement, to wit:

20       For the construction of a sewer and appurtenances in Fifty-First Street (Central Avenue), from Lurting (Willow) Street to Waldron Street (Lawn Avenue), Second Ward of the Borough of Queens, and thereupon on the 21st day of March, 1912, resolutions having been adopted by the Board of Estimate and Apportionment authorizing the President of the Borough of Queens to prepare the necessary plans, specifications and an estimate of the cost of the proposed improvement based on actual survey and further resolving that the Board of Estimate and Apportionment will consider the authorization of the construction of the proposed improvement after the President of the Borough of Queens has submitted certain statements as provided  
30       in the said resolution, and the said resolution having been duly complied with by the President of the Borough of Queens, as appears by papers and documents on the files of the Board of Estimate and Apportionment, and there having been presented to the Board of Estimate and Apportionment an estimate in writing in such detail as the Board has directed that the cost of the proposed work or improvement, together with the preliminary expenses, will be the sum of \$223,400, and a statement of the assessed value according to the last preceding tax roll of the real estate included within the probable area of assessment, to  
40       wit, the sum of \$32,321,880, having also been presented, it is

RESOLVED, That the said resolution of the Local Board be and the same is hereby approved and the construction of the local improvement therein provided for is hereby authorized. This Board does hereby determine that no portion of the cost and expense thereof shall be borne and paid by The City of New

EXHIBIT C-14 (*continued*):

York, but that the whole of such cost and expense, including the aforesaid preliminary expenses, shall be assessed upon the property deemed to be benefited by the said local improvement.

I hereby certify that the foregoing is a true copy of a resolution adopted by the Board of Estimate and Apportionment at a meeting of said Board held on May 31, 1918.

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Dated, New York, June 3, 1918.

(Signed) JAMES MATTHEWS,  
Assistant Secretary,

JCD.

Board of Estimate and Apportionment.

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Covenant.

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WITNESSETH, That the parties to these presents, each in consideration of the agreements on the part of the other herein contained, have mutually agreed, and hereby mutually agree, the party of the first part for itself and its successors, and the party of the second part for itself, himself, or themselves, and its, his or their executors, administrators, successors, and assigns, as follows:

Contract.

30

I. The contract for the hereinbefore entitled work shall include the following, which are hereby agreed upon as forming part and parcel thereof: the Proposal for Bids, the Bid, the Bond, this Agreement and the Specifications hereto annexed: also the Plan of the Work dated April 9th, 1918, filed in the office of the President of the Borough, entitled: Plan, Profile and Details for the construction of a sewer in FIFTY-FIRST STREET from Lurting Street to Waldron Street, Second Ward, and also the Drawings of Standard Details pertinent thereto on file in the office of the Engineer.

40

Party of the first part.

II. Whenever the term "The City" or a word "President," or a pronoun in place of either, is used, it refers to and means The City of New York, the party of the first part hereto, or the President of the Borough of Queens, or his authorized representative.

EXHIBIT C-14 (*continued*):

Party of the second part.

Whenever the word "Contractor," or a pronoun in place thereof, is used, it refers to and means the party of the second part hereto.

Engineer described.

- 10           III. Whenever the word "Engineer," or a pronoun in place thereof, is used, it refers to and means the Engineer in Charge of Sewers, Borough of Queens, acting either directly or through assistants designated by him to act in the premises, limited to the particular duties entrusted to them. In case said Engineer may not be able to act, then such Engineer as may be designated by the President shall act in his place.

Terms defined.

- 20           IV. Whenever the word "plan" is used it refers to and means the plan of this work and the standard drawings pertinent thereto. Whenever it is provided that anything is "to be" or "to be done," "if" or "as," or "when" or "where approved," "required," "directed," "permitted," "ordered," "designated" or "deemed necessary" it shall be taken to mean approved, required, permitted, ordered, designated or deemed necessary as the case may be by the Engineer. Whenever the words "desirable," "suitable," "sufficient," "satisfactory" or others of a similar purport are  
30 used it is hereby agreed that the desirability, suitability, sufficiency, satisfactoriness or other denominated condition shall be as determined by the Engineer.

Contractor to furnish tools, proper appliances, etc.

- 40           V. The Contractor hereby agrees to furnish and provide all materials, labor, and appliances necessary and proper for the purpose, to excavate for, build, complete and connect in a good substantial manner, to the satisfaction of the President, and in conformity with the contract, the hereinbefore entitled work and all the work incidental thereto, and the Contractor hereby agrees to receive and accept as and for his full compensation the following prices, which are the amounts or rates at which this contract was awarded to the Contractor at the public letting thereof:

EXHIBIT C-14 (continued):

Prices.

TYPE "A" OR SEWER DEPT. STANDARD.

	1,052	Linear Feet 8'-0" Reinforced Concrete Sewer, Per Linear Foot .....	Dollars (\$.....).
	1,373	Linear Feet 7'-6" Reinforced Concrete Sewer, Per Linear Foot .....	Dollars (\$.....).
10	686	Linear Feet 6'-9" Reinforced Concrete Sewer, Per Linear Foot .....	Dollars (\$.....).
	18	Linear Feet 3'-3" Plain Concrete Sewer, Per Linear Foot, .....	Dollars (\$.....).
	40	Linear Feet 15" Vitrified Pipe Sewer, Per Linear Foot, .....	Dollars (\$.....).
	1,780	Linear Feet 12" Vitrified Pipe Sewer, Per Linear Foot, .....	Dollars (\$.....).
	23	Manholes on Reinforced Concrete Sewer, Each, .....	Dollars (\$.....).
20	22	Manholes on Vitrified Pipe Sewers, Each, .....	Dollars (\$.....).
	2	Inlets, Complete, Each, .....	Dollars (\$.....).
	78	Linear Feet 12" Vitrified Pipe Basin Connections, Per Linear Foot, .....	Dollars (\$.....).
	40	Linear Feet 10" Vitrified Pipe Basin Connections, Per Linear Foot, .....	Dollars (\$.....).
	42	Vertical Feet Risers for House Connection Drains, including Y's, Per Vertical Foot .....	Dollars (\$.....).
30	39	Six-Inch Spurs (24" long) on Reinforced Concrete Sewer, Each, .....	Dollars (\$.....).
	104	Six-Inch Spurs on 12" Vitrified Pipe Sewers, Each, ....	Dollars (\$.....).
	1,016	Linear Feet 6" Vitrified Pipe House Connections Drains, Per Linear Foot, .....	Dollars (.....).
	1	Junction Chamber at 51st Street & Orontes Street, Complete, .....	Dollars (\$.....).
40	1	Junction Chamber at 51st Street & Waldron Street, Complete, .....	Dollars (\$.....).
	150,000	Feet B. M. Timber for sheeting and bracing, Per 1,000 Foot .....	Dollars (\$.....).
	50	Cubic Yards Class "A" Concrete (exclusive of concrete shown on plan), Per Cubic Yard .....	Dollars (\$.....).
	5,000	Lbs. Reinforcing Steel, (exclusive of steel shown on plan), Per Lb., .....	Dollars (\$.....).

EXHIBIT C-14 (continued):

25 Cubic Yards, Rock excavation, Per Cubic Yard .....  
..... Dollars (\$.....).

TYPE "B"

- 10 1,052 Linear Feet 8'-0" Reinforced Concrete Pipe Sewer (Pre-cast Type "B"), Per Linear Foot, One hundred eight 00/100 Dollars (\$108.00).
- 1,373 Linear Feet 7'-6" Reinforced Concrete Pipe Sewer (Pre-cast Type "B"), Per Linear Foot, Ninety eight 00/100 Dollars (\$98.00).
- 686 Linear Feet 6'-9" Reinforced Concrete Pipe Sewer (Pre-cast Type "B"), Per Linear Foot, Eighty six 00/100 Dollars (\$86.00).
- 18 Linear Feet 3'-3" Reinforced Concrete Sewer (Precast Type "B"), Per Linear Foot, Thirty four 00/100) Dollars (\$34.00).
- 20 40 Linear Feet 15" Vitrified Pipe Sewer, Per Linear Foot, Five 00/100 Dollars (\$5.00).
- 1,780 Linear Feet 12" Vitrified Piper Sewer, Per Linear Foot, Four 00/100 Dollars (\$4.00).
- 23 Manholes on Reinforced Concrete Pipe Sewer, Each, Four hundred Dollars (\$400.00).
- 22 Manholes on Vitrified Pipe Sewers, Each, One hundred Dollars (\$100.00).
- 2 Inlets, Complete, Each, Sixty 00/100 Dollars (\$60.00).
- 30 78 Linear Feet 12" Vitrified Pipe Basin Connections, Per Linear Foot, Two 00/100 Dollars (\$2.00).
- 40 Linear Feet 10" Vitrified Pipe Basin Connections, Per Linear Foot, Two 00/100 Dollars (\$2.00).
- 42 Vertical Feet Risers for House Connection Drains, including Y's, Per Vertical Foot, Four 00/100 Dollars (\$4.00).
- 39 Six-Inch Spurs (24" long) on Reinforced Concrete Sewer, Each, One 00/100 Dollars (\$1.00).
- 40 104 Six-Inch Spurs on 12" Vitrified Pipe Sewers, Each, Two 00/100 Dollars (\$2.00).
- 1,016 Linear Feet 6" Vitrified Pipe House Connections Drains, Per Linear Foot, One 50/100 Dollars (\$1.50).
- 1 Junction Chamber at 51st Street & Orontes Street, Complete, Two thousand 00/100 Dollars (\$2000.00).
- 1 Junction Chamber at 51st Street & Waldron Street, Complete, One thousand Dollars (\$1000.00).

EXHIBIT C-14 (*continued*):

- 150,000 Feet B. M. Timber for sheeting and bracing, Per 1,000 Feet B. M., Ninety 00/100 Dollars \$90.00);
- 50 Cubic Yards Class "A" Concrete (exclusive of concrete shown on plan), Per Cubic Yard, Twelve 00/100) Dollars (\$12.00).
- 5,000 Lbs. Reinforcing Steel, (exclusive of steel shown on plan), Per Lb., Eight cents (\$0.08).
- 10      25 Cubic Yards rock excavation, Per cubic yard, Eight 00/100 Dollars (\$8.00).

The quantities for rock excavation, 150,000 feet B. M. timber for sheeting and bracing, 50 cubic yards Class "A" concrete (exclusive of concrete shown on plan) and 5,000 pounds reinforcing steel (exclusive of steel shown on plan); are for the purpose of securing prices in the event that rock is encountered, that the timber may be necessary, that the concrete shall be required, and that the reinforcing steel shall be used.

20      Quantities are approximate only.

No extra compensation.

30      VI. The Contractor admits that the quantities of materials to be furnished and the amount of work to be done, as stated in the proposal for bids for the work, are approximate only. The Contractor agrees that The City is not to be held responsible that any of said quantities and amounts shall obtain in the construction of the work, as he has judged for himself as to such quantities and amounts and each of them, and as to the other circumstances affecting the cost of the performance of this contract; and that he will not at any time dispute or complain of such statement nor assert that there was any misunderstanding in regard to the character, size or depth of the excavations to be made or the kind or amount of the materials to be furnished or work to be done. The Contractor hereby agrees that he will not ask, demand, sue for, nor seek to recover for the entire work any extra compensation beyond the amount payable for the several classes of work and kinds of materials in this contract

40      enumerated, which shall be actually performed and furnished, at the prices therefor herein agreed upon and fixed.

Sewers, etc., to be built as shown on the plan.

VII. The sewer and appurtenances will be built on the lines, at the depths and at the grades and in the manner shown

EXHIBIT C-14 (*continued*):

on the plan of the work as the same will be designated on the ground by the Engineer.

Line may be changed.

10 The President may change the line of the sewer or the location of the receiving basins, or other sewer appurtenances provided such changes do not materially affect either the character or the amount of the work to be done, or the conditions under which it is to be performed, and the Contractor hereby agrees to make no claim for damages or extra compensation on account thereof.

Preservation of points, stakes, etc.

20 The Contractor will safeguard all points, stakes, grade marks, monuments and bench marks made or established on or near the line of work, and he agrees to accept responsibility for and to remedy at his cost any mistakes that may be caused by the unauthorized disturbance or removal of such points, stakes, grade marks, monuments and bench marks.

Written order for extra work.

30 VIII. No claim for additional work or materials shall be made by or allowed to the Contractor, unless before the performance of such additional work the President shall have first authorized the same, in writing, and the same shall have been done or furnished under a written order from the President, given before the performance of such additional work or the furnishing of such additional materials. The aggregate price to be paid for additional work or materials so authorized or ordered shall not exceed five per cent. (5%) of the contract price or the total cost of the work and materials.

Contract may be modified.

40 This contract may be modified and changed from time to time as may previously be agreed to, in writing, between the parties hereto, in a manner not materially affecting the substance thereof or increasing the contract price thereunder, in order to carry out and complete more fully and perfectly the work herein agreed to be done and performed.

Limit to extras.

All claims for additional work or materials in any month shall be made to the Engineer, in writing, before the 15th day of



EXHIBIT C-14 (*continued*):

the following month, and failing to make such claim within the time required, the rights of the Contractor to additional pay for such additional work or materials shall be deemed to have been waived and forfeited.

Inspection.

- 10 Work or materials may be condemned at any time.

IX. The Engineer shall inspect the materials furnished and the work done and see that the same correspond with the specifications. The Engineer is hereby authorized and empowered to reject and refuse all labor and material or method of application, or any part thereof, offered under or in fulfillment of this contract, that do not comply in kind, quality or quantity with the terms thereof. Any material delivered or offered to be delivered under this contract, which shall be rejected by the Engineer as not conforming to the terms thereof, will be forthwith removed by the Contractor, and material which does so conform will be forthwith furnished and delivered by him in place thereof. The Contractor hereby agrees not to use any material which has not been inspected and accepted, nor to perform any work except under inspection, to which end he further agrees to notify the Engineer when lines, grades or inspection are required so that the Engineer may have time to provide for the same. No inspection, approval or acceptance of any part of the work herein contracted for or of the materials used therein, or any payment on account thereof, shall prevent the President from refusing to accept the work or materials at any time thereafter.

Engineer to be final arbiter.

X. To prevent all disputes and litigation, it is hereby agreed that the Chief Engineer in Charge of Sewers shall, in all cases determine the amount and the quality of the several kinds of work and materials which are to be paid for under this contract, and he shall determine all questions in relation to the work and materials and the construction thereof, and he shall in all cases decide every question which may arise relative to the execution of this contract on the part of the Contractor, and his decision will be final and conclusive; and such decision, in case any question shall arise, shall be a condition precedent to the right of the Contractor to receive any money under this contract.

Any doubt as to the meaning of this contract and the specifications thereof, or any obscurity as to the wording of them,

EXHIBIT C-14 (*continued*):

or any discrepancy between them and the plan will be explained by the Engineer, and his explanation will be accepted by the Contractor, who hereby agrees to execute the work in accordance with such explanation, and to make no charge or claim for any extra work or damage on account thereof.

Work and materials must agree with specifications.

- 10           XI. The work will be performed in the best manner, and all materials of which the work is composed will be of the best kind, and a sufficient number of persons will be at all times employed to execute the work with due dispatch, the whole to be done to the satisfaction of the Engineer, and any materials furnished or work done not satisfactory to the Engineer will be immediately removed and satisfactorily replaced by the Contractor at his own expense; or if he shall neglect or refuse to remove and replace the same when notified so to do by a written notice
- 20           to be served upon him, then the President may remove, or cause the same to be removed and satisfactorily replaced, by contract or otherwise, as he may deem expedient, and charge the expense thereof to the Contractor: and the expense so charged shall be deducted and paid by The City out of such moneys as are or may become due under this contract.

Examinations.

- 30           During the progress or after the completion of the work, should the Engineer require it, for the purpose of examining the same, the Contractor will make such openings, and to such extent through such part or parts of the work as the Engineer may direct, and the Contractor will satisfactorily restore the work so disturbed. Should the openings disclose defects in the work such defects shall be remedied in accordance with the provisions of the first paragraph of this section.

Use of patented articles.

- 40           XII. Wherever an article or any kind of material is specified by a trade name or by the name of a patentee, manufacturer or dealer, or by reference to the catalogue of a manufacturer or dealer, it shall be taken as intending to mean and specify the article or kind of material designated, or any other equal thereto in quality, finish and durability, and equally serviceable for the purposes for which it is or they are intended. Nothing on the plan or in the specifications shall be interpreted or taken to violate the provisions of section 1554 of the Greater New York

EXHIBIT C-14 (*continued*):

Charter, which provides that "except for repairs, no patented pavement shall be laid and no patented article shall be advertised for, contracted for or purchased, except under such circumstances that there can be a fair and reasonable opportunity for competition, the conditions to secure which shall be prescribed by the Board of Estimate and Apportionment."

10 Claims for infringement.

The Contractor will be responsible for any claims made against The City for any infringement of patents, by the use of patented articles or processes in the construction and completion of the work, and he will have harmless and indemnify The City against all costs, expenses and damages caused by reason of any infringement of patents used in the construction and completion of the work.

20 Commencement and completion.

XIII. The Contractor will begin the work herein agreed to be performed on such date as the President shall notify him to begin on and from which date the time hereinafter fixed for the completion of the work shall begin to run. The place where the work is to be begun will be either stated in said notice or designated on the ground by the Engineer. The commencement of work by the Contractor shall be deemed and taken to be a waiver on his part of notice to begin work, in which case the time for the completion of the work will begin to run on and from the date the work was commenced.

30

Time of performance.

XIV. The Contractor will carry on the work with such force and in such manner and order and at such places, times and seasons, including freezing weather, as may be directed by the Engineer, and will execute all the work in every respect in a thorough and workmanlike manner; and he will fully and entirely perform this contract on his part before the expiration of THREE HUNDRED (300) CONSECUTIVE WORKING DAYS.

40

Time important.

It is hereby agreed that the time designated for the performance of all the work under this Contract is of the essence of this agreement, in view whereof it is hereby further agreed that a rate of progress will be maintained so that the work performed up to any time will be at least the same percentage of the total

EXHIBIT C-14 (*continued*):

work to be performed under this contract as the net elapsed time at such time is of the total time allowed for the performance of all the work under this contract.

10 In the computation of the number of consecutive working days, the time during which the completion of the work has been delayed in consequence of the condition of the weather, or tides, or by any act or omission of the party of the first part or during such period as the work has been suspended by written order of the President, or delays for which the Contractor is not responsible (all of which will be determined by the President, who shall certify to the same in writing, and whose determination and certificate thereof shall be binding and conclusive upon the Contractor), will be allowed to the Contractor and will be deducted in computation. Sundays and also holidays on which no work is done, will also be excluded from said computation. In case a larger amount of rock excavation than is set forth in the Engineer's Estimate shall be necessary, an allowance of 20 one day will be made for each 25 cubic yards of such excess of rock excavated and removed in accordance with the measurement of rock allowed by the specifications. If the completion of the work to be done under this contract shall require work or materials or both in greater amounts than those set forth in the Engineer's Estimate of Quantities, or if unforeseen obstacles are encountered in the prosecution of said work then the time which the Contractor is delayed on account thereof will be determined and allowed by the 30 President at the completion of the work, upon the receipt by him of a written application from the Contractor for such determination and allowance. No demand by the Contractor that the President determine and certify the matters aforesaid shall be of any effect whatsoever unless the same be made in writing and duly served upon the President prior to the filing in the office of the Comptroller of The City of the final certificate of the completion and acceptance of the work.

End of time period.

40 The time shall run against this contract until all work called for in this contract is completed to the satisfaction of the Engineer.

Liquidated damages.

XV. In case the Contractor shall fail to complete the work hereunder in accordance with the contract within the time

EXHIBIT C-14 (*continued*) :

10 aforesaid, he agrees to pay to The City the sum of Ten Dollars (\$10.00) for each and every day the time consumed in said performance and completion exceeds the time hereinbefore allowed for that purpose; which said sum, in view of the difficulty of ascertaining the loss which The City will suffer by reason of delay in the performance of the work hereunder, is hereby agreed upon, fixed and determined by the parties hereto as the liquidated damages that The City will suffer by reason of said delay and default, and not as a penalty; and The City shall and may deduct and retain the amount of such liquidated damages out of the moneys which may be due or become due to the Contractor under this contract.

Work no provided for in contract.

20 XVI. If, before the completion of the work contemplated herein, it shall become necessary to do any other or further work on or near the line thereof than is provided for in this contract, the Contractor will not in any way interfere with or molest such person or persons as the President may employ to do such work, and will carry on the work under this contract in such manner as may be ordered so as to afford all reasonable facilities for doing such other or further work; and no damage or claim by the Contractor shall be allowed therefor, except such allowance of time for delay as the President may deem reasonable.

President's right to suspend work.

30 XVII. The President is hereby authorized to suspend the whole or any part of the work herein contracted to be done, if he shall deem it for the interest of The City so to do. During such suspension the trenches shall be backfilled, if required, and the roadways and pavements over the same satisfactorily restored, and all materials upon the work shall be neatly piled so as not to obstruct public travel, or shall be removed from the line of the work, if directed.

40 No damages to be claimed for delay due to other contracts.

XVIII. Should postponement or delay be occasioned by the precedence of paving or other contracts, which may have been either let or executed before the opening of the bids for this contract, the Contractor will make no claim for damages therefor nor for any damages in consequence of the street or the adjoining sewers not being in the condition contemplated by the parties at

EXHIBIT C-14 (*continued*):

the time of making the contract; if, however, the Contractor shall be delayed in performance of his work by reason of the street or the adjoining sewers not being in such condition, or by reason of the work or any work or any part thereof being suspended as herein before provided, such allowance of time on account thereof as the President shall deem reasonable will be made.

- 10           If the work be suspended or delayed by any act or omission of The City, or for the reason that The City does not own or has not obtained possession of, or the right to enter upon the land upon which the work is to be performed, or because of any act or omission of any employee or agent of The City or any other Contractor performing work for The City, the President, or whoever is directed by this contract, to make the certificate in reference to time, shall make such allowance of time for the completion of the work as the Engineer shall certify that the work has been
- 20           delayed. No allowance whatever as damages will be made to the Contractor because of any such suspension or delays, and no claim shall be made by the Contractor on account thereof.

Allowance of time for delays.

- XIX. No allowances of time for delays under the provisions of this contract nor the delivery and acceptance of any articles or materials called for by this contract, shall be deemed to be a waiver by the President of the right to abrogate this contract for abandonment or delay in the manner hereinafter
- 30           provided.

Right to construct sewers, etc.

Permits for connections.

- XX. Prior to the commencement of and during the progress of the work under this contract the President shall have the right to undertake, and to grant permits for, any construction, reconstruction, and repairing of any pipes, sewers, basins, subway ducts and railway tracks, and any appurtenances thereof
- 40           located on and adjoining the line of the work, and for any connections with and additions to such pipes, etc., and for such purposes the President is hereby authorized to suspend work on any part of this contract, in accordance with Section XVII., and the Contractor will not interfere with nor place any obstructions in the way of any person or persons who may be engaged upon such work. The President is hereby authorized to connect, by contract or otherwise, any sewers and drains with the work built under

EXHIBIT C-14 (*continued*):

10 this contract and to grant permits to any person or persons to make connections therewith at any time before it is completed; and the Contractor will not interfere with nor place obstructions in the way of such persons as may be employed in building such sewers and drains, or in making such connections, and the flow from such sewers, drains and connections will be permitted by the Contractor to discharge into the work built under this contract and the Contractor agrees to make no claim for compensation, damages or delay on account thereof. The issuance of such permits shall not be considered as an acceptance by The City of that part of the sewer into which such connections empty or flow, nor shall the Contractor on account thereof be relieved from the cleaning of the sewer prior to the final examination of the work. No new connections or drains will be allowed to be made or joined to the work built under this contract unless a permit therefor has been duly issued by the President, which permit shall be shown in all cases to the Inspector of the work.

20 Flow of sewer and drains, etc.

Drains, etc., interrupted.

Sewers, etc., to be kept clean.

30 XXI. The Contractor will provide at his own cost for the flow of the sewers, drains and water courses interrupted during the progress of the work, and will immediately cart away and remove all offensive matter. The flow throughout the entire length of such sewers and appurtenances as are to be replaced by the work to be done under this contract will be maintained by the Contractor. The Contractor will remove at his own cost and expense all such bulkheads, as may be directed, from the sewers with which the work under this contract will be connected. When the permanent removal of any existing pipe sewers and appurtenances and pipe drains is necessitated by the work to be done under this contract, such of the materials of such structures as may be directed shall be carefully taken up, piled and left at the disposal of The City, and shall not be used in the work, and the remainder shall be removed from the work and disposed of by the Contractor. Wherever the work to be built under this contract, or the trenches in which it is to be constructed, follow the line, and occupy the place of or intercept the Fire Alarm Telegraph System of The City, or any existing sewers, drains, culverts, basin connections or house connections for which permits may have been granted prior to the opening of the bids for this contract.

40

EXHIBIT C-14 (*continued*):

the Contractor will make the same good, and will rebuild the Fire Alarm Telegraph System of The City and also said sewers, drains, culverts and connections, or connect the same with the sewer built under this contract, whichever he may be directed to do, at his own cost and expense. All sewers, drains, culverts, basins and basin connections rendered unnecessary by the construction of the work herein contemplated, shall be thoroughly broken up, except as otherwise hereinbefore provided, and satisfactorily filled in by the Contractor at his own cost and expense. as shall also all portions of water courses in, through or across any street that may be rendered unnecessary by the construction of this work. During the progress of the work, and until the completion and acceptance thereof, the sewers, drains, basins, culverts and connections built under this contract shall be kept thoroughly cleaned throughout, and shall be left clean.

Sale of sand or earth.

20 XXII. The Contractor will not sell, nor permit to be removed from the line of the work, before the trench shall have been backfilled, any building sand or earth thrown up, except upon written permission, and then only so much as shall remain after reserving a sufficient quantity to backfill the trench and complete the paving; and the Contractor will, in all cases, backfill the trench with the same material thrown out, provided it be suitable, then the same shall be removed from the line of work, and suitable material procured and used for backfilling the trench, and when required sand of proper quality and depth shall 30 be spread on the surface to receive the pavement.

The Contractor hereby agrees that all excavated material and materials of construction placed by him or for him upon private property, unless by written permission of the owners or lessees thereof, will be removed by him and all damage to said property remedied by him at his own cost and expense. Unless such materials are removed and such damage remedied by the Contractor within 48 hours after the receipt by him of a written notice so to do, he agrees that the President shall be and is hereby 40 authorized to dispose of such materials, and to remedy such damage and to deduct the expense thereof from the moneys due or to become due under this contract.



EXHIBIT C-14 (*continued*):

Contractor to give personal attention to work.

Not to assign or sublet.

10           XXIII. The Contractor will give his personal attention constantly to the faithful prosecution of the work; he will not assign, transfer, convey, sublet or otherwise dispose of this contract, or his right, title or interest in or to the same, or any part thereof, without the previous consent, in writing, of the President, indorsed hereon or hereto attached; and he will not assign, by power of attorney or otherwise, any of the moneys to become due and payable under this contract, unless by and with the like consent, signified in like manner. If the Contractor shall, without such previous written consent, assign, transfer, convey, sublet or otherwise dispose of this contract, or of his right, title or interest therein, or any of the moneys due or to become due under this contract, to any other person, company or other corporation, this 20 contract may, at the option of the President, be revoked and annulled, and The City shall thereupon be relieved and discharged from any and all liability and obligations growing out of the same to the Contractor, and to his assignee or transferee; provided that nothing herein contained shall be construed to hinder, prevent or affect an assignment by the Contractor for the benefit of his creditors, made pursuant to the statutes of the State of New York; and no right under this contract, or to any money to become due hereunder, shall be asserted against The City, in law or in equity, by reason of any so-called assignment 30 of this contract, or any part thereof, or of any moneys due or to become due hereunder, unless authorized as aforesaid by the written consent of the President.

When Contractor is absent.

Disorderly workmen.

Contractor to provide assistance.

40           XXIV. Whenever the Contractor is not present on any part of the work where it may be necessary to give directions, orders will be given by the Engineer to and shall be received and obeyed by the superintendents and foremen who may have immediate charge of the men employed on the particular work in relation to which the order may be given; and at any time, if a foreman or workman employed by the Contractor shall be declared by the Engineer to be disobedient, incompetent or disrespectful, the Contractor, on receiving written notice to that effect,

EXHIBIT C-14 (continued):

will forthwith dismiss such person, and will not again employ him on any part of the work. The Contractor will provide all necessary assistance for the Engineer when required, without charge or expense to The City or Engineer.

Contractor to plank and bridge for traffic.

- 10       XXV. The Contractor will observe the law and all ordinances of The City in relation to obstructing the streets, keeping open passageways and protecting the same where they are exposed and would be dangerous to the public travel, and such passageways shall, as may be required, be planked or bridged by the Contractor, at his own expense.

Guards and lights.

Indemnification of City.

- 20       XXVI. During the performance of the work herein set forth the Contractor will place proper guards upon and around the same for the prevention of accidents, and at night will put up and keep suitable and sufficient lights, and he will indemnify and save harmless The City against and from all claims, suits and actions, of every name and description, brought against it, and all costs and damages to which it may be put on account or by reason of any injury or alleged injury to the person or property of another, resulting from the prosecution of the work or from negligence or carelessness in the performance of the work.
- 30       or in guarding the same, or from any improper materials used in its prosecution, or by or on account of any act or omission of the Contractor or his agents; and the Contractor agrees that the whole or so much of the moneys due to the Contractor under and by virtue of this contract, as shall or may be considered necessary by the Comptroller of The City, may, as its option, be retained by The City until all such suits and claims for damages as aforesaid shall have been settled, and evidence to that effect furnished to the satisfaction of the Comptroller.

- 40       Contractor to make repairs.

XXVII. In case any injury is done to property along the line of the work, or to any sidewalk, in consequence of any act or omission on the part of the Contractor or his employees or agents in carrying out any of the provisions or requirements of this contract, the Contractor will make such repairs as are necessary in consequence thereof, at his own expense and to the satisfaction

EXHIBIT C-14 (*continued*) :

of the President, and in case of failure on the part of the Contractor to promptly make such repairs, they may be made by the President, and the expense thereof will be deducted out of the moneys due or to become due to the Contractor under this contract.

Loss or damage to be assumed by Contractor.

10           XXVIII. The Contractor agrees to assume, and to make no claim on account of, any and all loss or damages arising out of the nature of the work to be done under this contract, or from any unforeseen obstructions or difficulties which may be encountered in the prosecution of the same, or from the action of the elements, or from incumbrances on or near the line of the work, or from the breaking of water mains, sewer and gas mains on or near the line of the work.

20           Claims for labor, etc.

          XXIX. The Contractor will pay promptly, and in cash, for all labor employed upon and all materials furnished and used in the work, and if at any time before or within thirty days after the whole work herein agreed to be performed has been completed and accepted by The City, any person or persons claiming to have performed any labor or furnished any materials toward the performance and completion of the contract, shall file with the President and with the Comptroller of The City any such notice as is described in the Lien Law or any act of the Legislature of  
30           the State of New York, then, and in every such case, The City shall retain—anything herein contained to the contrary thereto notwithstanding—from the moneys under its control, and due or to become due under this contract, so much of the moneys as shall be sufficient to pay off, satisfy and discharge the amount in such notice alleged or claimed to be due to the person or persons filing such notice, together with the reasonable cost of any action or actions brought to enforce such claim or the lien created by the filing of such notice. The money so retained shall be retained by  
40           The City until the lien thereon created by the said act and the filing of the said notice shall be discharged, pursuant to the provisions of the said act.

Contractor will prevent filing of liens, etc.

          XXX. The Contractor will not, at any time, suffer or permit any lien, attachment, or other incumbrances, under the law of this State or otherwise, by any person or persons whom-

EXHIBIT C-14 (*continued*):

soever, to remain on file in the Finance Department or at the office of the City Department having supervision of the work against any money due or to become due for any work done or materials furnished under this contract, or by reason of any other claim or demand against the Contractor; and that any such lien, attachment, or other incumbrance, until it is removed, shall preclude any and all claim or demand for any payment whatsoever  
10 under or by virtue of this contract.

Evidence of satisfaction of liens, etc.

The Contractor further agrees that he will present to the party of the first part satisfactory evidence that all just liens, claims and demands of his employees, or of parties from whom materials used in the construction of the work may have been purchased or procured are fully satisfied and that the materials furnished and work done under this contract are fully released  
20 from all such liens, claims and demands before said party of the second part will demand or shall receive the sums due one final payment under this contract.

Notice to gas companies, etc.

Not to hinder other companies.

XXXI. The Contractor will give notice in writing to all gas, railroad and other companies owning or controlling any pipe, tracks or other structures which during the progress of the work  
30 may be affected by the prosecution of the same so that said companies may protect or remove their structures, and he will not cause any hindrance to, or interference with, any such gas company or other company or companies in protecting their said pipes, tracks or other structures, nor in removing or otherwise protecting and replacing the main and service pipe, lampposts, lamps, tracks or other structures where necessary, but the Contractor will suffer the said company or companies to take all such measures as are requisite for the purpose aforesaid. But if said  
40 gas, railroad, or other companies, within five days after receipt of such notice, fail to support, remove or otherwise protect their structures (except such railroad tracks or other railroad structures upon or within a right of way owned by a railroad company (see Section XXXIV), the Contractor will upon the approval of the President protect or remove the same, it being expressly understood that the cost thereof shall not be a charge against The City, but shall be a matter for adjustment between the Contractor and the company or companies concerned.

EXHIBIT C-14 (*continued*):

Pipes, conduits, etc., of private companies.

10 XXXII. It is hereby agreed that The City is not responsible or liable for the support, protection or reconstruction of such gas pipes, conduits, water pipes, tracks or structures owned by private companies enjoying special franchises or occupying any portion of the street or way on or below the surface in its streets or ways, as the Contractor admits that he has carefully  
20 examined the location of work, has made special inquiry at the offices of the companies owning, controlling or operating said pipes, conduits, tracks and structures, and he has determined to his satisfaction the character, size, location and length of such pipes, conduits, tracks and structures; that he has inspected the public records of the various City Departments having cognizance and control of pipes, conduits, and other subsurface structures. and of The City's water pipes, conduits and sewers, and he has  
20 deemed proper to determine the correctness of the information so obtained; and he clearly understands that The City does not insure the accuracy of such reports or information, and agrees that he will not make any claim against The City for damages or extra work caused or occasioned by his relying upon such records, reports or information furnished by any City Department or any companies, either as a whole or in part.

Protection and restoration of pipes, etc., of private companies.

30 XXXIII. The Contractor agrees to confer with and to make to or entertain an offer from such private companies as own the said pipes, conduits, tracks or structures, except such railroad companies whose tracks or other railroad structures are upon or within a right of way owned by said companies (see Section XXXIV); and the Contractor further agrees to enter into an agreement with said companies by what terms and at what prices the support, protection, removal and reconstruction of the pipes, conduits, tracks and structures will be undertaken  
40 and accomplished, and in the event of the failure to make such an agreement with said companies, he will not complain nor make any demand on The City for additional compensation or pay for supporting, protecting, removing or restoring the said pipes, conduits, tracks or other structures.

EXHIBIT C-14 (*continued*):

Agreement between City and railroad company, etc.

10 XXXIV. If for the purpose of performing the work required by this contract The City has entered into an agreement with any railroad company owning a right of way, or with the owners of any property through or across which the work, or any part thereof, is to be constructed, the Contractor agrees to carry on such work or such part thereof as directed in accordance with the terms of such agreement, a copy whereof is hereto annexed and is hereby agreed upon as forming part of this contract.

Contractor to notify Department Water Supply,  
Gas and Electricity.

20 XXXV. At least twenty-four hours before breaking ground, for the purpose of constructing the work of this contract, the Contractor agrees to give notice thereof in writing to the Department of Water Supply, Gas and Electricity.

City's water pipes, etc.

30 XXXVI. If upon excavating it shall be found that any existing water pipes or appurtenances owned or controlled or operated by The City follow the lines, or occupy the place, of the sewer or sewers and appurtenances to be laid or built as shown on the plan, such existing water pipes and appurtenances will be removed and relaid, or rebuilt, by and at the cost of the Department of Water Supply, Gas and Electricity of The City of New York; if, however, in order to facilitate the work to be done under this contract, it be found desirable to temporarily remove any water pipes or appurtenances owned or controlled or operated by The City, the removal and replacing in their original positions of such water pipes and appurtenances will be done by the Department of Water Supply, Gas and Electricity for the Contractor at his cost and expense.

Protection of City's water pipes, etc.

40 XXXVII. The Contractor agrees to protect all water mains and service water pipes owned, controlled or operated by The City which may be affected in any manner by the work done under this contract, except as hereinbefore provided, and to protect all such water and service pipes from freezing, and if he fails to do so, the Commissioner of Water Supply, Gas and Electricity is hereby authorized to protect such main and service pipes, or in the event of their having suffered injury to replace such pipes.

EXHIBIT C-14 (*continued*):

and recalk and repair the same immediately, as the work progresses, and the cost thereof shall be charged to the Contractor; the cost so charged shall be deducted from any sum or sums due or to become due to the Contractor under this contract, and in case such sum or sums shall be insufficient to cover such cost, the Contractor will be liable for the balance.

10 Protection of gas and water mains and pipes, etc.

20 XXXVIII. The Contractor agrees to sustain in their places and protect from injury all water or gas mains, conduits, subways or service pipes, steam pipes and pneumatic pipes, and all sidewalks, curbs, stoops, areas, and all other property in the vicinity of his work, from direct or indirect injury by caving or otherwise, and he hereby assumes all expenses for direct or indirect damage which may be occasioned by injury to any of them, and he agrees to have at all times a sufficient quantity of timber and other necessary materials and appliances on the ground, and will use the same, as required, for bracing and sheeting the sides and ends of excavations, and for sustaining and supporting any and all pipes, conduits, subways, lamp-posts and lamps or other structures that are undermined, weakened, endangered or threatened; and in case any damage or injury shall or may result to said pipes, conduits, subways, lamp-posts and lamps and other works or structures of any gas, electric, railroad or other company whatsoever, or to any private property, through or by reason of any negligence, wilfulness, carelessness or want of skill on the part of the Contractor, his agents or servants, the Contractor hereby agrees to pay such amount as may be sufficient to cover the expense and damages occasioned by such negligence, wilfulness, carelessness or unskillfulness, and that such amount shall be charged against him; and the President is hereby authorized to deduct and retain from any moneys which may be due, or which shall become due, under this Contract, a sum sufficient, in his judgment, to cover the cost of making good any such damages. expense or loss, and to apply said sum so deducted and retained to the requisite repairs or renewals, or to reimburse the parties damaged or injured.

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Old water and gas pipes.

XXXIX. All iron, water and gas pipes which it becomes necessary to remove shall be considered the property of The City and will be piled by the Contractor in such part or parts of the streets as may be directed, unless notice to the contrary is given

EXHIBIT C-14 (*continued*):

him in writing, in which case he will remove the same at his own expense.

Change of grade.

10 XL. In case the grade of the street shall be changed during the progress of the work, the Contractor will conform to the altered grade at the contract prices, as far as they are applicable; and for any work for which there is no contract price, the provisions in relation to work not provided for in this contract shall apply.

Measurement of work and material.

20 XLI. All quantities of work and materials to be paid for will be measured and determined, according to the plan and the working lines that may be given, and the specifications, when the work conforms thereto. No allowance will be made on any part of the work for any excess above the quantities required by such plan, lines and specifications. Should the dimensions of any part of the work, or of the materials, be less than those required by the plan, the actual quantities only will be allowed in measurement.

Payment on acceptance of work.

30 XLII. The Contractor will not be entitled to demand or receive payment for any portion of the work or materials unless the same has been fully completed in the manner set forth in this contract, and such completion duly certified by the Engineer in Charge of Sewers, and until each and every one of the stipulations hereinbefore mentioned is complied with, and the work completed to the satisfaction of the President and accepted by him, and the final certificate of completion and acceptance thereof, signed by the President and said Engineer, filed with the Comptroller. The City will pay to the Contractor on or before the expiration of thirty days from the filing of said final certificate of completion and acceptance in the office of the Comptroller, the whole of the moneys accruing to the Contractor, under this contract, except 40 such sum or sums of money as shall be retained under any of the provisions herein contained for that purpose, or in any law of the State, or under any ordinance of The City passed prior to the date of this contract and now in force.



EXHIBIT C-14 (*continued*):

Moneys to be retained for repairs to unpaved streets.

10 It is hereby further agreed that The City shall be and is hereby authorized to retain out of the moneys payable to the Contractor, during a period of six months from the date of the final completion and the acceptance by the President of the work done under this contract the sum of \$0 06/100 for each linear foot of sewer, basin connection, and house connection constructed under this contract within unpaved streets, and the sum of \$0 65/100 for each linear foot constructed within streets repaired by the Contractor. And should the Contractor fail to make such repairs to the street surface as may become necessary by reason of the work done under this contract within two days of the date of service of notice upon him so to do, then the President may expend such sum or any part thereof in making such repairs.

Payment of retained moneys to be made after six months.

20 It is hereby further agreed that The City, upon the expiration of the said period of six months, will pay to the said party of the second part the whole or such part of the moneys retained as may remain after the expenses of making said repairs, in the manner aforesaid, shall have been paid therefrom.

Termination of six months' period.

30 It is hereby further agreed that if the termination of the said period of six months after the completion and acceptance of the work done under this contract shall fall within the months of December, January, February or March, then and in that case the said months of December, January, February and March, or such part thereof as the President may determine, will not be included in the computation of said period of six months.

Final certificate to control.

40 XLIII. The action of the Engineer in Charge of Sewers, by which the Contractor is to be bound and concluded according to the terms of this Contract shall be that evidenced by said Engineer's final certificate, all prior certificates upon which eighty-five per centum (85%) payments may have been made being merely estimates, and subject to the corrections of such final certificate, which may be made without notice to the Contractor thereof, or of the measurements upon which the same is based.

EXHIBIT C-14 (*continued*):

85% payments.

10 XLIV. In case the amount of this contract, based on the  
Engineer's estimate and the contract prices, shall be five thou-  
sand dollars (\$5,000.00) or over, payment will be made to the Con-  
tractor by monthly installments of eighty-five Per Cent. (85%)  
of the estimated value of the work performed, provided the work  
is being prosecuted in conformity with the provisions of the con-  
tract, and in a manner satisfactory to the Engineer, in which case,  
however, the quantity returned shall be such that the amount paid  
will be fairly due and in accordance with the provisions and  
stipulations of this contract; provided, the amount of work done  
on each installment shall not be less than fifteen hundred dollars  
(\$1,500.00); and provided that The City may at all times reserve  
and retain out of said installments, or any of them, all such sum  
or sums as by the terms hereof or any act of the Legislature of the  
20 State of New York, or of any ordinance of The City of New York,  
now in force, it is or may be authorized to reserve or retain; and  
provided that where the Contractor, although the lowest bidder  
in the gross calculation, is to receive unusual or extraordinary  
prices for any of the different items of the work when considered  
separately, nothing herein contained shall be construed to affect  
the right of the President to determine the amount that may be  
due from time to time, not necessarily by the prices agreed upon  
in this contract, but by causing an estimate to be made of the  
value of the work done, taking as a basis of the calculations the  
whole amount of money that will have become due, according to  
30 the terms of this contract, when the whole work shall be com-  
pleted.

If abandoned, etc.

Contract may be declared abandoned.

Completion of work to be undertaken by President.

40 XLV. The Contractor hereby agrees that if the work to  
be done under this contract shall be abandoned by him, or if this  
contract shall be assigned or the work sublet by him otherwise  
than as provided by the terms hereof, or if at any time the En-  
gineer shall be of the opinion, and shall so certify, in writing, to  
the President that the performance of the contract is unneces-  
sarily or unreasonably delayed, as evidenced by its actual rate  
of progress compared with the required progress (See Section  
XIV); or that the Contractor is wilfully violating any of the

EXHIBIT C-14 (*continued*):

conditions or covenants of this contract or the specifications thereof, or is executing the same in bad faith, or not in accordance with the terms thereof, or that the work is not fully completed within the time designated in this contract for its completion, the President may declare this contract or any part thereof abandoned and notify the Contractor to discontinue all work or any part thereof under this contract, by a written notice to be served upon the Contractor either personally, or by leaving said notice at his residence, or with his agent in charge of the work, or in the manner provided in Section XLVI., or with any employee found on the work, and the Contractor agrees to thereupon discontinue said work or such part thereof, and he further agrees that the President shall thereupon have the power to contract for the completion of the contract in the manner prescribed by law, or to place such and so many persons as he may deem advisable, by contract or otherwise, to work at and complete the work declared abandoned, and to use such materials as he may find upon the line of the work, and to procure other materials for the completion of the same, and to charge the expense of said labor and materials to the Contractor; and it is further agreed that the expense so charged shall be deducted and paid by The City out of such moneys as may be due or may at any time thereafter become due to the Contractor under and by virtue of this contract, or any part thereof. And in case such expense shall exceed the amount which would have been payable under the contract if the same had been completed by the Contractor, he shall and will pay the amount of such excess to The City. Should the Contractor fail to complete the work as stipulated herein, or should the contract be declared abandoned, he agrees to forfeit all money earned, but unpaid whether certified or not at the time of the abandonment of the contract. In case such expense shall be less than the sum which would have been payable under the Contract if the same had been completed by the Contractor, he agrees to forfeit all claim to the remainder; and when any particular part of the work is being carried on by the President, by contract or otherwise, under the provisions of this clause of the contract, the Contractor agrees to continue the remainder of the work in conformity with the terms of this contract and in such manner as in nowise to hinder or interfere with the persons or workmen employed, as above provided, by the President, by contract or otherwise, to do any part of the work, or to complete the same under the provisions of this section of the contract.

EXHIBIT C-14 (*continued*):

Notice to Contractor.

10 XLVI. It is agreed that the residence or place of business, given in the bid upon which this contract is founded, is hereby designated as the place where all notices, letters and other communications shall be served, mailed or delivered. It is further agreed that any notice, letter or other communication addressed to the Contractor and delivered at the above-named place, or deposited in a post-paid wrapper in any post-office box regularly maintained by the post-office, shall be deemed sufficient service thereof upon the Contractor. It is also further agreed that the place named may be changed at any time by an instrument in writing, executed and acknowledged by the Contractor and delivered to the President. It is also further agreed that nothing herein contained shall be deemed to preclude or render inoperative the service of any notice, letter or other communication upon the Contractor personally.

20 Labor law.

30 XLVII. The Contractor agrees that he will comply with the provisions of "The Labor Law." He further agrees that no laborer, workman or mechanic in the employ of the Contractor, sub-contractor or other person doing or contracting to do the whole or a part of the work contemplated by the contract, shall be permitted or required to work more than eight hours in any one calendar day, except in cases of extraordinary emergency, caused by fire, flood or danger to life or property; that the wages to be paid for a legal day's work to all classes of such laborers, workmen or mechanics upon public work or upon any material to be used thereupon shall not be less than the prevailing rate for a day's work in the same trade or occupation in the locality where such public work is being constructed. Each such laborer, workman or mechanic shall receive the prevailing rate of wages. This contract shall be void and of no effect, unless the person or corporation, making or performing the same shall comply with the provisions of section 14 of the Labor Law.

40 No estoppel.

XLVIII. The City shall not, nor shall any Department or officer thereof be precluded or estopped by any return or certificate made or given by the President, any Engineer or other officer, agent or appointee of The City under any provision of this contract from at any time (either before or after the final completion and acceptance of the work and payment therefor pur-

EXHIBIT C-14 (*continued*):

10 suant to any such return or certificate) showing the true and correct amount, quality and character of the work done and materials furnished by the Contractor, or any other person under this contract, or from showing at any time that any such return or certificate is untrue and incorrect or improperly made in any particular, or that the work and materials, or any part thereof do not in fact conform to the contract; and The City shall not be precluded or estopped, notwithstanding any such return or certificate or payment in accordance therewith, from demanding and recovering from the Contractor such damages as it may sustain by reason of his failure to comply with the contract.

Understanding of plans and specifications.

20 XLIX. The Contractor hereby distinctly and expressly declares and acknowledges that, before the signing of this contract, he has carefully read the same, and the whole thereof, together with and in connection with the plan and specifications, and that he has made such examination of this contract and of said plan and specifications, and the location where said work is to be done, and such investigation of the work required to be done, and in regard to the material required to be furnished, as to enable him to thoroughly understand the intention of the same, and the requirements, covenants, agreements, stipulations and restrictions contained in this contract and in said plan and specifications; and distinctly agrees that he will not hereafter make any claim or demand upon The City, based upon or arising out of any alleged misunderstanding or misconception on his part of the said requirements, covenants, stipulations and restrictions: and that any information given to the Contractor by the Engineer or others as to the quantities in the work, prior to, or during the progress of the work, shall have no bearing or effect whatsoever, upon the total amount of work to be paid for, in the final settlement.

30 Chap. 478, Laws 1916.

40 This contract shall be void and of no effect unless the person or corporation making or performing the same shall secure compensation for the benefit of, and keep insured during the life of this contract, the employees engaged thereon, in compliance with the provisions of Chapter 41 of the laws of 1914, known as the Workmen's Compensation Law, and acts amendatory thereof.

EXHIBIT C-14 (continued) :

Substitution of sureties.

L. Should the Comptroller at any time deem the sureties under the contract to be unsatisfactory he shall notify the Contractor to that effect and the Contractor shall when so notified forthwith submit in substitution new sureties acceptable to the Comptroller. No further payment shall be deemed due or shall  
10 be made until the new sureties shall qualify and be accepted by the Comptroller.

IN WITNESS WHEREOF, The President of the Borough of Queens has hereunto set his hand for and on behalf of The City of New York, and the Contractor has also hereunto set his or its hand the day and year herein first above written; and the President and Contractor have executed this agreement in tri-  
20 plicate; one part of which is to remain with the President, one other to be filed with the Comptroller of The City of New York, and the third to be delivered to the Contractor.

FRANK X. SULLIVAN,  
Acting President of the Borough of Queens.

JOSEPH L. SIGRETTO & CO.,  
By Joseph L. Sigretto,  
President.  
(Contractor (s)).

30 The City and State of New York, ss:  
County of Queens

On this 25th day of July, 1918, before me personally came Frank X. Sullivan to me known and known to me to be the Acting President of the Borough of Queens, of The City of New York, the person described as such in and who as such executed the foregoing instrument, and he acknowledged to me that he  
40 executed the same as said Acting President for the purposes therein mentioned.

WILLIAM P. BUCKLEY,  
Commissioner of Deeds, New York City.

EXHIBIT C-14 (*continued*):

The City and State of New York, ss:  
County of Queens

On this 12th day of July, 1918, before me personally came Joseph L. Sigretto to me known and known to me to be the President of Joseph L. Sigretto and Co. who being by me duly sworn, did depose and say for himself that he resides in Orange,  
10 N. J.; that he is the President of Joseph L. Sigretto and Co., the corporation described in and which executed the above instrument; that he knew the corporate seal of said corporation; that the seal affixed to the said instrument is such corporate seal; that it was so affixed by order of the Board of Directors of said Joseph L. Sigretto and Co., and that, by like order, he thereunto signed his name and official designation.

WILLIAM P. BUCKLEY,  
Commissioner of Deeds, New York City.

20

KNOW ALL MEN BY THESE PRESENTS, That we Joseph L. Sigretto and Co. as principal, and the National Surety Co. and London and Lancashire Surety Co. and New Amsterdam Casualty Company as surety are held and firmly bound unto The City of New York, in the sum of ONE HUNDRED THOUSAND DOLLARS, lawful money of the United States of America, to be paid unto THE CITY OF NEW YORK, or to its certain  
30 attorneys, successors or assigns; for which payment, well and truly to be made, we and each of us do bind ourselves, and our several and respective heirs, executors, administrators and assigns, jointly and severally, firmly by these presents.

Signed, sealed and dated this 12th day of July, 1918.

WHEREAS, The above bounden Joseph L. Sigretto and Co., by an instrument in writing, under their hands, and bearing even date with these presents, one part whereof is hereto annexed, have contracted with The City of New York, by the President of the Borough of Queens, to furnish all the labor and materials, and to excavate for, build, construct and in all respects complete sewer, etc. in 51st Street, from Lurting Street to Waldron Street, Second Ward, together with all the work incidental thereto, as is fully and at large set forth and described in the contract aforesaid.  
40

EXHIBIT C-14 (continued):

10 NOW, THEREFORE, The condition of the above obligation is such that if the said above bounden Joseph L. Sigretto and Co and its, his or their heirs, executors, administrators and assigns, or any or either of them, shall well and truly, and in a good, sufficient and workmanlike manner, perform or cause to be performed the said contract, and each and every of the covenants, promises, agreements and provisions therein contained on their part to be performed, and complete the same within the period therein stipulated, and in each and every respect comply with the conditions therein contained, then this obligation to be void; otherwise, to remain in full force and virtue.

Joseph L. Sigretto & Co. [L. S.]

By JOSEPH L. SIGRETTO [L.S.]  
President.

20

National Surety Company [L. S.]

By CHARLES J. KOCH, [L. S.]  
Resident Vice-President.

Attest T. J. DANAHY, [L. S.]  
Res. Asst. Secretary.

30

London & Lancashire Indemnity Company  
of America

By J. E. SWEENEY,  
Attorney-in-fact.

New Amsterdam Casualty Company,

By THOMAS R. PURDUM,  
Vice-President.

40

Attest WM. W. LABONTE,  
Assistant Secretary.

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EXHIBIT C-14 (*continued*):

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

10 On this 12th day of July, 1918, before me personally came Joseph L. Sigretto to me known and known to me to be the President of Joseph L. Sigretto and Co. who, being by me duly sworn, did depose and say for himself that he resides in City of New York; that he is the President of Joseph L. Sigretto and Co., the corporation described in, and which executed the above instrument, that he knew the corporate seal of said corporation; that the seal affixed to the said instrument is such corporate seal: that it was so affixed by order of the Board of Directors of said Joseph L. Sigretto and Co., and that by like order he thereto signed his name and official designation.

WILLIAM P. BUCKLEY,  
Commissioner of Deeds, New York City.

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FUNDS

PRESIDENT'S CERTIFICATE

30 It is hereby certified that the estimated cost of the work and materials required by the within contract is THREE HUNDRED FORTY SIX THOUSAND FOUR HUNDRED NINETY THREE DOLLARS (\$346,493.00) and is chargeable to the Street Improvement Fund of The City of New York.

FRANK X. SULLIVAN,  
Acting President of the Borough of Queens.

The City of New York, July 25th, 1918.

40

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EXHIBIT C-14 (continued):

SPECIFICATIONS

TRENCHES

Length of trench.

10

1. Unless otherwise directed or permitted not more than 200 feet of any trench in advance of the end of the built sewer shall be open at any time, and unless written permission to the contrary is given, the trench shall be excavated to its full depth for a distance of at least 20 feet more than the minimum length of sewer permitted to be laid in it. (See paragraphs 159 and 182.) Trenches for house connection drains shall not be open on both sides of the street at the same time, unless permission has previously been given to close the street. Unless otherwise directed each trench for basin connections and house connection drains shall be fully excavated for its entire length before any pipes are laid therein.

20

Sheeting and bracing.

2. Where necessary the sides of the trenches and excavations shall be supported by adequate sheeting and bracing. Steel sheeting may be used only where shown on the plan or directed. Sheeting and bracing will be paid for only when left in place by written order, in which event the amount left in place will be paid for at the contract price for such material. Unless specially permitted sheeting against which concrete is placed shall not be removed and will not be paid for. The Contractor will be held accountable and responsible for the sufficiency of all sheeting and bracing used, and for all damage to persons or property resulting from the improper quality, strength, placing, maintaining or removing of the same.

30

Sheeting in soft material.

40

3. Where the material to be excavated is of such a character as to render it necessary, the sheeting shall be closely driven and to such depth below the bottom of the sewer as may be directed.

EXHIBIT C-14 (*continued*):

Tunneling.

4. All work shall be done in open trenches or excavations; no tunneling shall be done except with the consent of the Engineer.

Trees and stumps.

10 5. The Contractor shall grub and clear the surface over the trenches and excavations of all trees and stumps and remove the same from the work.

Material to be disinfected.

6. If required, any or all of the excavated material shall be satisfactorily disinfected or deodorized or immediately removed from the work.

Roadway, sidewalks, etc., to be kept clear.

20 7. The excavated material and materials of construction shall be so deposited, and the work shall be so conducted as to leave open and free for traffic all crosswalks, a space on each sidewalk not less than one-third the width of such sidewalk and unless permission is given to the contrary a roadway not less than 8 feet wide for the free passage of vehicles. Street hydrants, water gates, fire alarm boxes and letter boxes shall be kept accessible for use. During the progress of the work the Contractor shall maintain such crosswalks, sidewalks and roadways in satisfactory condition, and the work shall at all times be so conducted  
30 as to cause a minimum of inconvenience to public travel, and permit of safe and convenient access to private and public property along the line of the work.

Surplus material.

40 8. If all of the excavated material cannot be stored on the street in such a manner as to maintain the traffic conditions hereinbefore specified, the surplus shall be removed from the work and stored. After the construction of the sewer, so much of this material as is of satisfactory quality and necessary for the purpose shall be brought back and used for backfilling the trench.

Fence.

10. Where necessary a suitable fence shall be placed along the sides of the trench to keep the street safe for traffic.

EXHIBIT C-14 (*continued*):

Temporary bridges.

11. Where any crosswalk is intersected by the trench, it shall be temporarily replaced by a substantial timber bridge not less than 3 feet wide, with side railings. Where required, suitable temporary bridges for vehicles shall be provided and maintained across the trench.

10 Disposal of water from trenches.

12. The Contractor shall at all times during the progress of the work keep the trenches and excavations free from water. The water from the trenches and excavations shall be disposed of in such a manner as will not cause injury to the public health, nor to public or private property, nor to the work completed or in progress, nor to the surface of the streets, nor cause any interference with the use of the same by the public.

20 Cost to be covered.

13. The cost of all labor required to be done and all materials required to be furnished in the performance of all the work specified in paragraphs 1 to 12 inclusive, except as otherwise provided, shall be covered by all the contract prices for all the items for which there are contract prices.

EARTH EXCAVATION.

30 14. Earth excavation shall include the removal of all material other than rock as hereinafter defined.

Width of trench for sewers, etc.

40 15. The minimum widths of trenches in earth, for pipe sewers, basin connections, house connection and other drains not over 18 inches in diameter, shall be such as to give a clearance inside the sheeting of 8 inches on each side of the pipe, and for those of larger diameters 10 inches on each side of the pipe, exclusive of spurs and hubs; and all such trenches shall have a clear width equal to the maximum width of the cradles of the sewers to be laid in them, when such cradles are wider than the minimum widths herein specified. The minimum widths of trenches in earth, inside the sheeting, for other sewers shall be the greatest external width of the structures, including the necessary forms, to be built therein.

EXHIBIT C-14 (*continued*):

16. Where a riser, manhole or other appurtenance or the foundation therefor extends beyond the exterior lines of the sewer or its foundation, the minimum excavation in earth, required for the same shall be that contained in a prism with vertical sides and a horizontal section equal to the smallest rectangle which will enclose such appurtenance and its foundation.

10 Excavation for basin manholes and inlets.

17. The minimum dimensions of the excavation in earth, brick basin manholes and inlets, shall be such as to give a clearance inside the sheeting of 1 foot on all sides, above the foundation, but in all such cases the excavation shall be large enough to include the foundations for such structures shown on the plan. The excavation for concrete basin manholes and inlets shall be of such dimensions as to permit the proper placing and removal of the necessary forms.

20 Depth of trenches.

18. The trenches shall be excavated to the depths required for the foundations of the sewers and appurtenances shown on the plan, and where the conditions are such as to make it necessary, to such additional depths as may be directed. Where pipe is laid without a cradle the bottom of the trenches shall be excavated to fit the lower third of the pipe, and excavations shall be made to receive the hubs. All irregularities in the bottoms of the trenches shall be filled up to the required grade with suitable material.

30

Cost to be covered.

19. The cost of all labor required to be done and all materials required to be furnished in the performance of all the work specified in paragraphs 15 to 18 inclusive, except as otherwise provided, shall be covered by all the contract prices for all the items for which there are contract prices.

40

ROCK EXCAVATION.

20. Rock excavation shall include the excavation and removal of the following materials:

(a) Rock which shall be determined to be of such a character as to warrant its removal by blasting, in order to insure the prompt and proper prosecution of the work.

EXHIBIT C-14 (*continued*) :

(b) Boulders and pieces of rock, masonry in mortar and concrete, each of which contains 1 cubic yard or more, except the masonry and concrete of old sewers and their appurtenances.

(c) All foundation walls and cellar floors encountered in the line of the work shall be classed as rock excavation.

10 21. Pieces of rock, masonry, concrete or boulders, which fall or slide into the trench from beyond the lines thereof, as herein defined, will not be measured, and the cost of the removal of the same shall be covered by all the contract prices for all the items for which there are contract prices.

Width of trench.

Rock excavation for basin manholes and inlets.

20 22. The required width of trench in rock for pipe sewers, basin connections, house connection and other pipe drains will be such as to give a clearance of 1 foot on each side of the pipe, exclusive of spurs and hubs; the required width of trench in rock, for other sewers and drains, will be such as to give a clearance of 1 foot on each side of the structure to be built therein at its greatest external width. Where a riser, manhole or other appurtenance, or the foundation therefor, extends beyond the exterior lines of the sewer or its foundation, the excavation in rock required for the same will be that contained in a prism with vertical sides and a horizontal section 1 foot wider on each side  
30 than the smallest rectangle which will enclose such appurtenance and its foundation. The required dimensions of the excavation in rock, for basin manholes and inlets will be such as to give a clearance of 1 foot on all sides above their foundation.

Depth of trench.

23. The rock shall be excavated to the depths required for the foundations of the structures as shown on the plan.

Measurement.

40 24. The volume of rock to be paid for will be that contained in prisms with vertical sides and of such dimensions as to give the widths and clearances hereinbefore specified from the bottoms of the trenches, as specified, to the surface of the rock.

EXHIBIT C-14 (*continued*):

Rock stripped.

25. Rock shall be stripped in sections, which, unless otherwise permitted, shall not be less than 50 feet in length, and the Engineer shall then be notified in order that he may measure the same. Rock excavated or blasted before such measurement is made will not be paid for.

10 Excavation for branches.

26. Wherever a branch for a proposed sewer or extension of a sewer is built in rock, the required trench shall be excavated for a distance of not less than 5 feet beyond the end of such branch, in the direction of the proposed sewer or extension.

Blasting.

20 27. All blasting operations shall be conducted in strict accordance with the City ordinances and regulations relative to rock blasting and the storage and use of explosives. Any rock excavation within 5 feet of water main less than 36 inches in diameter, and within 10 feet of a water main 36 inches or more in diameter, shall be done with very light charges of explosive, or if directed, without blasting, and the utmost care shall be used to avoid breaking or disturbing the main.

Exposed structures to be protected.

30 28. All exposed sewers, manholes basins and other structures shall be carefully protected from the effects of blasts. Any damage done to such structures shall be promptly repaired by the Contractor at his own expense.

Prices to cover.

29. The contract price for rock excavation shall cover the cost of all labor and materials required to excavate and remove all rock as specified, and without regard to its subsequent use.

BACKFILLING.

40 Backfilling around sewers, etc.

30. Unless otherwise specified or directed, all trenches and excavations shall be backfilled immediately after the structures are built therein. For a depth of at least 2 feet over the top of the sewer, basin connection, house connection or other drain,

EXHIBIT C-14 (*continued*):

the material for backfilling trenches as excavated, shall be clean earth, sand or rock dust. It shall be carefully deposited in uniform layers not exceeding 6 inches in depth, and unless otherwise permitted, each layer shall be carefully and solidly tamped with appropriate tools in such a manner as to avoid injuring or disturbing the completed work.

10 Backfilling for remainder of trench.

31. Backfilling for the remainder of the trenches as excavated, shall be proved material free from organic matter and containing no stone over 10 inches in their largest dimensions. Any stones shall be so distributed through the mass that all interstices are filled with the fine material. This backfilling shall be deposited as directed, and unless otherwise permitted, shall be spread in layers and solidly tamped.

20 Backfilling around manholes, basin manholes and inlets.

32. Backfilling within 2 feet of manholes, house connection drains, basin manholes, inlets and other structures shall be of the same quality as that specified in paragraph 30. It shall be uniformly deposited on all sides and unless otherwise permitted, solidly tamped in such a manner as to avoid injuring the structures or producing unequal pressures thereon.

Puddling.

30 33. Backfilling shall, if required, be flooded or puddled with water as the work progresses, instead of being tamped.

34. When sheeting is drawn, all cavities remaining in or adjoining the trench shall be solidly filled. When sheeting is left in place all cavities behind such sheeting shall be solidly filled as directed.

Deficiency of filling.

40 35. Unless otherwise shown on the plan, the trenches shall be backfilled to the height of the surface of the ground as it existed at the commencement of the work. Should there be a deficiency of proper material for the purpose, the Contractor shall furnish and place such additional material as may be required.



EXHIBIT C-14 (*continued*):

Temporary bulkheads.

36. For retaining the backfilling only temporary bulkheads will be allowed over sewers, basin connections and drains. Such bulkheads shall not be of stone, and they shall be removed as the trenches are backfilled.

10 Curves, branches, etc., not to be covered.

37. Basin connections, house and sewer connections and intersections, ends of sewers and branches shall not be covered until the Engineer shall have inspected, measured and located the same, and given permission to backfill the trenches over them.

Removal of surplus material.

20 38. As the trenches are backfilled, the Contractor shall remove all surplus material and regrade and leave free, clear and in good order all roadways and sidewalks. During the progress of and until the final acceptance of the work, he shall maintain in good and safe condition the surface of the street over all the trenches, and promptly fill all depressions over and adjoining the trenches caused by settlement of the backfilling. In case of failure or neglect on the part of the Contractor to comply with the requirements of this paragraph within 24 hours after the service upon him of a written notice so to do, the President may furnish all materials and do all work required, and the cost thereof will be charged to the Contractor and deducted from any 30 moneys due or to become due him under this contract. All surplus material or any part thereof shall, if required, be deposited as directed on the streets and avenues within the limits of this contract where the same are below grade, and in such a manner as to leave the surfaces of the filled material even.

Cost covered.

40 39. The cost of all labor required to be done and all materials required to be furnished in the performance of all the work specified in paragraphs 30 to 38 inclusive, shall be covered by all the contract prices for all the items for which there are contract prices.

CEMENT.

40. All cement used in the work shall be a high grade Portland cement of a well-established and approved brand. It shall be the product obtained by finely pulverizing clinker pro-

EXHIBIT C-14 (*continued*):

duced by calcining to incipient fusion, an intimate mixture of properly proportioned argillaceous and calcareous substances, with only such additions subsequent to calcining as may be necessary to control certain properties. Such additions shall not exceed 3 per cent. by weight, of the calcined product.

Specific gravity; weight.

- 10 41. The cement shall have a specific gravity of not less than 3.10 after being thoroughly dried at 212° F. It shall weigh not less than 380 pounds net, to the barrel, 4 bags of 95 pounds each being considered equivalent to a barrel.

Fineness.

- 20 42. The cement shall be dry, finely ground, of uniform color and free for lumps. It shall leave a residue of not more than 8 per cent. by weight, when passed through a No. 100 sieve, and not more than 25 per cent. when passed through a No. 200 sieve.

Tensile strength.

43. Standard briquettes shall develop within the periods specified, tensile strength not less than that shown in the following table.

Neat Cement:

- 30 24 hours ..... 175 pounds per-sq. in.  
7 days (1 day in moist air, 6 days in water) ..... 500 pounds per sq. in.  
28 days (1 day in moist air, 27 days in water) ..... 600 pounds per sq. in.

Mortar consisting of 1 part cement and 3 parts of Standard Ottawa Sand, by weight:

- 40 7 days (1 day in moist air, 6 days in water) ..... 180 pounds per sq. in.  
28 days (1 day in moist air, 27 days in water) ..... 225 pounds per sq. in.

The average of the tensile strengths developed at each age by the briquettes in any set made from one sample will be considered the strength of the sample at that age, excluding any results that are manifestly faulty. The average strength of briquettes at 28 days shall be greater than the average strength at 7 days, and if

EXHIBIT C-14 (*continued*):

tests are made after 28 days the strength shall be not less than that at 28 days.

Soundness.

- 10 44. Pats of neat cement when tested for constancy of volume or soundness shall remain firm and hard and show no sign of checking, cracking, distortion or desintegration.

Setting.

45. Unless otherwise required, the cement shall not develop initial set in less than 30 minutes, and shall develop final set in not less than 1 hour nor more than 10 hours. Quick-setting cement of an approved brand shall, if required, be kept on the work in sufficient quantity to provide for any contingency requiring the use of the same.

- 20 Testing.

46. The cement will be subjected to such tests as the Engineer may deem necessary, and such tests will be made in accordance with the methods recommended by the Committee on Uniform Tests of Cement of the American Society of Civil Engineers, except that the time of setting will usually be determined by means of the Gilmore needles. In case of dispute as to the time of setting, this test will be made by means of the Vicat needle.

- 30 Retesting.

47. Any cement which shall have been kept in storage after testing for a sufficient time to warrant it, shall be retested. Any prior acceptance shall be considered void and the acceptance or rejection of the cement shall depend upon the results of the latest tests.

Approval of brand may be rescinded.

- 40 48. The Engineer may at any time rescind the approval of any brand of cement that develops objectionable qualities.

Samples.

49. The Contractor shall notify the Engineer of the arrival of cement on the work, and furnish such facilities as may be required for obtaining samples for testing. Samples will be taken so as to fairly represent the material. The number of pack-

EXHIBIT C-14 (*continued*) :

ages sampled and the quantity to be taken from each will depend upon the importance of the work and the number of tests to be made.

Delivery and storing.

- 10 50. Cement shall be delivered on the work in barrels or approved bags of uniform size, with the brand and the name of the manufacturer plainly marked thereon; it shall be immediately stored in a dry place and carefully protected from the weather. A sufficient stock of cement shall be kept on the work in advance of the necessity for its use to permit of the making of the required seven day tests. Except by written permission, no cement shall be used before it has been tested and accepted, and any concrete or masonry which may have been made under such permission with cement that is subsequently rejected, shall be removed and replaced by the Contractor, at his own expense, with  
20 concrete or masonry made of accepted cement.

Cost to be covered.

51. The cost of furnishing, storing and incorporating cement in the work, and the cost of samples required for testing, shall be covered by the contract prices for the structures or classes of work in connection with which the cement is used.

MORTAR.

- 30 52. All mortar used in the work, unless otherwise specified, shall be composed of 1 volume of cement, as in the original package, and  $2\frac{1}{2}$  volumes of sand. Where required, mortar of cement and sand in other proportions or mortar of neat cement shall be used as directed.

Sand.

- 40 53. Sand shall be composed of grains of clean, sharp quartz, not softer than hard limestone. It shall be moderately coarse and preferably made up of grains of varying size not exceeding one-quarter ( $\frac{1}{4}$ ) inch producing a mass with low percentage of voids. It shall not contain, in all, more than five (5%) per cent, by volume of clay, loam, mica, scales, silt, or other objectionable inorganic matter, nor more than one (1) per cent. of organic matter.

EXHIBIT C-14 (*continued*):

Tests may also be made of the cement and sand used in the proportions of one (1) part cement to three (3) parts sand, and these tests must show at least 70 per cent. of the strength of the mortar made with the cement and standard sand, or the sand may be rejected.

Mixing.

- 10        54. Mortar shall be mixed in a suitable box or on a tight platform, and never upon the pavement or ground. The cement and sand shall be thoroughly mixed dry, until the mixture has a uniform color. Clean, fresh water shall then be added and the mass worked until a mortar, which is uniform and of the required consistency is produced. The mortar shall be mixed in no greater quantity than is required for the work in hand, and any that has set sufficiently to require retempering shall not be used.

Freezing weather.

- 20        55. The mixing and use of mortar in freezing weather shall be subject to the same requirements as hereinafter specified for mixing and placing concrete under similar conditions.

Cost covered.

- 30        56. The cost of all labor and materials required to furnish and place the mortar in the work, as specified, shall be covered by the contract price for the structure or class of work in connection with which the mortar is used.

CONCRETE.

Class A concrete.

57. Class A concrete shall be made of 1 part of cement, 2 parts of sand and 4 parts of broken stone or gravel.

- 40        58. Broken stone for Class A concrete shall be approved trap rock, dense fine-grained blue limestone or granite broken into roughly cubical or pyramidal fragments. Broken stone which contains dust, loam, clay, organic matter or other improper substances shall not be used. Broken stone for Class A concrete shall be the run of the crusher that will pass through a screen with circular openings  $1\frac{1}{4}$  inches in diameter and shall be retained on a screen with openings  $\frac{1}{8}$ -inch in diameter. Gravel shall be equal in quantity to North Shore Long Island gravel,

EXHIBIT C-14 (*continued*):

shall be clean and sound, and shall be of the sizes herein specified for broken stone.

Measuring ingredients.

67. For the purpose of determining the proportions of the materials for concrete, each bag of cement will be considered as containing 9/10 cubic foot, and the other ingredients shall be measured by an approved method.

Water.

68. Only clean fresh water shall be used for concrete.

Mixing.

69. Unless permitted to be mixed by hand, concrete shall be mixed in approved mechanical batch mixers, so constructed and operated that the ingredients of the concrete may be accurately measured and thoroughly mixed. Enough water shall be added during the mixing to bring the concrete to the required consistency, which generally shall be such that the concrete may be poured into place without causing the separation of the stones from the mortar. When concrete is mixed by hand the broken stone or gravel shall be spread on a tight platform in a bed about 4 inches deep and shall be thoroughly wetted. The cement and sand shall be mixed dry on a suitable platform, until the mixture has a uniform color. This mixture shall be spread evenly on the bed of wet stone, water added, and the entire mass turned until each piece of stone is entirely coated with mortar and a concrete produced which is uniform and of the consistency herein specified for machine mixed concrete. When a comparatively dry concrete is required it shall be mixed to such consistency as may be directed.

Placing concrete.

70. Concrete shall be mixed only in such quantity as is required for the work in hand, and any that has set sufficiently to require retempering shall not be used. Any concrete in which the water has separated from the solid matter shall be satisfactorily remixed before being placed. The concrete shall be so deposited in the work as to prevent the separation of the stone from the mortar. It shall be deposited in as nearly a continuous operation as practicable and shall be tamped or spaded with suitable tools to expel air bubbles and produce a dense and compact mass. When the operation of placing concrete is interrupted

EXHIBIT C-14 (*continued*):

the concrete in the work, shall, if required, be confined by suitable temporary forms or bulkheads. When concrete is to surround reinforcing metal, structural steel, or wire netting, it shall be so deposited as to work closely around such material. When a comparatively dry concrete is used it shall be deposited in horizontal layers not exceeding 6 inches in depth and solidly tamped.

10 Joining old and new concrete.

71. When fresh concrete is to be laid on or adjoining concrete already set, the surface of the latter shall be thoroughly cleaned, washed, and roughened, and coated with a grout of neat cement before the fresh concrete is deposited.

Forms and centres.

20 72. The Contractor shall provide all necessary forms and centres for shaping concrete wherever used. They shall be true to the required shapes and sizes, strong enough and so secured in place as to withstand all operations incidental to placing the concrete, and watertight, and the faces against which the concrete is to be placed shall be satisfactorily smooth and clean. Timber used in forms and centres for exposed faces of concrete shall be seasoned stock. Unless otherwise permitted, those surfaces of forms and centres which will be in contact with concrete shall be coated as directed with an approval lubricant; when no lubricant is required such surfaces shall be thoroughly wetted  
30 just before the concrete is placed.

Removal of forms and centres.

73. The forms and centres shall be left in place until the concrete has set sufficiently to permit their removal without danger to the structure, and until so much of the backfilling or embankment as may be directed has been put in place. No forms or centres shall be struck or removed until permission to do so has been given.

40 Exposed surfaces.

74. Special care shall be used to secure a smooth and uniform finish to the surfaces of concrete which will be exposed in the completed structure. Immediately after the removal of the forms such surfaces, if uneven, shall be rubbed smooth to a uniform and satisfactory finish, all exposed edges of concrete shall be neatly rounded as directed, and if any voids, projections

EXHIBIT C-14 (*continued*):

or other imperfections be found, such defects shall at once be corrected by tooling, cutting out and filling with mortar, or otherwise, as directed.

Expansion joints.

10 75. Expansion joints shall be provided in such manner and at such places as are shown on the plan or as may be directed. All unavoidable joints shall be made as shown on the plan or as directed.

Freezing weather.

20 77. In freezing weather, until the temperature falls to 24 degrees Fahrenheit the water used for concrete shall, if directed, be heated to an approved temperature, and if directed, one per cent. by weight of salt shall be added to the water for each degree Fahrenheit that the temperature of the air is below 32 degrees Fahrenheit. The other materials for the concrete shall be heated sufficiently to remove all frost and ice. No concrete shall be laid when the temperature of the air is below 24 degrees Fahrenheit.

Protection.

30 78. Concrete shall be allowed to set for such time as may be directed before being worked or walked upon, or before filling, backfilling or other material is placed upon or against it. It shall not be flooded with water until it has sufficiently set. Concrete shall be carefully protected from injury, from freezing and from the drying effects of the sun and wind by covering it with canvas, bagging, hay or other suitable and approved materials. Such protection shall be placed as soon as the concrete is in condition to receive it, and except in freezing weather, the covering as well as the concrete shall be kept wet for such time as may be directed.

Measurement.

40 79. The amount of concrete to be paid for as such will be all concrete put in place as shown on the plan or as directed, except such concrete shown on the plan as being part of structures for which there are contract prices and the cost of which is hereinafter specified to be covered by the contract prices for such structures. No deduction will be made on account of the space occupied by spurs for house connections, reinforcing metal, structural steel or waterproofing, but deduction will be made on



EXHIBIT C-14 (*continued*):

account of space occupied by pile heads, timber, sewers, basin connections and drain pipes.

Prices to cover.

80. The contract prices for the various classes of concrete shall cover the cost of all labor and materials required to furnish, place and remove all necessary forms and centres, and to furnish, make, place, finish and protect the concrete as specified.

BRICK MASONRY.

Quality of bricks.

81. All bricks used in the work shall be sound and hard burned throughout, and of uniform size and quality. If required the bricks shall be culled immediately after they are brought on the work and all bricks which are warped, cracked or of improper quality shall be at once removed. The proportion of bats permitted will be determined according to the character and location of the work in which they are to be used. When bricks are used as the lining for inverts of sewers they shall be specially selected, and no bats shall be used except for closers.

How laid.

83. Bricks shall be satisfactorily wet when being laid and each brick shall be laid in mortar so as to form full bed, end and side joints in one operation. The joints shall be not wider than  $\frac{3}{8}$  inch, except when the bricks are laid radially, in which case the narrowest part of the joint shall not exceed  $\frac{1}{4}$  inch. The bricks shall be laid in a workmanlike manner, true to line, and wherever practicable the joint shall be carefully struck and pointed on the inside. Brickwork shall be laid with a satisfactory bond, and as it progresses shall be racked back in courses, unless otherwise permitted.

Protection.

84. All fresh brickwork shall be carefully protected from freezing and from the drying effects of the sun and wind, and if required, it shall be sprinkled with water at such intervals and for such a time as may be directed. Brickwork shall be protected from injuries of all sorts, and all portions which may become damaged or may be found defective shall be repaired, or if directed, be removed and rebuilt.

EXHIBIT C-14 (*continued*):

Freezing weather.

85. In freezing weather bricks shall be heated sufficiently to remove all ice and frost.

Price to cover.

10 86. The cost of all brick masonry shall be covered by the contract price for the structure in connection with which it is used.

STEEL REINFORCEMENT BARS.

Shape.

20 112. Steel bars for reinforcing concrete shall be of such shape as to afford an approved mechanical bond with the concrete at frequent intervals and to insure intimate contact between the steel and concrete.

Samples.

113. The Contractor shall indicate the type of bars proposed to be used, and if required shall furnish samples thereof, and he is cautioned not to place the order for the bars until the type has been approved.

Size.

30 114. Each bar shall have a net cross sectional area equivalent to that designated on the plan or required, or it shall be the commercial size of the approved type of bar having a net cross sectional area next larger than that designated or required.

Variation in weight.

40 115. Reinforcement bars will be rejected if their actual weight varies more than 5 per cent. from their theoretical weight as shown by the manufacturer's tables. For weighing reinforcement bars the Contractor shall, whenever required, provide an accurate scale of an approved type, with a capacity of not less than 500 pounds.

Quality.

116. All steel for reinforcement bars shall be made by the open hearth process and shall conform to the latest revised Standard Specifications for Steel Reinforcement Bars adopted by the American Society for Testing Materials, and such tests as

**EXHIBIT C-14 (continued) :**

may be required, shall be made in accordance therewith, and at the places hereinafter specified. The chemical and physical properties of the steel shall be as follows :

Properties Considered	Structural Steel Grade		Hard Grade*		Cold
	Plain Bars	Deformed Bars	Plain Bars	Deformed Bars	Twisted Bars
10 Phosphorus, max.					
Bessemer .....	0.10	0.10	0.10	0.10	0.10
Open Hearth .....	0.05	0.05	0.05	0.05	0.05
Ultimate Tensile Strength, pounds per sq. in. ....	55,000-70,000	55,000-70,000	80,000 min.	80,000 min.	Recorded only
Yield Point, minimum pounds per sq. in. ....	33,000	33,000	50,000	50,000	55,000
Elongation, minimum per cent. in 8 inches .....	<u>1,400,000</u>	<u>1,250,000</u>	<u>1,200,000</u>	<u>1,000,000</u>	5 per cent.
	tens. str.	tens. str.	tens. str.	tens. str.	
Cold bend without fracture:					
Bars under ¾ in. in diam. or thickness .....	180° to diam. of 1t.	180° to diam. of 1t.	180° to diam. of 3t.	180° to diam. of 4t.	180° to diam. of 2t.
Bars ¾ in. in diam. or thickness and over ...	180° to diam. of 1t.	180° to diam. of 2t.	90° to diam. of 3t.	90° to diam. of 4t.	180° to diam. of 3t.

t: Nominal thickness or diameter of bar. \* The hard grade will be used only when specified.

117. Reinforcement bars shall be rolled from billets of new steel; they shall be straight and free from seams, flaws, cracks and imperfections of all kinds.

30 119. Test pieces 18 inches long may be cut from any of the bars delivered on the work, and the failure of any test piece to meet the specified requirements, or the failure of any bar when being bent will be sufficient cause for the rejection of all steel from the melt from which the test piece or bar was made.

**Bending sheets.**

120. Bending sheets for steel reinforcement shall be furnished if required, in which case the reinforcement bars shall not be bent until such bending sheets have been approved.

40 **Delivery and protection.**

121. Bars shall be delivered in bundles, to each of which shall be securely wired a metal tag with the number of the melt from which the bars were made stamped thereon. The bars shall be protected at all times from mechanical injury and from the weather and when placed in the work they shall be free from dirt, scale-rust, paint and oil. Bars which are not to be em-

EXHIBIT C-14 (continued) :

bedded in concrete within a short time after being placed in the work shall, if directed, be immediately coated with a thin grout of equal parts of cement and sand.

Cutting and bending.

10 122. The bars shall be bent to the shapes shown on the plan and in conformity with approved templets. When bars are cut and bent on the work, the Contractor shall employ competent men and shall provide the necessary appliances for the purpose.

Placing.

123. All bars shall be as long as can be conveniently used, accurately bent, placed, spaced and jointed as shown or directed, and they shall be securely held in their required positions by approved devices until the concrete has been placed around them.

20 Joints.

30 124. Where more than one bar is necessary to complete the required length the joints shall be made by means of approved clamps which will develop the full strength of the bars or by looping the ends of the bars around each other in such a manner as to produce and maintain tension on the joint during construction or by lapping the ends of the bars, as directed, and wiring them together in an approved manner, or by lapping the ends of the bars for a distance of 30 times their nominal diameters for deformed bars, and 40 times their nominal diameters for plain bars, and with a space not less than 2 inches between them. Laps of longitudinal bars below the standard sewer sections shall be 6 inches in length unless otherwise shown on the plan or directed. Joints in longitudinal bars shall be staggered as directed.

Measurement.

40 125. The amount of steel reinforcement bars paid for as such will be the weight computed from the lengths and theoretical net sections of the steel reinforcement bars placed in the work in accordance with the plan or directions, except such steel reinforcement bars shown on the plan, as being part of structures for which there are contract prices, and the cost of which is hereinafter specified to be covered by the contract prices for such structures. The amount paid for will not include any waste metal cut from bars nor the lengths of bars used for laps, nor wires,

EXHIBIT C-14 (*continued*):

clamps and other devices used for spacing, joining and securing the bars in place, nor lugs, corrugations and irregularities which increase the weight of the bars above the weight of plain steel bars of the same net cross sectional areas, the cost of all of which shall be covered by the contract price for steel reinforcement bars. In computing the weight 1 cubic foot of steel will be considered as weighing 489.6 pounds.

10

Price to cover.

126. The contract price for steel reinforcement bars shall cover the cost of all labor and materials required to furnish, clean, cut, bend, place, join, secure and protect the same, to furnish all test pieces and samples, and to prepare and furnish prints of bending sheets, all as specified.

WROUGHT IRON.

20 Quality.

132. Wrought iron shall be double rolled, tough, fibrous and uniform in quality. It shall be thoroughly welded in rolling and be free from surface defects. It shall have an ultimate tensile strength of at least 48,000 pounds per square inch, an elongation of at least 20 per cent. in 8 inches, and a fracture wholly fibrous. Specimens shall bend cold, with the fiber, through 180 degrees around a diameter equal to the thickness of the piece tested. When nicked and bent the fracture shall be at least 90 per cent. fibrous.

30

Galvanizing painting.

133. Exposed wrought iron shall be thoroughly and uniformly galvanized.

Price to cover.

134. The cost of all wrought iron and the requirements specified in connection therewith shall be covered by the contract price for the structure in connection with which it is used.

40

IRON CASTINGS.

Quality.

136. Iron castings shall be of the best foundry pig iron, gray, tough and free from cold shuts, blow holes and other imperfections. The weight shall be conspicuously painted by the manufacturer with white oil paint on each casting. The castings

EXHIBIT C-14 (*continued*) :

shall be sound, clean and neatly finished. Where required, castings shall be thoroughly coated with coal tar pitch varnish.

Cost covered.

10 137. The cost of all labor and materials required to furnish coat and place the castings as specified, shall be covered by the contract price for the structure or class of work in connection with which they are used.

TIMBER SHEETING.

Quality, placing, etc.

20 142. Timber sheeting and the rangers and braces for the same shall be of a satisfactory quality of timber and of sufficient size and strength to adequately support the sides of the trenches and excavations. Sheeting shall be driven in such a manner as to avoid cracking and splitting, and if required for the proper prosecution of the work, shall be tongued and grooved.

When paid for.

143. Timber sheeting will be paid for as such only when left in place by written order. When sheeting is left in, so much of it below the surface of the ground as may be directed shall be cut off.

Measurement.

30 144. The amount of timber sheeting to be paid for as such will be all timber sheeting, rangers and braces left in place by written order, and will not include sheeting, dangers and braces left in place without such order, not sheeting left in place because concrete is placed against it, nor that part of the sheeting that extended above the ground after having been driven, the cost of all of which shall be covered by all the contract prices for all the items for which there are contract prices. Inclined piling or planking at the bottom of a trench, if used to prevent the caving  
40 in of the excavation and in such a position that it cannot be drawn, shall be paid for at the price bid for sheet piling.

Price to cover.

145. The contract price for timber sheeting shall cover the cost of all labor and materials required to furnish, place and cut off the sheeting, rangers and braces as specified, and shall also cover the cost of all excavation necessary to place the same

EXHIBIT C-14 (*continued*):

CONCRETE SEWERS.

Inverts.

Brick lining.

10 154. Inverts of concrete sewers shall be formed between transverse templets and shall be screeded. The templets shall be placed at such intervals as to divide the invert into sections of suitable size for convenient construction, and unless otherwise permitted, the concrete shall be deposited in alternate sections and allowed to set before the remaining sections are built. Unless otherwise shown on the plan, a layer of mortar not less than 1/2-inch thick shall be spread evenly and to a smoothly finished surface upon the concrete of the invert as soon as such concrete is in place. Where the radii of inverts are too short to permit screeding between templets, the inverts shall be shaped by means of suitable forms, which shall be removed as soon as the concrete 20 has a sufficient set, and if required, the surfaces of inverts shall be floated or troweled to a smooth finish. The concrete for inverts shall be deposited continuously for their entire cross sections and for such longitudinal distances as may be convenient. Inverts shall be carefully protected from all injury during progress of the work.

Side walls.

30 155. Concrete in the side walls of sewers shall be deposited continuously to the height directed and for such longitudinal distances as may be convenient.

Roof.

40 156. Concrete in the roofs of sewers shall be deposited continuously for the full depths and widths of the roofs and for such longitudinal distances as may be convenient. The outer surfaces of roofs shall be finished with an excess of mortar and left true and smooth. They shall be covered and protected as specified in paragraph 78, and such covering shall remain thereon until the backfilling or embankment is placed.

Bulkheads.

157. While being deposited the concrete for sewers shall be confined by temporary, vertical bulkheads placed at such intervals longitudinally as may be required for convenient working. The bulkheads shall be so designed as to give an approved shape to the end of the section of concrete under construction, shall be

EXHIBIT C-14 (*continued*):

satisfactorily secured in place before the concrete is deposited, and shall remain in place until the concrete has set sufficiently to hold its shape.

Reinforcement.

10 158. Where shown on the plan concrete sewers shall be reinforced with metal of the dimensions and shapes shown, and of the quality and in the manner hereinbefore specified.

Minimum length of invert.

159. Unless otherwise permitted or ordered, not less than 16 feet of foundation or invert for concrete sewer shall be built at one operation.

Connections.

20 160. Connections and branches for lateral sewers and receiving basins shall be built in where shown on the plan or where directed. Such connections and branches shall be closed with bulkheads of brick masonry 8 inches thick unless otherwise shown on the plan. All necessary openings and bulkheads for branch sewers shall be built in concrete sewers where shown on the plan or where directed.

Measurements.

30 161. The lengths of concrete sewers will be determined by horizontal measurements, along their centre lines. No deductions will be made on account of openings at branches and manholes. The measurement of a branch concrete sewer will be made from the inner surface of the wall of the main sewer through which it enters. A reducer will be paid for at the contract price for the sewer at the larger end thereof.

Prices to cover.

40 162. The contract prices for concrete sewers shall cover the cost of all necessary excavation (except rock); of furnishing, maintaining and removing all forms, centres, templets and temporary bulkheads; of all openings and bulkheads; of all backfilling; and of all labor and materials required to construct concrete sewers as shown by the normal sections on the plan and as specified.



EXHIBIT C-14 (*continued*):

**VITRIFIED PIPE SEWERS.**

Vitrified pipe.

10 168. Vitrified pipe sewers shall be built of shale or clay hub and spigot pipes with deep and wide sockets. They shall be thoroughly and perfectly burned, without warps, cracks or other imperfections, and shall be fully and smoothly salt-glazed over the entire inner and outer surfaces, except that the inside of the hub and the outside of the spigot may be unglazed for two-thirds the depth of the hub. On all other portions of the pipe the glazing shall completely cover and form an integral part of the pipe body. If not left unglazed the inside of the hub and the outside of the spigot shall be scored in 3 parallel lines extending completely around the circumference. When it is broken, vitrified pipe shall show dense and solid material, without serious cracks or laminations; it shall be of such toughness that it can be worked with a chisel and hammer, and when struck with a hammer, it shall have a metallic ring.

20

Identification marks.

169. Each pipe shall have clearly impressed on its outer surface the name of the manufacturer and of the factory in which it was made.

Shape and dimensions.

30 170. The sizes of the pipes are designated by their interior diameters. Each pipe shall be a cylinder with a circular section, and shall have a uniform thickness. The minimum lengths, thicknesses, depths of hubs and annular spaces for the respective sizes of pipe shall be as follows:

	Size	Length	Thickness	Depth of Socket	Annular Space
	6.....	2 feet	5/8 inch	2 1/2 inches	5/8 inch
	8.....	3 "	3/4 "	2 3/4 "	5/8 "
40	10.....	3 "	7/8 "	2 3/4 "	5/8 "
	12.....	3 "	1 "	3 "	5/8 "
	15.....	3 "	1 1/4 "	3 "	5/8 "
	18.....	3 "	1 1/2 "	3 1/4 "	5/8 "
	20.....	3 "	1 2/3 "	3 1/2 "	5/8 "
	22.....	3 "	1 5/6 "	3 3/4 "	5/8 "
	24.....	3 "	2 inches	4 "	5/8 "
	27.....	2 1/2 "	2 1/4 "	4 "	3/4 "

EXHIBIT C-14 (continued) :

30.....	2 1/2 "	2 1/2 "	4	"	3/4 "
33.....	2 1/2 "	2 5/8 "	5	"	1 1/4 "
36.....	2 1/2 "	2 3/4 "	5	"	1 1/4 "
42.....	2 1/2 "	3 1/2 "	5	"	1 1/4 "

Curves, bends, etc.

- 10        171. Where curved pipes are required they shall be furnished in either one-eighth or one-quarter bends of their respective sizes. Curved pipe, bends, siphons, and special pipe of the sizes and forms shown on the plan shall be furnished and laid, and unless otherwise provided they will be paid for at the contract prices for the corresponding sizes of vitrified pipe sewers.

Samples for testing.

- 20        172. Any or all of the following tests may be applied to samples selected from the pipe delivered on the work. For the purposes of making such tests as may be required the Contractor shall furnish and deliver when and where directed one length of pipe for each 200 feet of pipe sewer to be laid.

Crushing tests.

- 30        173. When supported at the bottom upon a knife edge one inch in width in such manner that an even bearing is provided throughout the whole length, exclusive of the bell, and pressure is applied at the crown uniformly through a similar knife edge, the various sizes of pipe shall withstand the following pressures:

	Diameter	Pressure
	6 inches .....	900 lbs. per lin. ft.
	8 " .....	900 " " " "
	10 " .....	1,000 " " " "
	12 " .....	1,050 " " " "
	15 " .....	1,250 " " " "
	18 " .....	1,400 " " " "
	20 " .....	1,550 " " " "
40	22 " .....	1,750 " " " "
	24 " .....	1,950 " " " "
	27 " .....	2,150 " " " "
	30 " .....	2,350 " " " "
	33 " .....	2,500 " " " "
	36 " .....	2,800 " " " "
	42 " .....	3,200 " " " "

EXHIBIT C-14 (*continued*):

Drop weight test.

174. When supported on a dry sand bed 2 inches deep, all pipe shall withstand without cracking the impact from 2 blows of a cast iron ball weighing 8 pounds falling 18 inches. Spurs shall resist without fracture the impact from 2 blows of such a ball falling 6 inches and striking on the extreme end of the hub of the spur.

Hydrostatic test.

175. When subjected to an internal hydrostatic pressure of 8 pounds per square inch, vitrified pipe shall show no percolation.

Absorption test.

176. After having been thoroughly dried and then immersed in water for 24 hours, sample pieces of pipe with all broken edges shall not absorb more than 4 per cent. of their weight of water.

Factory rejection.

177. The entire product of any pipe factory may be rejected when, in the judgment of the Engineer, the methods of manufacture fail to guarantee uniform results, or where the materials used are such as produce inferior pipe, as indicated by repeated failure to comply with the tests herein specified.

Without cradle.

179. When the sewer is to be laid without a cradle the trench shall be excavated as specified in paragraph 18 and the earth forming the bed carefully freed of stones. The pipe shall then be evenly bedded therein and the backfilling placed and firmly tamped in such a manner as to avoid disturbing the sewer.

How laid.

182. All pipes shall be laid with ends abutting and true to line and grade. The pipes shall be fitted together and matched so that when laid in the work they will form a sewer with a smooth and uniform invert. Unless otherwise permitted or directed, not less than 12 feet of pipe sewer shall be laid in one operation.

EXHIBIT C-14 (*continued*):

183. Unless otherwise shown on the plan, the joints of vitrified pipe sewers shall be made as hereinafter specified in paragraph 185.

Gasket and mortar joints.

10 185. Gasket and mortar joints shall be made in the following manner: A closely twisted hemp or oakum gasket of suitable diameter, in no case less than  $\frac{3}{4}$ -inch, and in one piece of sufficient length to pass around the pipe and lap at the top, shall be solidly rammed into the annular space between the pipes with a suitable calking tool. Before being placed, the gasket shall, if desired, be saturated with neat cement grout. The remainder of the space shall then be completely filled with plastic mortar mixed 1 to  $1\frac{1}{2}$ , and the joint wiped inside and finished to a smooth bevel outside.

20 Inspection of joints.

186. Unless otherwise permitted, at least 4 finished joints shall be left exposed for inspection throughout the working day, and the necessary staging for the protection of the exposed sewers and for the handling of excavated material shall be provided. A suitable ladder affording easy access for such inspection shall be furnished at every trench open for the proposed sewer.

Subgrade to be tested.

30 187. No pipe shall be laid or placed until the subgrade of the trench shall have been tested and found correct.

Sewer to be kept clean.

188. The interior of the sewer shall, as the work progresses, be cleared of all dirt, cement and superfluous materials of every description.

Backfilling.

40 189. Immediately after the sewer is laid the trench shall be backfilled as provided in paragraphs 30 to 38 inclusive and 186. No walking on or working upon the completed sewer (except as may be necessary in tamping the backfilling) will be permitted until the trench has been backfilled to a height of at least 2 feet over the top of the sewer.

EXHIBIT C-14 (*continued*):

Temporary covers.

190. The exposed ends of pipe sewers shall be provided with approved temporary covers fitted to the pipe so as to exclude earth and other materials.

Branch pipes.

- 10        191. Branch pipes and connection pipes shall be of the same quality and dimensions, and laid in the same manner as specified for vitrified pipe sewers. Dead ends of pipes shall be closed with bulkheads of brick masonry 8 inches in thickness.

Connection with existing work.

- 20        192. Wherever the proposed sewer is to connect with an existing manhole in which there is a branch pipe which is damaged or of unsuitable size or in improper position, such pipe shall be removed and be replaced with a pipe of suitable size or be reset in the proper position. The pipe so substituted or reset will be paid for at the contract price, for the corresponding size of pipe sewer.

Pipes cut to fit masonry.

193. The ends of pipes which enter masonry shall be neatly cut to fit the face of the masonry. When directed, such cutting shall be done before the pipes are built in.

- 30        Measurement.

194. The length of pipe sewers to be paid for will be determined by horizontal measurements along their center lines, and no deductions will be made on account of openings at manholes.

Prices to cover.

- 40        195. The contract prices for vitrified pipe sewers shall cover the cost of all necessary excavation (except rock); of all necessary trimmings, fitting and building into masonry; of all bulkheads; of all backfilling; of all samples furnished; and of all labor and materials required to furnish and lay the sewers complete in place, as shown on the plan and as specified.

BASIN CONNECTIONS.

206. The connections between inlets and basin manholes and between basin manholes and sewers or sewer man-

EXHIBIT C-14 (*continued*) :

holes shall be of vitrified pipe of the size shown on the standard details on file in the Engineer's Office, Bureau of Sewers. The pipes shall be of the same quality and dimensions, and laid in the same manner as hereinbefore specified for vitrified pipe sewers.

Measurement.

- 10        207. The lengths of basin connections to be paid for will be determined by measurements along their axes.

Prices to cover.

208. The contract price for basin connections shall cover the cost of all necessary excavation (except rock); of all necessary trimming, fitting and building into concrete, or masonry; of all backfilling; and of all labor and materials required to furnish and lay the basin connections complete in place as specified.

20

SPURS FOR HOUSE CONNECTIONS.

213. Spurs for house connections shall be of vitrified pipe 6 inches in diameter, equal in quality and dimensions to that specified for vitrified pipe sewers.

In concrete sewers.

- 30        214. In concrete sewers spurs shall be built in as shown on the plan or as directed. They shall be hub and spigot pipes with the spigot end molded or cut to fit flush with the inner surface of the sewer, and of sufficient length to reach the exterior of the sewer.

In pipe sewers.

- 40        215. Pipes having 6-inch spurs with hubs molded thereon shall be furnished and laid in pipe sewers where shown on the plan or directed. Such pipes will be paid for at the contract prices for vitrified pipe sewers, and the spurs will be paid for in addition at the contract price for spurs.

Covers.

216. The ends of all spurs not connected with drains shall be closed with approved covers. If required such covers shall be cemented in place, and when directed the covers shall be so cemented before the pipes are lowered into the trench.

EXHIBIT C-14 (*continued*):

Price to cover.

217. The contract price for spurs shall cover the cost of all labor and materials required to furnish and place the same as specified, and the cost of furnishing and cementing the covers for the same.

10 DRAINS FOR HOUSE CONNECTIONS.

218. Where shown on the plan or where directed, drains for house connections shall be built from the spurs in such a manner and for such distance as may be shown or directed.

Depth at curb.

20 219. House connections drains shall be laid with a minimum gradient of  $\frac{1}{4}$  inch to a foot, and wherever possible the depth from curb grade to the inner bottom of the drain at curb line shall be at least 8 feet.

Material.

220. Unless otherwise shown on the plan, drains for house connections shall be of vitrified pipe of the quality and dimensions specified for vitrified pipe sewers. The ends of the drains shall be closed with approved covers.

How laid.

30 221. All the requirements, as hereinbefore specified, relating to excavation, laying and backfilling of vitrified pipe sewers shall apply, as far as they are applicable, to drains for house connections.

Measurement.

222. The lengths of pipe drains for house connections to be paid for will be determined by measurement along their axes.

Price to cover.

40 223. The contract price for drains for house connections shall cover the cost of all necessary excavation (except rock); the cost of all backfilling; the cost of all covers, bends and specials required; and the cost of all labor and materials required to furnish and lay the drains for house connections complete in place, as specified.

EXHIBIT C-14 (continued):

RISERS.

224. Where shown on the plan or where directed risers for house connections shall be built from the spurs in such a manner and to such height as may be shown or directed. Unless otherwise shown on the plan they shall be of vitrified pipe of the quality and dimensions hereinbefore specified for vitrified pipe  
10 sewers. They shall be supported and surrounded by concrete as shown, and each shall be closed with an approved cover.

Measurement.

225. The lengths of risers to be paid for will be determined by measurements along their axes.

Price to cover.

226. The contract price for risers shall cover the cost of  
20 all necessary excavation (except rock); the cost of all concrete used in connection with the risers; the cost of all backfilling; the cost of all covers, bends and specials required; and the cost of all labor and materials required to construct the risers complete in place, as specified.

MANHOLES.

227. The masonry or concrete for manholes shall be built to within such distances of the existing surface of the ground as  
30 directed. When not built up to within 13 inches of the established grade of the street, the masonry or concrete shall, if directed, be covered with bluestones not less than 5 inches thick, or with an approved reinforced concrete slab to support the head.

Brick manholes.

228. Brick manholes shall be formed by means of templets placed at top and bottom with not less than 8 lines drawn between them, and they shall be smoothly and evenly plastered on  
40 the outside with a layer of mortar  $\frac{1}{2}$ -inch thick.

Concrete manholes.

229. Concrete manholes shall be built of the materials, sizes and dimensions shown on the plan.



EXHIBIT C-14 (*continued*):

Steps.

230. Galvanized wrought iron steps of the size and shape shown on the plan shall be firmly built into the manholes at vertical intervals of about 16 inches.

Head and cover.

- 10        231. The manhole head and cover shall be of cast iron, and unless otherwise shown on the plan, each head, exclusive of cover, shall weigh not less than 475 pounds and each cover shall weigh not less than 135 pounds. The weight of each head and cover shall be conspicuously painted thereon by the manufacturer with white oil paint. The head shall be set on the masonry or concrete in a full bed of stiff mortar.

Price to cover.

- 20        233. The contract price for manholes shall cover the cost of all necessary excavation (except rock); of all backfilling; of all plastering; of all bluestones; of all concrete slabs; of all steps; and of all labor and materials required to construct the same complete, in place, as shown on the plan and specified.

INLETS.

- 30        242. Inlets and the heads therefor shall be of the materials, forms and dimensions shown on the plan. The specifications for brickwork and concrete shall be those hereinbefore specified for basin manholes.

Heads.

243. The head shall be of cast iron and shall conform in all respects to the specifications for iron castings. If required, the inlets shall be closed with bulkheads of brick masonry and such bulkheads shall be removed when directed.

Restoration of roadway pavements, etc.

- 40        244. All roadway pavements, sidewalk pavements and curbs, disturbed by the construction of inlets, except those under guarantee for maintenance shall be restored by the Contractor in accordance with the specifications of the Bureau of Highways for similar work or specifications hereafter attached. In unpaved streets and macadamized streets where the inlets are approximately at the surface of the street a space of two and one-

EXHIBIT C-14 (continued) :

half (2½) feet adjoining such inlets shall, if required, be paved with approved paving blocks.

Price to cover.

10 245. The contract price for inlets shall cover the cost of all necessary excavation (except rock); of all backfilling; of the temporary brick bulkheads in the mouths of the inlets, when required; of all roadway, sidewalk and curb restorations; of all labor and materials required to construct the inlets, complete in place, as shown on the plan and specified.

RESTORATION OF SURFACE AND CLEANING UP.

Restoration of unpaved roadways, sidewalks, etc.

20 254. At such time as may be directed, all unpaved roadways, gutters and sidewalks affected by the work done under this contract shall be restored by the Contractor to the same condition in which they were at the time of the opening of bids for this contract.

Pavements, etc., restored by Contractor.

30 256. If required by the plan, roadway and sidewalk pavements, crosswalks, curbs, etc., shall be satisfactorily restored and adjusted by the Contractor at such times as may be directed. Sidewalk pavements shall be restored in whole flags, squares or sections which shall correspond in quality and appearance with the original or adjoining flags, squares or sections. All work and materials used in such restoration and adjustment shall conform in all respects to the standard specifications now in use by the President for similar work and materials.

256a. Any pavement within the railroad area disturbed by the construction of the sewer and its appurtenances, shall be restored by the contractor.

40 The cost of such restoration shall be covered by the price bid per linear foot for the sewer or appurtenances causing the above restoration.

Temporary restoration.

258. At such times as may be directed roadway and sidewalk pavements, crosswalks, curbs, etc., which have been re-

EXHIBIT C-14 (*continued*):

moved, whether under guarantee or not, shall be temporarily restored by the Contractor to the satisfaction of the Engineer.

When new pavement is laid.

10 260. If pavement, sidewalks, crosswalks, curbs, etc., are laid where none existed at the time the bids for this contract were opened, the Contractor shall excavate and remove such portions of the pavements, sidewalks, crosswalks, curbs, etc., and their foundations as may be necessary for the prosecution of the work, but he will not be required to make a permanent restoration of them.

Trenches flooded.

20 261. Before laying any pavements, sidewalks, crosswalks, curbs, etc., the trenches shall, if required, be flooded with water, as directed, and all resulting holes or depressions shall be filled and tamped solid.

Cleaning up.

30 263. At such times as may be directed the Contractor shall remove from the streets, all materials which were placed thereon by him as a consequence of performing this work and which are not required by the contract to be left as part of the finished work. The entire work and portions of the streets affected thereby shall be left in a satisfactory condition. The sidewalks and crosswalks shall be swept clean of all material which may have come thereon by reason of the work under this contract, and if required, they shall be sprinkled with water during the sweeping.

Cost to be covered.

40 264. The cost of all the labor required to be done and all the materials required to be furnished in the performance of all the work specified in paragraphs 254 to 263 inclusive, shall be covered by all the contract prices for all the items for which there are contract prices.

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EXHIBIT C-2:

EXHIBIT C-2.

*(Agreement between Joseph L. Sigretto & Co. and John J. Creem,  
Re 51st Street Contract Comptroller's No. 49784,  
Dated September 3rd, 1918.)*

10 THIS AGREEMENT, made the 3rd day of September, 1918, by and between JOSEPH L. SIGRETTO & COMPANY, a corporation existing under the laws of the State of New York, the first party, and JOHN J. CREEM, of the City and State of New York, Borough of Brooklyn, the second party;

WITNESSETH, That

20 WHEREAS, the said first party has made and entered into a contract with the City of New York, acting by and through the President of the Borough of Queens, for a sewer and appurtenances in 51st Street, from Lurting Street to Waldron Street, Second Ward, Borough of Queens, for which bids were opened June 24, 1918, which said contract was subsequently awarded to Joseph L. Sigretto & Company; and

WHEREAS the said first party has made an assignment of said contract for said sewer to the said second party;

IT IS THEREFORE MUTUALLY AGREED as follows:  
that

30 For and in consideration of said assignment, and when and at the time The City of New York, acting by and through said Borough President, shall have fully accepted and recognized said John J. Creem as said assignee and contractor, the second party will pay to the first party the sum of Fifteen Thousand Dollars (\$15,000.); and shall thereafter, on the payment of each estimate and certificate made and filed with The City of New York by the said City, and within five days after the receipt of said payment from said City by John J. Creem, pay to the first  
40 party four per cent (4%) of each and every payment, including the final payment on account of said work, for labor and materials so estimated and certified;

This agreement is also conditioned upon The City of New York permitting said Creem to proceed with and carry out all the work embraced in said contract and in case of failure of the City to permit said Creem to proceed, all money paid hereunder

EXHIBIT C-2 (*continued*):

shall be repaid to said Creem as aforesaid, provided the failure to proceed with or complete the work be through no fault or said Creem.

10 The said first party further agrees to make and execute any further evidences, instruments or documents requisite and necessary or required by The City of New York, its Comptroller or other officers and representatives, to perfect the said assignment of contract and to secure to the said John J. Creem the right and power to demand, receive, sue for and recover all moneys due or to grow due or that may become due under said contract or by reason of any breach thereof.

20 The first party further covenants and agrees that it or they have not assigned to any other person or party any right, title or interest in or to said contract, or to any moneys due or to become due thereunder, and that there are no liens, incumbrances or obligations created against said contract or the moneys due or to grow due thereunder, except that the first party has contracted with George B. Raymond & Co. for five thousand (5,000) barrels of cement at \$2.95 a barrel, and for cement pipe with the Lock-Joint Pipe Co. and for vitrified pipe with the Robinson Clay Products Co., which contracts, the party of the first part will assign and turn over to the party of the second part, and the said party undertakes to warrant and defend the title to said contract and to insure to the second party all the rights, benefits, interests and profits arising under and by virtue of said contract.

30

And John J. Creem undertakes and agrees to assume said contract and to perform and complete the same in accordance with the terms thereof, in lieu of and in place of the first party.

40 The obligation of this contract is dependent upon and shall be postponed until the consent of The City of New York, acting by and through the President of the Borough of Queens, shall have been obtained and shall have been duly filed and recorded, with the assignment hereof, and other necessary papers, in the offices of the said President of the Borough of Queens, the Comptroller and such other heads of departments of bureaus and County Clerk's Offices as may be required by law.

It is further understood that the party of the second part will pay \$500. toward the first year's premium for the bond already executed by the National Surety Co. and other surety companies in the sum of One Hundred thousand (\$100,000.) dollars

EXHIBIT C-2 (continued):

EXHIBIT C-13:

10 to The City of New York to secure the performance of this contract, and the balance of said first year's premium is to be paid by the party of the first part, although it is understood that the said bond is to be cancelled if the same can be done, and that the party of the second part is to secure the City by the deposit of collateral in lieu of the bond. If such arrangement is impossible, then any premiums on said bond after the first year, are assumed and shall be paid by the party of the second part.

IN WITNESS WHEREOF the parties hereto have caused this instrument to be executed under their respective hands and seals on the day and date first above written.

JOSEPH L. SIGRETTO & COMPANY [L. S.]

By JOSEPH L. SIGRETTO,  
President.

20 Attest:

.....  
Secretary.

JOHN J. CREEM [L. S.]

In presence of:

.....

30

EXHIBIT C-13.

(Agreement between Jos. L. Sigretto & Co. and John J. Creem,  
Re 51st Street Contract No. 49784, Dated September 3rd, 1918.)

40 KNOW ALL MEN BY THESE PRESENTS, that we, JOSEPH L. SIGRETTO & COMPANY, of the Borough of Queens, City of New York, for and in consideration of the sum of One Dollar and other good and valuable consideration, to us in hand paid by JOHN J. CREEM, of 899 Green Avenue, Borough of Brooklyn, City of New York, receipt whereof is hereby acknowledged, have sold, assigned, transferred and set over, and by these presents, do hereby sell, assign, transfer and set over unto the said JOHN J. CREEM, a certain contract bearing date of July 12, 1918, numbered 49784, entered into between the said JOSEPH L. SIGRETTO & COMPANY and the CITY OF NEW YORK, for constructing sewer and appurtenances in FIFTY-

EXHIBIT C-13 (*continued*) :

FIRST STREET (Central Avenue) from Lurting (Willow) Street to Waldron Street (Lawn Avenue) Second Ward, Borough of Queens, City of New York, together with all our rights, privileges and interests therein, and also all moneys due or to grow due; and all claims of every nature under said contract, which we now have or hereafter may have against the City of New York, or others by reason thereof; and we do hereby constitute the said JOHN J. CREEM our true and lawful attorney, with authority to do and perform any convenient or necessary acts in connection therewith in our name, place and stead as fully and in the same manner as we could do in person; hereby ratifying all our said attorney or his substitute shall lawfully do in the premises.

TO HAVE AND TO HOLD unto the said JOHN J. CREEM his successors or assigns.

IN WITNESS WHEREOF, we have hereunto set our hand and seal this 3rd day of September, 1918.

WITNESS: JOSEPH L. SIGRETTO & COMPANY

GEO. W. TITCOMB.

By Joseph L. Sigretto,  
President.

We hereby consent to the above.

September 4th, 1918.

National Surety Company.

CHARLES J. KOCH,  
Resident Vice-President.

L. W. FITZGERALD,  
Resident Ass't. Secretary.

London & Lancashire Indemnity  
Company of America.

J. E. SWEENEY,  
Attorney-in-fact.

EXHIBIT C-13 (continued):

We hereby consent to the above.

September 4th, 1918.

New Amsterdam Casualty Company.

By E. W. BROOKS,  
Vice-President.

10

Attest: .....  
Assistant Secretary.

THE CITY AND STATE OF NEW YORK,  
COUNTY OF QUEENS, ss.:

20

On this 3rd day of September, 1918, before me personally came JOSEPH L. SIGRETTO to me known and known to me to be the President of the JOSEPH L. SIGRETTO & COMPANY, who being by me duly sworn, did say, for himself, as follows:

30

The said JOSEPH L. SIGRETTO that he resides in the City of New York, and is the President of the said Company; that he knows the Corporate seal of said company that the seal affixed to the foregoing instrument is such corporate seal; that it was so affixed by order of the Board of Directors of said Company, and that by like order he thereto signed his name and official designation.

HARRY I. HUBER,  
Commissioner of Deeds, City of New York  
Term expires February 26, 1920  
Co. Clerk's Nos. New York 58, Queens 157, Kings 22  
Register's No. Kings 117.

40

KNOW ALL MEN BY THESE PRESENTS, that I, JOHN J. CREEM, do hereby accept this contract herein assigned to me and agree to perform the work herein stipulated to be done in accordance with the specifications and to comply in all respects with each and every condition therein contained.

WITNESS

JOHN J. CREEM.

GEO. W. TITCOMB.



EXHIBIT C-13 (*continued*) :

EXHIBIT C-15:

THE CITY AND STATE OF NEW YORK, COUNTY OF ss:

10 On this 3rd day of September, 1918, before me personally came JOHN J. CREEM to me known and known to me to be the individual described in and who executed the foregoing instrument and duly acknowledged that he executed the same.

HARRY I. HUBER,  
Commissioner of Deeds, City of New York  
Term expires February 26, 1920  
Co. Clerk's Nos. New York 58, Queens 157, Kings 22  
Register's No. Kings 117.

APPROVED Quadruplicate September 4th, 1918, in accordance with the terms and conditions of Contract No. 49784.

20 MAURICE E. CONNOLLY,  
President, Borough of Queens.

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EXHIBIT C-15.

(*Letter to Joseph L. Sigretto & Company from John J. Creem, paying 4% of money received from City for assignment of contract as a royalty.*)

30 JOHN J. CREEM  
Contractors  
899 Greene Ave.,  
Brooklyn, N. Y.

Sept. 5, 1918.

Joseph L. Sigretto & Co.

Gentlemen:—

40 Agreeable to your request in your letter of even date I will make payments from the 4% mentioned in our agreement of 3rd inst. to you until they aggregate \$6900.00 after that all payments to be made to John M. Phillips.

I am enclosing ck. for \$500. payment in full of my share first years premium.

Very truly,

JOHN J. CREEM.

EXHIBIT C-16:

EXHIBIT C-16.

*(Letter of Joseph L. Sigretto & Co. to John J. Creem Re acknowledging receipt of \$15,000 for assignment to Creem of 51st Street contract.)*

10 Brooklyn, N. Y., September 5, 1918.

Mr. John J. Creem,  
899 Greene Ave.,  
Brooklyn, N. Y.

Dear Sir:

20 Referring to the agreement dated September 3, 1918, between yourself and us, by which we sold you our contract for building a sewer in Fifty-first Street in the Second Ward, Borough of Queens, for the consideration of \$15,000 and a sum equal to four per cent (4%) of each and every payment to be made by the City on account of the said contract, we hereby acknowledge receipt of the \$15,000 this date paid by you, and hereby direct and request that after you have paid us on account of said four per cent payments, the amount of \$6,900, that you pay to John M. Phillips of 112 Academy Street, Long Island City, the balance of said four per cent payments and charge the same to our account.

30 We should be glad to have you acknowledge the receipt of this letter, and advise us that you will make the payments to Mr. Phillips after the payment of the \$6,900 to us, as directed.

Yours very truly,

JOSEPH L. SIGRETTO & COMPANY

By Joseph L. Sigretto,  
President.

40

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EXHIBIT C-212:

EXHIBIT C-212.

10 (Contract between The City of New York and Porter and DeWitt, for the construction of sanitary and storm water sewers and appurtenances in 32nd (Myrtle) Avenue from Union St. (Whitestone) Ave., to Lawrence Ave., and in Lawrence Avenue from 32nd (Myrtle Avenue) to Willetts Pt. Blvd., a storm water sewer and a temporary screening plant and appurtenances in Willets Point Boulevard (Road) from Lawrence Ave. to Flushing River, and a cut-off and overflow chamber and appurtenances in Linden street at 32nd (Myrtle) Ave., together with so much of the pumping Station at Linden St. and 32nd (Myrtle) Ave., as may be necessary to provide for pumping a flow at the rate of 576,000 gallons per day, Third Ward of the Borough of Queens, on August 27th, 1919.)

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ANNEXES TO THE CONTRACT.

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THE CITY OF NEW YORK—DEPARTMENT OF FINANCE

Office of the Comptroller

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CONTRACT SUMMARY

Contractor: PORTER & DE WITT. No. 51832

Names of sureties: U. S. Fidelity & Guarantee Co., \$115,000.

Maryland Casualty Co., \$50,000.

N. Amsterdam, \$50,000.

L. & L. \$85,000.

40

Amount of bond: \$350,000.00

Date of award: August 4, 1919; Department: President, Borough of Queens; Date of contract: Aug. 27, 1919; Borough: Queens; Date of expiration: 400 consecutive working days; Date of filing: Aug. 8, 1919; Damages: \$50 per day; Date paid in full: 7/24/23.

EXHIBIT C-212 (continued):

DESCRIPTION OF WORK

Type "B"

10 For the construction of sanitary and storm water sewers and appurtenances in 32ND (Myrtle) Avenue from Union St. (Whitestone) Ave., to Lawrence Ave., and in Lawrence Avenue from 32nd (Myrtle Avenue) to Willetts Pt. Blvd., a storm water sewer and a temporary screening plant and appurtenances in Willetts Point Boulevard (Road) from Lawrence Ave. to Flushing River, and a cut-off and overflow chamber and appurtenances in Linden Street at 32nd (Myrtle) Ave., together with so much of the pumping station at Linden St. and 32nd (Myrtle) Ave., as may be necessary to provide for pumping a flow at the rate of 576,000 gallons per day, Third Ward of the Borough of Queens.

	Original estimate,	\$659,218.30
		<u>659,218.30</u>
20	A. E.	17,386.75
		6,480.30
		<u>10,185.03</u>
		693,270.38
	R. E.	64.80
		<u>693,205.58</u>

30 ACCOUNTS TO BE CHARGED

C. F. M. 25

The obligation on this surety bond ceases as to anything occurring after August 15, 1922.

If the conditions of the contract have been complied with, the retained percentage (if any) is due on or after August 15, 1922.

40 GEORGE W. MARTIN,  
Examiner.

LIENS AND ASSIGNMENTS

Assignment filed 9/20/19, Angelo Paino & Co., Contract.  
Assignment filed 5/27/20, Montank Bank, Satisfied \$50,000.00 out of final.  
Assignment filed 6/28/20, Lawyers Title & Trust Co., \$27,149.85.  
2/24/22, Peace Bros. Inc., Satisfied \$13,300.

EXHIBIT C-212 (continued) :

ORIGINAL ESTIMATE, ADDITIONS AND REDUCTIONS.

C F M 25	OE	659,218.30
		6,480.30
		665,698.60
		17,386.75
		683,085.35

10

PAYMENTS, AMOUNTS RETAINED AND EARNED

	Date	... % Payments	Amount paid to date	Amount retained to date	Amount earned to date
	18-25-19	55,409.80	55,409.80	9,778.20	65,188.00
	11-25-19	62,052.55	117,462.35	20,728.65	138,191.00
	1- 2-20	37,909.06	155,371.41	27,418.49	182,789.90
20	2- 2-20	15,163.15	170,534.56	30,094.34	200,628.90
	4-15-20	26,153.23	196,687.79	34,709.61	231,397.40
	5-21-20	20,438.76	217,126.55	38,316.45	255,443.00
	6-21-20	54,299.70	271,426.25	47,898.75	319,325.00
	7-20-	49,468.30	320,894.55	56,628.45	377,523.00
	8-30-20	46,146.50	367,041.05	64,771.95	431,813.00
	9-29-20	76,704.42	443,745.47	78,308.03	522,053.50
	11- 5-20	43,874.45	487,619.92	86,050.58	573,670.50
	12-10-20	21,907.48	509,527.40	89,916.60	599,444.00
	9- 3-21	28,297.01	537,824.41	94,910.19	632,734.60
30	10- 8-21	19,829.65	557,654.06	98,409.54	656,063.60
	11-21	8,189.75	565,843.81	99,854.79	665,698.60
	12-23-21	8,565.87	574,409.68	101,366.42	675,776.10
	2- 1 22	6,212.87	580,622.55	102,462.80	683,085.35
	3- 6-22	105,583.03	686,205.58	2,000.00	
	9-12-22	2,000.00	688,205.58	5,000.00	693,270.38
	10-24	5,000.00	693,205.58		693,270.38
		<hr/>			
		693,205.58			
		<hr/>			

40

IN FULL.

Deduct for excess piling

6,480

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EXHIBIT C-212 (*continued*):

THE CITY OF NEW YORK

Office of

THE PRESIDENT OF THE BOROUGH OF QUEENS

Maurice E. Connolly  
President

10

Joseph Flanagan  
Borough Secretary

Hugh Hall  
Secretary to President

Long Island City, September 12, 1919.

Hon. Charles L. Craig, Comptroller,  
City of New York.

20

Sir:—

I beg to transmit herewith for registration in the Department of Finance the following contract;—

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“For the construction of sanitary and storm water sewers and appurtenances in 32ND (Myrtle) AVENUE from Union St. (Whitestone Ave.) to Lawrence Ave., and in LAWRENCE AVENUE from 32nd (Myrtle) Avenue to Willets Point Boulevard; a storm water sewer and a temporary screening plant and appurtenances in WILLETS POINT BOULEVARD (Road) from Lawrence Ave. to Flushing River; and a cut-off and overflow chamber and appurtenances in LINDEN STREET at 32nd (Myrtle) Ave., together with so much of the pumping station at Linden St. and 32nd (Myrtle) Ave. as may be necessary to provide for pumping a flow at the rate of 576,000 gallons per day, Third Ward of the Borough of Queens.”

Yours very truly,

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WPB-PIH

encl.

MAURICE E. CONNOLLY,  
President of the Borough of Queens.

EXHIBIT C-212 (*continued*):

AGREEMENT made this 8th day of October, 1919, between THE CITY OF NEW YORK, Party of the First Part, and ANGELO PAINO AND COMPANY, 2016 East 14th Street, Brooklyn, Assignee of Porter and De Witt, Party of the Second Part:

10 WHEREAS, the parties hereunto, under date of August 27, 1919, entered into a contract, designated as:

#51,832

20 For the construction of sanitary and storm water sewers and appurtenances in 32ND (MYRTLE) AVENUE from Union St. (Whitestone Av.) to Lawrence Av., and in LAWRENCE AVENUE from 32nd (Myrtle) Av. to Willets Point Boulevard, a storm water sewer and a temporary screening plant and appurtenances in WILLETS POINT BOULEVARD (Road) from Lawrence Av. to Flushing River; and a cut-off and overflow chamber and appurtenances in LINDEN STREET at 32nd (Myrtle) Av., together with so much of the pumping station at Linden St. and 32nd (Myrtle) Av., as may be necessary to provide for pumping a flow at the rate of 576,000 gallons per day, Third Ward of the Borough of Queens.

30 WHEREAS, the Party of the Second Part has requested, in view of the abnormal conditions prevailing, a modification in schedule to provide for the payment of materials delivered and for work performed for the purpose of facilitating the prompt execution of the contract, that the contract be modified so that partial payments may be made as the work progresses for the reinforced concrete pipe, as delivered on the line of the work, and other work performed, although not incorporated in the sewer structure; and,

WHEREAS, paragraph VIII of the Contract provides:

40 "This contract may be modified and changed from time to time, as may be previously agreed to in writing between the parties hereto in a manner not materially affecting the substance thereof, or increasing the contract price thereunder, in order to carry out and complete more fully and perfectly the work herein agreed to be done and performed."

1. NOW, THEREFORE, it is agreed that contract No. 51832, dated August 27, 1919, be and the same is hereby modified

EXHIBIT C-212 (*continued*):

to provide that 85% Progress Payments be made to the Party of the Second Part for the reinforced concrete pipe actually delivered on the site of the work, and other work performed, and accepted by the ENGINEER, in accordance with the following schedule of prices;

2. No payment will be made by the Party of the First Part for any reinforced concrete pipe, so delivered, but not incorporated in the sewer structure, unless and until the Party of the First Part for any reinforced concrete pipe, so delivered, but not incorporated in the sewer structure, unless and until the Party of the Second Part shall have furnished to the President of the Borough of Queens and the Comptroller of The City of New York satisfactory evidence that the Party of the Second Part is the sole owner of such material, free and clear from all liens or other encumbrances, said material upon being estimated for payment shall become the property of the Party of the First Part. The Party of the Second Part shall not, however, by reason of said payments be relieved from responsibility for said material and the protection thereof, and shall make good any loss or damage thereto, and shall be responsible for the entire work until the same is finally accepted by the Party of the First Part, as provided in the Contract.

3. THIS AGREEMENT shall take effect if, and only when the written consents of the sureties upon said contract are obtained and attached hereto.

30

SCHEDULE OF UNIT PRICES TO BE USED IN MAKING UP 85% CERTIFICATES.

- For the construction of sanitary and storm water sewers and appurtenances in 32ND (MYRTLE) AVENUE from Union St. (Whitestone Av.) to Lawrence Av. and in LAWRENCE AVENUE from 32nd (Myrtle) Av. to Willets Point Boulevard; a storm water sewer and a temporary screening plant and appurtenances in WILLETS POINT BOULEVARD (Road) from Lawrence Av. to Flushing River; and a cut-off and overflow chamber and appurtenances in LINDEN STREET at 32nd (Myrtle) Av., together with so much of the pumping station at Linden St. and 32nd (Myrtle) Av., as may be necessary to provide for pumping a flow at the rate of 576,000 gallons per day, Third Ward of the Borough of Queens.

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EXHIBIT C-212 (continued) :

	2,096 lineal feet of Double Barrel 8'0" Circular Pre Cast Pipe Sewer .....@	\$116.00	\$243,136.00
	Excavation .....	\$29.00	
	Precast pipe delivered .....	66.00	
	Pumping		
	Joints		
10	Backfill		
	Laying.....	21.00	116.00
	580 lineal feet of Combination Two-story 8'0" Circular Precast Pipe and 18" Vitrified Pipe Sewer .....@	100.00	58,000.00
	Excavation .....	18.00	
	Precast pipe delivered .....	33.00	
20	18" Vitrified Pipe furnished and in place over S. W. Sewer .....	6.00	
	Concrete and steel .....	25.00	
	Pumping		
	Joints		
	Backfill		
	Laying .....	18.00	100.00
30	869 lineal feet of Combination two-story 7'0" circular precast pipe & 18" Vitrified Pipe Sewer .....@	82.00	71,258.00
	Excavation .....	15.00	
	Precast pipe delivered .....	30.25	
	18" Vitrified Pipe furnished and in place over S. W. sewer .....	6.00	
40	Concrete and steel .....	19.00	
	Pumping		
	Joints		
	Backfill		
	Laying .....	11.75	82.00

EXHIBIT C-212 (continued):

	4,009 lineal feet of 15" Flexible Joint Concrete Pipe @.....	15.40	61,738.60
	Excavation .....	4.60	
	Pipe delivered.....	4.70	
	Concrete and steel .....	1.55	
10	Joints Backfill Laying .....	4.55	15.40
	2,902 lineal feet of 12" Flexible Joint Concrete Pipe @ .....	11.25	32,647.50
	Excavation .....	3.50	
	Pipe delivered .....	3.75	
	Concrete and steel .....	1.00	
20	Joints Backfill Laying .....	3.00	11.25
			<hr/>
			\$466,780.10

ALL OTHER ITEMS TO BE PAID FOR AT THE PRICE BID.

30 IN WITNESS WHEREOF, the parties hereto have executed this AGREEMENT the day and the year first above written.

MAURICE E. CONNOLLY,  
President of the Borough of Queens  
For the City of New York,  
PARTY OF THE FIRST PART.

ANGELO PAINO,  
For Angelo Paino and Company,  
PARTY OF THE SECOND PART.

40

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

On this 29th day of November, 1919, personally came and appeared before me ANGELO PAINO; to me known and known to me to be the person described therein, and who executed the

**EXHIBIT C-212 (continued) :**

forgoing instrument and acknowledged that he executed the same for the uses and purposes therein mentioned.

WM. F. HEFFERNAN  
Comm. of Deeds, N. Y. City  
Residing in N. Y. County  
New York Co. Clerks No. 6  
Term expires Jan. 22, 1920.

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**THE UNDERSIGNED**, being sureties on the bonds given on security for the faithful performance of the contract mentioned in the foregoing agreement hereby consent to the making of the foregoing agreement.

New Amsterdam Casualty Company,

20

By WM. W. LABONTE,  
Resident Vice-President.

Attest: WM. L. MCGINTY,  
Asst. Secretary.

U. S. Fidelity and Guarantee Company,

30

By E. MARSAN,  
Attorney-in-fact

Attest: WILLIAM H. ESTWICK,  
Attorney-in-fact

London and Lancashire Indemnity Company

By J. E. SWEENEY,  
Attorney-in-fact

Maryland Casualty Company,

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By E. B. McCONNELL,  
Attorney-in-fact

Approved as to form.

GEO. P. NICHOLSON,  
Acting Corporation Counsel.

EXHIBIT C-212 (continued) :

The City of New York

DEPARTMENT OF FINANCE

Comptroller's Office

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ENGINEERING.

November 17, 1919.

Mr. Chandler Withington,  
Chief Engineer.

Sir:—

20 Proposed agreement modifying contract (#51832) between  
the City of New York, acting by the Borough President of the  
Borough of Queens, and Angelo Paino and Company, Assignees  
of Porter and De Witt, for the construction of sanitary and storm  
water sewers in 32nd (Myrtle) Avenue from Union St. (White-  
stone) Avenue to Lawrence Avenue, etc., in the Borough of  
Queens is transmitted herewith.

In relation to the amounts which are to be paid for the  
various parts of each unit, as set forth in said agreement, I  
would state that these amounts appear satisfactory.

30

Respectfully,

.....  
Inspector.

Approved and forwarded.

.....  
Chief Engineer, Department of Finance.

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EXHIBIT C-212 (*continued*):

City of New York

LAW DEPARTMENT

Office of the Corporation Counsel.

William P. Burr,  
Corporation Counsel.

10

New York, November 24, 1919.

“Audit” (25462)

Hon. Charles L. Craig,  
Comptroller.

Sir:—

I am in receipt of a communication dated November 20, 1919, signed by Deputy Comptroller Louis H. Hahlo, which reads as follows:

20

“Enclosed herewith please find contract #51832 with Angelo Paino & Company as assignee of Porter & DeWitt, for the construction of sanitary and storm water sewers and appurtenances in various streets in the Borough of Queens, together with a modification of the contract entered into on October 8, 1919 between the President of the Borough of Queens and the contractor, agreeing to modify paragraph VIII of the contract so as to permit payment in accordance with the schedule of prices therein set forth for reinforced concrete pipe actually delivered on the site of the work and other work performed and accepted by the engineer.

30

These papers were submitted to you on October 17, 1919 for your approval as to the form of the modification and on October 31, 1919 you asked to be informed as to whether the amounts which are to be paid for the various parts of each unit are satisfactory to this department. Pursuant to your request, I have caused an investigation to be made as to the prices allowed for the items in each unit and I advise you that the amounts which are to be paid for the various parts of each unit are satisfactory to the Department of Finance.

40

I submit herewith a voucher for the sum of \$55,409.80 representing the first partial payment under the contract in which allowances are made in pursuance of the modifying agreement of October 8, 1919.

EXHIBIT C-212 (*continued*):

Kindly advise the Comptroller whether the modification may be made under the terms of the original contract and the within voucher paid in accordance therewith. If you advise that it may, please endorse on the agreement your approval as to form if the same is correct in that regard."

10 On October 31, 1919, this office advised you with reference to this matter.

Enclosed herewith I return the modifying agreement with my approval thereof as to form endorsed thereon. But I would suggest that Angelo Paino & Company acknowledge the execution of the agreement.

Respectfully yours,

GEO. P. NICHOLSON,  
Acting Corporation Counsel.

20 (Enclosure) VR

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City of New York

PRESIDENT OF THE BOROUGH OF QUEENS

30 Maurice E. Connolly  
President

Joseph Flanagan  
Borough Secretary

Hugh Hall  
Secretary to President

Long Island City, February 23rd, 1922.

40 Honorable Charles L. Craig,  
Municipal Building,  
New York City.

SIR:

In accordance with the recommendation of the Engineer of Sewers, this Department, I have granted an extension of time Two hundred and thirty-seven (237) working days, to Angelo Paino & Co., 32 Court Street, Brooklyn, N. Y., assignee of Porter

EXHIBIT C-212 (*continued*):

& DeWitt, in which to complete the work in connection with contract No. 51832:—

10           “For constructing sanitary sewers, etc., in  
          32nd (Myrtle) Ave. from Union St. (Whitestone Ave.) to  
          Lawrence Ave., and in  
          Lawrence Ave. from 32nd Ave. to Willetts Point Boule-  
          vard and a storm water and temporary screening  
          plant etc., in  
          Willetts Point Boulevard (Road) from Lawrence Ave. to  
          Flushing River, etc., Third Ward.”

20           The contractor was ordered to begin work on October 20th.,  
1919 and was started on October 1st., 1919, however when work  
was progressing large volumes of water were encountered  
throughout the work. Shortly after the contract was started we  
encountered the severe winter weather, that is during the winter  
of 1919-1920. While the contractor did not stop, the amount of  
construction work was materially less than would otherwise be  
the case. The work, as a whole, progressed satisfactorily until  
December 1920. About this time an investigation was started in  
regard to various contracts, in the Borough of Queens. The pay-  
ments due the various contractors, who were engaged on public  
contracts, was held up in almost every instance. This contract  
was one on which the contractor was unable to obtain the money  
due him.

30           A payment was made up in this office on Dec. 8th, 1920.  
At that time the amount of work finished was 79% of the total  
to be done and the time consumed was 79% of the time allowed.  
The work after this time was considerably slower and the con-  
tractor finally stopped work on January 16, 1921, giving as his  
reason that he was financially unable to continue until he re-  
ceived payments which were due him, he did not resume work  
until August 9th., 1921. The next payments made up on this  
contract after Dec. 8, 1920 was Sept. 1st, 1921. Between the date  
of closing down of the work, Jan. 16, 1921 and the date work was  
40 resumed, Aug. 9, 1921, there were 161½ working days. If this  
time is subtracted from the total number of days overtime, as  
not being chargeable, it leaves an actual overtime of 75½ days.

          Due to the fact that the work finished and the amount of  
allowable time consumed was in the same proportion up to the  
time that the contractor was unable to obtain payments due him,  
and in view of the difficulties encountered, and as this sewer has

EXHIBIT C-212 (*continued*):

been in operation for almost a year, I have granted the above extension of time.

Very truly yours,

BENJAMIN MANN,  
Acting President of the Borough of Queens.

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THE CITY OF NEW YORK

OFFICE OF THE PRESIDENT OF THE BOROUGH  
OF QUEENS

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BUREAU OF SEWERS

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CONTRACT FOR

the construction of sanitary and storm water sewers and appurtenances in 32ND (MYRTLE) AVENUE from Union St. (Whitestone Ave.) to Lawrence Ave., and in LAWRENCE AVENUE from 32nd (Myrtle) Ave. to Willets Point Boulevard; a storm water sewer and a temporary screening plant and appurtenances in WILLETS POINT BOULEVARD (Road) from Lawrence Ave. to Flushing River; and a cut-off and overflow chamber and appurtenances in LINDEN STREET at 32nd (Myrtle) Ave., together with so much of the pumping station at Linden St. and 32nd (Myrtle) Ave., as may be necessary to provide for pumping a flow at the rate of 576,000 gallons per day, Third Ward of the Borough of Queens, together with all the work incidental thereto.

30

Parties.

THIS AGREEMENT made and entered into this 27th day of August, in the year one thousand nine hundred and nineteen by and between The City of New York, party of the first part, by the President of the Borough of Queens, and Porter and de Witt of Edgewater, N. J., Contractor, party of the second part, pursuant to the provisions of The Greater New York Charter, and the resolution of The Board of Estimate and Apportionment adopted on the 6th day of June 1919, of which resolution the following is a copy:

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EXHIBIT C-212 (continued) :

RESOLUTION  
BOARD OF ESTIMATE AND APPORTIONMENT  
City of New York  
(Cal. No. 53)

10       RESOLVED, that the resolution adopted by the Board of Estimate and Apportionment on March 7, 1912, granting preliminary authorization for constructing sewers in MYRTLE AVENUE, LAWRENCE STREET and property acquired for sewer purposes at the foot of Myrtle Avenue, Borough of Queens, be and the same hereby is amended so as to conform to a resolution adopted on May 1, 1919, by the Local Boards of the Newton and Jamaica Districts, the amended resolution to read as follows:

20       WHEREAS, The President of the Borough of Queens has transmitted to the Board of Estimate and Apportionment a copy of a resolution of the Local Boards of the Newtown and Jamaica Districts, duly adopted by said Boards on the 1st day of May, 1919, and approved by the President of the Borough of Queens on the 12th day of May, 1919, initiating proceedings

30       “For the construction of sanitary and storm water sewers and appurtenances in 32ND (Myrtle) AVENUE from Union street (Whitestone avenue) to Lawrence avenue; and in LAWRENCE AVENUE from 32nd (Myrtle) avenue to Willets Point Boulevard; a storm water sewer and a temporary screening plant and appurtenances in WILLETS POINT BOULEVARD from Lawrence avenue to Flushing River, and a cut-off and overflow chamber and appurtenances in LINDEN STREET at 32ND (Myrtle) AVENUE, together with so much of the pumping station at Linden Street and 32nd Avenue, as may be necessary to provide for pumping a flow at the rate of 578,000 gallons per day, Third Ward, Borough of Queens;”

40       and which resolution is accompanied with an approximate estimate of the cost of the work and the assessed value of the property benefited.

RESOLVED, That the Board of Estimate and Apportionment hereby authorizes the President of the Borough of Queens to prepare plans, specifications and an estimate of cost based on actual survey, and also to secure a determination of the boundary

EXHIBIT C-212 (*continued*):

of the district of assessment; the entire expense of the work done subsequent to the date of this authorization to be charged against the Street Improvement Fund and later included in the assessment.

- 10 RESOLVED, That the Board of Estimate and Apportionment will consider the authorization of the construction of the said proposed improvement after the President of the Borough of Queens has submitted a statement showing that all of the above described work has been done, that he has secured the approval of the form of contract by the Corporation Counsel, that he is prepared to place the improvement under contract as soon as he receives the consent of the Board, and that the assessment map will be completed on or before the date of payment on acceptance; this report being accompanied by a further statement showing the quantity of work to be performed under each item and the unit price thereof, the expense incurred for preliminary work, the 20 allowance to be made for additional engineering and contingencies, the total probable cost, and the number of working days to be allowed the contractor for carrying out the work.

I hereby certify that the foregoing is a true copy of a resolution adopted by the Board of Estimate and Apportionment at a meeting of said Board held on June 6, 1919.

Dated, New York, June 11, 1919.

- 30 (Signed) JAMES MATTHEWS,  
Assistant Secretary.

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BOARD OF ESTIMATE AND APPORTIONMENT.

City of New York

(Cal. No. 53)

- 40 A copy of a resolution of the Local Board of the Newtown & Jamaica Districts, duly adopted by said Boards on the 1st day of May, 1919, and approved by the President of the Borough of Queens on the 12th day of May, 1919, having been transmitted to the Board of Estimate and Apportionment, initiating proceedings for the following Local Improvement:

“For the construction of sanitary and storm water sewers and appurtenances in 32ND (Myrtle) AVENUE

EXHIBIT C-212 (*continued*):

10 from Union street (Whitestone avenue) to Lawrence  
avenue; and in LAWRENCE AVENUE from 32nd  
(Myrtle) avenue to Willets Point Boulevard; a storm  
water sewer and a temporary screening plant and appur-  
tenances in WILLETS POINT BOULEVARD from Law-  
rence avenue to Flushing River, and a cut-off and over-  
flow chamber and appurtenances in LINDEN STREET  
at 32ND (Myrtle) AVENUE, together with so such of the  
pumping station at Linden Street and 32nd Avenue, as  
may be necessary to provide for pumping a flow at the  
rate of 576,000 gallons per day, Third Ward, Borough of  
Queens;”

and

20 WHEREAS, on the 7th day of March, 1912, and 6th day of  
June, 1919, resolutions having been adopted by the Board of  
Estimate and Apportionment authorizing the President of the  
Borough of Queens to prepare the necessary plans, specifications  
and an estimate of the cost of the proposed improvement based on  
actual survey and further resolving that the Board of Estimate  
and Apportionment will consider the authorization of the con-  
struction of the proposed improvement after the President of the  
Borough of Queens has submitted certain statements as provided  
in the said resolution, and the said resolution having been duly  
complied with by the President of the Borough of Queens, as  
appears by papers and documents on the files of the Board of  
30 Estimate and Apportionment, and there having been presented  
to the Board of Estimate and Apportionment an estimate in  
writing in such detail as the Board has directed that the cost of  
the proposed work or improvement, together with the preliminary  
expenses, will be the sum of \$722,600; and a statement of the  
assessed value according to the last preceding tax roll of the  
real estate included within the probable area of assessment, to  
wit, the sum of \$23,700,000 having also been presented, it is

40 RESOLVED, That the said resolution of the Local Board  
be and the same is hereby approved and the construction of the  
local improvement therein provided for is hereby authorized.  
This Board does hereby determine that no portion of the cost  
and expense thereof shall be borne and paid by The City of New  
York, but that the whole of such cost and expense, including the  
aforesaid preliminary expenses, shall be assessed upon the prop-  
erty deemed to be benefited by the said local improvement.

EXHIBIT C-212 (*continued*):

I hereby certify that the foregoing is a true copy of a resolution adopted by the Board of Estimate and Apportionment at a meeting of said Board held on June 6, 1919.

Dated, New York, June 11, 1919.

(Signed) JAMES MATTHEWS,  
Assistant Secretary,  
Board of Estimate and Apportionment.

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Covenant.

20 WITNESSETH, That the parties to these presents, each in consideration of the agreements on the part of the other herein contained, have mutually agreed, and hereby mutually agree, the party of the first part for itself and its successors, and the party of the second part for itself, himself, or themselves, and its, his or their executors, administrators, successors, and assigns, as follows:

Contract.

30 I. The contract for the hereinbefore entitled work shall include the following, which are hereby agreed upon as forming part and parcel thereof: the Proposal for Bids, the Bid, the Bond, this Agreement and the Specifications hereto annexed; also the Plan of the Work dated May 10th, 1919, filed in the office of the President of the Borough, entitled: Plan, Profile and Details for the construction of sanitary and storm water sewers and appurtenances in 32ND (MYRTLE) AVENUE from Union St. (Whitestone Ave.) to Lawrence Ave., and in LAWRENCE AVENUE from 32nd (Myrtle) Ave. to Willetts Point Boulevard; a storm water sewer and a temporary screening plant and appurtenances in WILLETTS POINT BOULEVARD (Road) from Lawrence Ave. to Flushing River; and a cut-off and overflow chamber and appurtenances in LINDEN STREET at 32nd  
40 (Myrtle) Ave., together with so much of the pumping station at Linden St. and 32nd (Myrtle) Ave. as may be necessary to provide for pumping a flow at the rate of 576,000 gallons per day, Third Ward of the Borough of Queens and also the Drawings of Standard Details pertinent thereto on file in the office of the Engineer.

EXHIBIT C-212 (*continued*):

Party of the first part.

II. Whenever the term "The City" or a word "President," or a pronoun in place of either, is used, it refers to and means The City of New York, the party of the first part hereto, or the President of the Borough of Queens, or his authorized representative.

10 Party of the second part.

Whenever the word "Contractor," or a pronoun in place thereof, is used, it refers to and means the party of the second part hereto.

Engineer described.

20 III. Whenever the word "Engineer," or a pronoun in place thereof, is used, it refers to and means the Engineer in Charge of Sewers, Borough of Queens, acting either directly or through assistants designated by him to act in the premises, limited to the particular duties entrusted to them. In case said Engineer may not be able to act, then such Engineer as may be designated by the President shall act in his place.

Terms defined.

30 IV. Whenever the word "plan" is used it refers to and means the plan of this work and the standard drawings pertinent thereto. Whenever it is provided that anything is "to be" or "to be done," "if" or "as," or "when" or "where approved," "required," "directed," "permitted," "ordered," "designated" or "deemed necessary" it shall be taken to mean approved, required, permitted, ordered, designated or deemed necessary as the case may be by the Engineer. Whenever the words "desirable," "suitable," "sufficient," "satisfactory" or others of a similar purport are used it is hereby agreed that the desirability, suitability, sufficiency, satisfactoriness or other denominated condition shall be as determined by the Engineer.

40 Contractor to furnish tools, proper appliances, etc.

V. The Contractor hereby agrees to furnish and provide all materials, labor, and appliances necessary and proper for the purpose, to excavate for, build, complete and connect in a good substantial manner, to the satisfaction of the President, and in conformity with the contract, the hereinbefore entitled work and all the work incidental thereto, and the Contractor hereby agrees

EXHIBIT C-212 (continued):

to receive and accept as and for his full compensation the following prices, which are the amounts or rates at which this contract was awarded to the Contractor at the public letting thereof:

Prices.

TYPE "B"

10 (I) Metal Lath, including expanded metal hanging ceiling, together with channel furring, etc., Complete, Sum of One hundred and fifty Dollars (\$150 00/100).

(J) Plastering, including three coats of Kings indoor and hard white finish on ceilings of office, lavatory and hall, and walls of office and hall. Keens's cement over Portland cement scratch coat on walls of lavatory and outside terra cotta partition, Complete, Sum of Four hundred and twelve Dollars (\$412 00/100).

20 (K) Housesmith's Work, including bar screens, perforated plate screens, pipe railings, trolley and hoist, baling press, steel door saddles, etc., Complete, Sum of Six thousand Dollars (\$6,000 00/100).

(L) Electrical Work, including lights, switches, conduits, outlet and panel boxes, Complete, Sum of Two hundred and forty Dollars (\$240 00/100).

30 (M) Floors, including laying and finishing, cement floors in screen-room and furnishing and laying red Kompolite (or equal) floors and sanitary base in office, hall and lavatory, Complete, Sum of Four hundred and fifty Dollars (\$450 00/100).

(N) Hardware, including hinges, locks, sash lifts, sash weights and pulleys, sash bolts, door stops, etc., Complete, Sum of Seventy five Dollars (\$75 00/100).

40 (O) Painting, including three coats of pure linseed oil and lead paint on outside of all door and window frames, outside of all sash and inside of all trim in screen-room. Trim in office, hall and lavatory, all doors and inside sash of office, hall and lavatory to have hard oil finish and varnished. Inside walls of screen-room to have two coats Keystona (or equal). Under side of roof to be filled and varnished. All exposed steel work to receive finish coat #52 National Paint Co. (or equal). Cutters, leaders and iron guards one coat of #900 Red lead, one coat of #40 Oxide, and finished with #1 Lead, Zinc and Inert.

EXHIBIT C-212 (continued):

National Paint Co. (or equal). All sash and window and door frames to be cut in, in same color. All to be furnished and finished as described, Complete, Sum of Three hundred Dollars (\$300 00/100).

5. 2,096 Linear Feet Double Barrel 8'0" Circular Reinforced Concrete precast pipe sewer, Per Linear Foot, One hundred and sixteen Dollars (\$116 00/100).
6. 580 Linear Feet Combination Two Story 8'-0" Circular Reinforced Concrete Precast Pipe Sewer and 18" Vitrified Pipe Sewer, including necessary concrete, reinforcing steel and angle irons, Complete, Per Linear Foot, One hundred Dollars (\$100 00/100).
7. 869 Linear Feet Combination Two Story 7'-0" Circular Reinforced Concrete Precast Pipe Sewer and 18" Vitrified Pipe Sewer, including necessary concrete, reinforcing steel and angle irons, Complete, Per Linear Foot, Eighty two Dollars (\$82 00/100).
8. 38 Linear Feet 18" Flexible Joint Reinforced Concrete Pressure Pipe, including reinforcement and cradle, Per Linear Foot, Eighteen Dollars (\$18 00/100).
9. 4,009 Linear Feet 15" Flexible Joint Reinforced Concrete Pressure Pipe, including reinforcement cradle, and H. C. spurs, Per Linear Foot, Fifteen and 40/100 Dollars (\$15 40/100).
10. 2,902 Linear Feet 12" Flexible Joint Reinforced Concrete Pressure Pipe, including reinforcement, cradle and H. O. Spurs, Per Linear Foot, Eleven and 25/100 Dollars (\$11 25/100).
11. 19 Manholes on Storm Water Sewers, Complete, Each, One hundred and twelve and 50/100 Dollars (\$112 50/100).
12. 9 Manholes on 18" Vitrified Pipe Sewers, Complete, Each, One hundred Dollars (\$100 00/100).
13. 55 Manholes on Flexible Joint Reinforced Concrete Pressure Pipe Sewer, Complete, Each, Two hundred and fifty five Dollars (\$255 00/100).
14. 26 Basin Manholes, Complete, Each, One hundred and twenty Dollars (\$120 00/100).

EXHIBIT C-212 (continued) :

15. 27 Inlets, Complete, Each, Seventy five Dollars (\$75 00/100).
16. 400 Linear Feet 12" Vitrified Pipe Basin Connections, Per Linear Foot, Two and 25/100 Dollars (\$2 25/100).
- 10 17. 450 Linear Feet 10" Vitrified Pipe Basin Connections, Per Linear Foot, Two and 00/100 Dollars (\$2 00/100).
18. Downstream Drop Chamber in Myrtle Ave. on Siphon, Complete, Sum of Two thousand Dollars (\$2,000 00/100).
19. Upstream Drop Chamber in Myrtle Ave. on Siphon, Complete, Sum of Twenty one hundred Dollars (\$2,100 00/100).
- 20 20. 24 Linear Feet Triple Barrel Circular Reinforced Concrete Siphon in Myrtle Ave. at Linden St., Complete, Sum of Twenty seven hundred Dollars (\$2,700 00/100).
21. Increaser in Myrtle Ave. (21'-6" long), Complete, Sum of Sixteen hundred Dollars (\$1,600 00/100).
22. Increaser in Linden St. at Myrtle Ave. (19'-6" long), Complete, Sum of Thirteen hundred and fifty Dollars (\$1,350 00/100).
- 30 23. Transition action in Linden St. at Myrtle Ave., Complete, Sum of Twelve hundred and seventy five Dollars (\$1,275 00/100).
24. Weir and Overflow Chamber, including 8'-0" Circular Pipe into Upstream Siphon Chamber, Complete, Sum of Fifty seven hundred Dollars (\$5,700 00/100).
- 40 25. 27 Linear Feet Temporary Connecting Sewer at Linden St. and Myrtle Ave., Complete, Sum of Four hundred and twenty Dollars (\$420 00/100).
26. Chamber (Connection) for the Leavitt Park Drain, including cast iron pipe connections, etc., Complete, Sum of Four hundred and twenty Dollars (\$420 00/100).



EXHIBIT C-212 (continued) :

27.           Increaser from 7'-0" to 8'-0" Single Barrel Sewer in Myrtle Ave., Complete, Sum of Seven hundred and fifty Dollars (\$750 00/100).
28.           Junction Chamber in Myrtle Ave. and Whitestone Ave., Complete, Sum of Twenty four hundred Dollars (\$2,400 00/100).
- 10 29. 127,000 Linear Feet Timber Piling, Per Linear Foot, Twenty cents (\$0.20).
30. 300,000 Feet B. M. Foundation Timber, Per 1,000 Feet, Twenty and 00/100 Dollars (\$20 00/100).
31. 400,000 Feet B. M. Timber for Sheeting and Bracing, Per 1,000 Feet, One cent (\$0.01).
- 20 32. 31,800 Lbs. Structural Steel, bolts, nuts and washers, Per Pound, Eight cents (\$0.08).
33.           360 Linear Feet Factory Fence (Anchor Post Fence, as shown), Per Linear Foot, Two and 55/100 Dollars (\$2 55/100).
34.           40 Linear Feet Front Picket Fence, (Anchor Post Fence, as shown), including Gates, Per Linear Foot, Ten and 00/100 Dollars (\$10 00/100).
- 30 35. 370 Linear Feet Moulded Concrete Curbs in casement, Per Linear Foot, Two and 70/100 Dollars (\$2 70/100).
36.           270 Square Yards Reinforced Concrete Pavement in casement, Per Square Yard, Three and 50/100 Dollars (\$3 50/100).
37.           1 Park Inlet Basin in casement, Complete, Sum of Ninety Dollars (\$90 00/100).
- 40 38. 4,600 Linear Feet Old Bluestone Curb to be reset only, (not to be cut), Per Linear Foot, Nine cents (\$0.09).
39. 3,670 Linear Feet Wooden Fence, furnished and built, as shown on plan, Per Linear Foot, Sixty cents (\$0.60).
40. 3.050 Square Feet Old Bluestone Side walk to be reset (not to be cut), Per Square Foot, Nine cents (\$0.09).

EXHIBIT C-212 (continued):

41. 8,100 Square Yards Waterbound Macadam Pavement, to be construed as shown on plan and in accordance with specifications, Per Square Yard, One and 50/100 Dollars (\$1 50/100).
- 10 42. 1,500 Cubic Yards Class "A" Concrete for Retaining Walls, and Cradle, Per Cubic Yard, Eighteen and 00/100 Dollars (\$18 00/100).
43. 30,000 Lbs. Reinforcement Steel for retaining Walls and Cradle, Per Pound, Ten cents (\$0.10).
44. 20 Linear Feet Sheet Pile Bulkhead at Outlet, including piling, timber and steel, Complete, Per Linear Foot, Thirty Dollars (\$30 00/100).
- 20 45. 2,200 Square Yards Cobble Stone Gutters to be constructed as shown on plan and in accordance with specifications, Per Square Yard, One Dollar (\$1 00/100).

46. TEMPORARY AUTOMATIC ELECTRIC PUMPING STATION.

P. S. (A) Foundation, including excavation, concrete, reinforcing steel, pumping, Complete, Sum of Seven hundred and seventy five Dollars (\$775 00/100).

30 (B) Housesmith's Work, including kiosk, screens, checkered plate floor, float tubes, I beams, floor grates, etc., Complete, Sum of Five hundred and ten Dollars (\$510 00/100).

40 (C) Pumps and Motors, two (2) four inch vertical centrifugal pumps, (Platt, Alberger, Morris or Allis-Chalmers or equal) connected to five (5) H. P., three (3) phase, sixty (60) cycle, 220 volts, squirrel cage, A. C. motors. Impeller to be bronze; casing to be free from leakage, capacity of each pump to be 400 G. P. M. at 850 R. P. M. against a total head of 17 ft.; squirrel cage motors to be either, Westinghouse, General Electric or Wagner, Sum of Twenty seven hundred Dollars (\$2,700 00/100).

(D) Valves, two (2) four inch (4") gate valves, with operating stems, wheels and standards, Sum of Sixty Dollars (\$60 00/100).

EXHIBIT C-212 (continued):

(E) Cast Iron Flange Pipe, furnishing and laying approximately 36 lin. ft. six (6) inch cast iron pipe, including special gaskets, nuts, belts, etc., Complete, Sum of Forty-eight Dollars (\$48 00/100).

10 (F) Vitrified Pipe Sewer, furnishing and laying approximately 18 ft. 24-inch vitrified pipe sewer, including cradle and reinforcement, Complete, Sum of One hundred and ninety five Dollars (\$195 00/100).

(G) Electrical Work, two (2) ball float switches (Sundh Type), two (2) three stop auto starters for motors, two (2) service time overload relay switches (Sundh Type) with dash pots, all to be mounted on marbleized slate switch board, together with conduits, cables, wiring, sockets, plugs, lamps, etc., Complete, Sum of Nine hundred Dollars (\$900 00/100).

20 (H) Painting, ceilings and sidewalks in motor chamber to be painted with Keystone. Exposed iron work, pipes, grates, float tubes, kiosk, pumps and motors to be given two coats of approved paints, Sum of Ninety Dollars (\$90 00/100).

47. 10,000 Feet B. M. Yellow Pine Timber and Lumber for the construction of stairs in front of improved property, including all labor and materials necessary to construct the above in accordance with the general plan of typical stairs, as shown, Per 1,000 Feet B. M., One hundred and twenty Dollars (\$120 00/100).

30 48. 20 Cubic Yards Rock Excavation, Per Cu. Yd., Fifteen Dollars (\$15 00/100).

49. 625 Cubic Yards Cinder Fill, furnished and placed on embankment as shown and under pavement in case-ment, Per Cubic Yard, One (\$1 00/100).

50. 26,000 Cubic Yards Displaced Material from the sewers, for the construction of sewer embankment, Per Cubic Yard, Thirty cents (\$0.30).

40 51. 7,000 Cubic Yards New Fill for Sewer Embankment, Per Cubic Yard, Five cents (\$0.05).

52. 500 Cubic Yards (approximately) Earth Excavation, for retaining walls, Per Cubic Yard, One and 50/100 Dollars (\$1 50/100).

EXHIBIT C-212 (*continued*):

53. 50 Linear Feet 18-inch Corrugated Culvert Pipe, furnished and laid where required, Per Linear Foot, Three Dollars (\$3 00/100).
54. 50 Linear Feet 24-inch Corrugated Culvert Pipe, furnished and laid where required, Per Linear Feet, Four and 20/100 Dollars (\$4 20/100).
- 10 55. 72 Linear Feet 6-inch Vitrified Pipe House Connection Drains to sanitary Sewers, as shown on plan, Per Linear Foot, Two and 10/100 Dollars (\$2 10/100).

Quantities are approximate only.

No extra compensation.

- 20 VI. The Contractor admits that the quantities of materials to be furnished and the amount of work to be done, as stated in the proposal for bids for the work, are approximate only. The Contractor agrees that The City is not to be held responsible that any of said quantities and amounts shall obtain in the construction of the work, as he has judged for himself as to such quantities and amounts and each of them, and as to the other circumstances affecting the cost of the performance of this contract; and that he will not at any time dispute or complain of such statement nor assert that there was any misunderstanding in regard to the character, size or depth of the excavations to be made or the kind or amount of the materials to be furnished or work to be done. The Contractor hereby agrees that he will not ask, demand, sue for, nor seek to recover for the entire work any extra compensation beyond the amount payable for the several classes of work and kinds of materials in this contract enumerated, which shall be actually performed and furnished, at the prices therefor herein agreed upon and fixed.
- 30

Sewers, etc., to be built as shown on the plan.

- 40 VII. The sewer and appurtenances will be built on the lines, at the depths and at the grades and in the manner shown on the plan of the work as the same will be designated on the ground by the Engineer.

Line may be changed.

The President may change the line of the sewer or the location of the receiving basins, or other sewer appurtenances provided such changes do not materially affect either the char-

EXHIBIT C-212 (*continued*):

acter or the amount of the work to be done, or the conditions under which it is to be performed, and the Contractor hereby agrees to make no claim for damages or extra compensation on account thereof.

Preservation of points, stakes, etc.

- 10       The Contractor will safeguard all points, stakes, grade marks, monuments and bench marks made or established on or near the line of work, and he agrees to accept responsibility for and to remedy at his cost any mistakes that may be caused by the unauthorized disturbance or removal of such points, stakes, grade marks, monuments and bench marks.

Written order for extra work.

- 20       VIII. No claim for additional work or materials shall be made by or allowed to the Contractor, unless before the performance of such additional work the President shall have first authorized the same, in writing, and the same shall have been done or furnished under a written order from the President, given before the performance of such additional work or the furnishing of such additional materials. The aggregate price to be paid for additional work or materials so authorized or ordered shall not exceed five per cent. (5%) of the contract price or the total cost of the work and materials.

Contract may be modified.

- 30       This contract may be modified and changed from time to time as may previously be agreed to, in writing, between the parties hereto, in a manner not materially affecting the substance thereof or increasing the contract price thereunder, in order to carry out and complete more fully and perfectly the work herein agreed to be done and performed.

Limit to extras.

- 40       All claims for additional work or materials in any month shall be made to the Engineer, in writing, before the 15th day of the following month, and failing to make such claim within the time required, the rights of the Contractor to additional pay for such additional work or materials shall be deemed to have been waived and forfeited.

EXHIBIT C-212 (*continued*) :

Inspection.

Work or materials may be condemned at any time.

10 IX. The Engineer shall inspect the materials furnished and the work done and see that the same correspond with the specifications. The Engineer is hereby authorized and empowered to reject and refuse all labor and material or method of application, or any part thereof, offered under or in fulfillment of this contract, that do not comply in kind, quality or quantity with the terms thereof. Any material delivered or offered to be delivered under this contract, which shall be rejected by the Engineer as not conforming to the terms thereof, will be forthwith removed by the Contractor, and material which does so conform will be forthwith furnished and delivered by him in place thereof. The Contractor hereby agrees not to use any material which has not been inspected and accepted, nor to perform any work except 20 under inspection, to which end he further agrees to notify the Engineer when lines, grades or inspection are required so that the Engineer may have time to provide for the same. No inspection, approval or acceptance of any part of the work herein contracted for or of the materials used therein, or any payment on account thereof, shall prevent the President from refusing to accept the work or materials at any time thereafter.

Engineer to be final arbiter.

30 X. To prevent all disputes and litigation, it is hereby agreed that the Chief Engineer in Charge of Sewers shall, in all cases determine the amount and the quality of the several kinds of work and materials which are to be paid for under this contract, and he shall determine all questions in relation to the work and materials and the construction thereof, and he shall in all cases decide every question which may arise relative to the execution of this contract on the part of the Contractor, and his decision will be final and conclusive; and such decision, in case any question shall arise, shall be a condition precedent to the right of the Contractor to receive any money under this contract.

40 Any doubt as to the meaning of this contract and the specifications thereof, or any obscurity as to the wording of them, or any discrepancy between them and the plan will be explained by the Engineer, and his explanation will be accepted by the Contractor, who hereby agrees to execute the work in accordance with such explanation, and to make no charge or claim for any extra work or damage on account thereof.

EXHIBIT C-212 (*continued*):

Work and materials must agree with specifications.

10 XI. The work will be performed in the best manner, and all materials of which the work is composed will be of the best kind, and a sufficient number of persons will be at all times employed to execute the work with due dispatch, the whole to be done to the satisfaction of the Engineer, and any materials furnished or work done not satisfactory to the Engineer will be immediately removed and satisfactorily replaced by the Contractor at his own expense; or if he shall neglect or refuse to remove and replace the same when notified so to do by a written notice to be served upon him, then the President may remove, or cause the same to be removed and satisfactorily replaced, by contract or otherwise, as he may deem expedient, and charge the expense thereof to the Contractor; and the expense so charged shall be deducted and paid by The City out of such moneys as are or may become due under this contract.

20 Examinations.

During the progress or after the completion of the work, should the Engineer require it, for the purpose of examining the same, the Contractor will make such openings, and to such extent through such part or parts of the work as the Engineer may direct, and the Contractor will satisfactorily restore the work so disturbed. Should the openings disclose defects in the work such defects shall be remedied in accordance with the provisions of the first paragraph of this section.

30 Use of patented articles.

40 XII. Wherever an article or any kind of material is specified by a trade name or by the name of a patentee, manufacturer or dealer, or by reference to the catalogue of a manufacturer or dealer, it shall be taken as intending to mean and specify the article or kind of material designated, or any other equal thereto in quality, finish and durability, and equally serviceable for the purposes for which it is or they are intended. Nothing on the plan or in the specifications shall be interpreted or taken to violate the provisions of section 1554 of the Greater New York Charter, which provides that "except for repairs, no patented pavement shall be laid and no patented article shall be advertised for, contracted for or purchased, except under such circumstances that there can be a fair and reasonable opportunity for competition, the conditions to secure which shall be prescribed by the Board of Estimate and Apportionment."

EXHIBIT C-212 (*continued*) :

Claims for infringement.

10 The Contractor will be responsible for any claims made against The City for any infringement of patents, by the use of patented articles or processes in the construction and completion of the work, and he will have harmless and indemnify The City against all costs, expenses and damages caused by reason of any infringement of patents used in the construction and completion of the work.

Commencement and completion.

20 XIII. The Contractor will begin the work herein agreed to be performed on such date as the President shall notify him to begin on and from which date the time hereinafter fixed for the completion of the work shall begin to run. The place where the work is to be begun will be either stated in said notice or designated on the ground by the Engineer. The commencement of work by the Contractor shall be deemed and taken to be a waiver on his part of notice to begin work, in which case the time for the completion of the work will begin to run on and from the date the work was commenced.

Time of performance.

30 XIV. The Contractor will carry on the work with such force and in such manner and order and at such places, times and seasons, including freezing weather, as may be directed by the Engineer, and will execute all the work in every respect in a thorough and workmanlike manner; and he will fully and entirely perform this contract on his part before the expiration of FOUR HUNDRED (400) CONSECUTIVE WORKING DAYS.

Time important.

40 It is hereby agreed that the time designated for the performance of all the work under this Contract is of the essence of this agreement, in view whereof it is hereby further agreed that a rate of progress will be maintained so that the work performed up to any time will be at least the same percentage of the total work to be performed under this contract as the net elapsed time at such time is of the total time allowed for the performance of all the work under this contract.

In the computation of the number of consecutive working days, the time during which the completion of the work has been



EXHIBIT C-212 (*continued*):

10 delayed in consequence of the condition of the weather, or tides, or by any act or omission of the party of the first part or during such period as the work has been suspended by written order of the President, or delays for which the Contractor is not responsible (all of which will be determined by the President, who shall certify to the same in writing, and whose determination and certificate thereof shall be binding and conclusive upon the Contractor), will be allowed to the Contractor and will be deducted in computation. Sundays and also holidays on which no work is done, will also be excluded from said computation. In case a larger amount of rock excavation than is set forth in the Engineer's Estimate shall be necessary, an allowance of one day will be made for each 25 cubic yards of such excess of rock excavated and removed in accordance with the measurement of rock allowed by the specifications. If the completion of the work to be done under this contract shall require work or materials or both in greater amounts than those set  
20 forth in the Engineer's Estimate of Quantities, or if unforeseen obstacles are encountered in the prosecution of said work then the time which the Contractor is delayed on account thereof will be determined and allowed by the President at the completion of the work, upon the receipt by him of a written application from the Contractor for such determination and allowance. No demand by the Contractor that the President determine and certify the matters aforesaid shall be of any effect whatsoever unless the same be made in writing and  
30 duly served upon the President prior to the filing in the office of the Comptroller of The City of the final certificate of the completion and acceptance of the work.

End of time period.

The time shall run against this contract until all work called for in this contract is completed to the satisfaction of the Engineer.

Liquidated damages.

40 XV. In case the Contractor shall fail to complete the work hereunder in accordance with the contract within the time aforesaid, he agrees to pay to The City the sum of Fifty Dollars (\$50.00) for each and every day the time consumed in said performance and completion exceeds the time hereinbefore allowed for that purpose; which said sum, in view of the difficulty of ascertaining the loss which The City will suffer by reason of delay

EXHIBIT C-212 (*continued*) :

in the performance of the work hereunder, is hereby agreed upon, fixed and determined by the parties hereto as the liquidated damages that The City will suffer by reason of said delay and default, and not as a penalty; and The City shall and may deduct and retain the amount of such liquidated damages out of the moneys which may be due or become due to the Contractor under this contract.

10

Work no provided for in contract.

XVI. If, before the completion of the work contemplated herein, it shall become necessary to do any other or further work on or near the line thereof than is provided for in this contract, the Contractor will not in any way interfere with or molest such person or persons as the President may employ to do such work, and will carry on the work under this contract in such manner as may be ordered so as to afford all reasonable facilities for doing such other or further work; and no damage or claim by the Contractor shall be allowed therefor, except such allowance of time for delay as the President may deem reasonable.

20

President's right to suspend work.

XVII. The President is hereby authorized to suspend the whole or any part of the work herein contracted to be done, if he shall deem it for the interest of The City so to do. During such suspension the trenches shall be backfilled, if required, and the roadways and pavements over the same satisfactorily restored, and all materials upon the work shall be neatly piled so as not to obstruct public travel, or shall be removed from the line of the work, if directed.

30

No damages to be claimed for delay due to other contracts.

XVIII. Should postponement or delay be occasioned by the precedence of paving or other contracts, which may have been either let or executed before the opening of the bids for this contract, the Contractor will make no claim for damages therefor nor for any damages in consequence of the street or the adjoining sewers not being in the condition contemplated by the parties at the time of making the contract; if, however, the Contractor shall be delayed in performance of his work by reason of the street or the adjoining sewers not being in such condition, or by reason of the work or any work or any part thereof being suspended as

40

EXHIBIT C-212 (*continued*):

herein before provided, such allowance of time on account thereof as the President shall deem reasonable will be made.

10 If the work be suspended or delayed by any act or omission of The City, or for the reason that The City does not own or has not obtained possession of, or the right to enter upon the land upon which the work is to be performed, or because of any act or omission of any employee or agent of The City or any other Contractor performing work for The City, the President, or whoever is directed by this contract, to make the certificate in reference to time, shall make such allowance of time for the completion of the work as the Engineer shall certify that the work has been delayed. No allowance whatever as damages will be made to the Contractor because of any such suspension or delays, and no claim shall be made by the Contractor on account thereof.

Allowance of time for delays.

20 XIX. No allowances of time for delays under the provisions of this contract nor the delivery and acceptance of any articles or materials called for by this contract, shall be deemed to be a waiver by the President of the right to abrogate this contract for abandonment or delay in the manner hereinafter provided.

Right to construct sewers, etc.

Permits for connections.

30 XX. Prior to the commencement of and during the progress of the work under this contract the President shall have the right to undertake, and to grant permits for, any construction, reconstruction, and repairing of any pipes, sewers, basins, subway ducts and railway tracks, and any appurtenances thereof located on and adjoining the line of the work, and for any connections with and additions to such pipes, etc., and for such purposes the President is hereby authorized to suspend work on any part of this contract, in accordance with Section XVII., and the Contractor will not interfere with nor place any obstructions in  
40 the way of any person or persons who may be engaged upon such work. The President is hereby authorized to connect, by contract or otherwise, any sewers and drains with the work built under this contract and to grant permits to any person or persons to make connections therewith at any time before it is completed; and the Contractor will not interfere with nor place obstructions in the way of such persons as may be employed in building such

EXHIBIT C-212 (*continued*):

sewers and drains, or in making such connections, and the flow from such sewers, drains and connections will be permitted by the Contractor to discharge into the work built under this contract and the Contractor agrees to make no claim for compensation, damages or delay on account thereof. The issuance of such permits shall not be considered as an acceptance by The City of that part of the sewer into which such connections empty or  
10 flow, nor shall the Contractor on account thereof be relieved from the cleaning of the sewer prior to the final examination of the work. No new connections or drains will be allowed to be made or joined to the work built under this contract unless a permit therefor has been duly issued by the President, which permit shall be shown in all cases to the Inspector of the work.

Flow of sewer and drains, etc.

Drains, etc., interrupted.

20 Sewers, etc., to be kept clean.

XXI. The Contractor will provide at his own cost for the flow of the sewers, drains and water courses interrupted during the progress of the work, and will immediately cart away and remove all offensive matter. The flow throughout the entire length of such sewers and appurtenances as are to be replaced by the work to be done under this contract will be maintained by the Contractor. The Contractor will remove at his own cost and expense all such bulkheads, as may be directed, from the sewers  
30 with which the work under this contract will be connected. When the permanent removal of any existing pipe sewers and appurtenances and pipe drains is necessitated by the work to be done under this contract, such of the materials of such structures as may be directed shall be carefully taken up, piled and left at the disposal of The City, and shall not be used in the work, and the remainder shall be removed from the work and disposed of by the Contractor. Wherever the work to be built under this contract, or the trenches in which it is to be constructed, follow the line, and occupy the place of or intercept the Fire Alarm Telegraph  
40 System of The City, or any existing sewers, drains, culverts, basin connections or house connections for which permits may have been granted prior to the opening of the bids for this contract, the Contractor will make the same good, and will rebuild the Fire Alarm Telegraph System of The City and also said sewers, drains, culverts and connections, or connect the same with the sewer built under this contract, whichever he may be directed to

EXHIBIT C-212 (*continued*):

do, at his own cost and expense. All sewers, drains, culverts, basins and basin connections rendered unnecessary by the construction of the work herein contemplated, shall be thoroughly broken up, except as otherwise hereinbefore provided, and satisfactorily filled in by the Contractor at his own cost and expense, as shall also all portions of water courses in, through or across any street that may be rendered unnecessary by the construction of this work. During the progress of the work, and until the completion and acceptance thereof, the sewers, drains, basins, culverts and connections built under this contract shall be kept thoroughly cleaned throughout, and shall be left clean.

Sale of sand or earth.

XXII. The Contractor will not sell, nor permit to be removed from the line of the work, before the trench shall have been backfilled, any building sand or earth thrown up, except upon written permission, and then only so much as shall remain after reserving a sufficient quantity to backfill the trench and complete the paving; and the Contractor will, in all cases, backfill the trench with the same material thrown out, provided it be suitable, then the same shall be removed from the line of work, and suitable material procured and used for backfilling the trench, and when required sand of proper quality and depth shall be spread on the surface to receive the pavement.

The Contractor hereby agrees that all excavated material and materials of construction placed by him or for him upon private property; unless by written permission of the owners or lessees thereof, will be removed by him and all damage to said property remedied by him at his own cost and expense. Unless such materials are removed and such damage remedied by the Contractor within 48 hours after the receipt by him of a written notice so to do, he agrees that the President shall be and is hereby authorized to dispose of such materials, and to remedy such damage and to deduct the expense thereof from the moneys due or to become due under this contract.

Contractor to give personal attention to work.

Not to assign or sublet.

XXIII. The Contractor will give his personal attention constantly to the faithful prosecution of the work; he will not assign, transfer, convey, sublet or otherwise dispose of this contract, or his right, title or interest in or to the same, or any part

EXHIBIT C-212 (*continued*):

thereof, without the previous consent, in writing, of the President, indorsed hereon or hereto attached; and he will not assign, by power of attorney or otherwise, any of the moneys to become due and payable under this contract, unless by and with the like consent, signified in like manner. If the Contractor shall, without such previous written consent, assign, transfer, convey, sublet or otherwise dispose of this contract, or of his right, title or interest therein, or any of the moneys due or to become due under this contract, to any other person, company or other corporation, this contract may, at the option of the President, be revoked and annulled, and The City shall thereupon be relieved and discharged from any and all liability and obligations growing out of the same to the Contractor, and to his assignee or transferee; provided that nothing herein contained shall be construed to hinder, prevent or affect an assignment by the Contractor for the benefit of his creditors, made pursuant to the statutes of the State of New York; and no right under this contract, or to any money to become due hereunder, shall be asserted against The City, in law or in equity, by reason of any so-called assignment of this contract, or any part thereof, or of any moneys due or to become due hereunder, unless authorized as aforesaid by the written consent of the President.

When Contractor is absent.

Disorderly workmen.

Contractor to provide assistance.

30           XXIV. Whenever the Contractor is not present on any part of the work where it may be necessary to give directions, orders will be given by the Engineer to and shall be received and obeyed by the superintendents and foremen who may have immediate charge of the men employed on the particular work in relation to which the order may be given; and at any time, if a foreman or workman employed by the Contractor shall be declared by the Engineer to be disobedient, incompetent or disrespectful, the Contractor, on receiving written notice to that effect, will forthwith dismiss such person, and will not again employ him on any part of the work. The Contractor will provide all necessary assistance for the Engineer when required, without charge or expense to The City or Engineer.

Contractor to plank and bridge for traffic.

40           XXV. The Contractor will observe the law and all ordinances of The City in relation to obstructing the streets, keeping

EXHIBIT C-212 (*continued*):

open passageways and protecting the same where they are exposed and would be dangerous to the public travel, and such passageways shall, as may be required, be planked or bridged by the Contractor, at his own expense.

Guards and lights.

10 Indemnification of City.

20 XXVI. During the performance of the work herein set forth the Contractor will place proper guards upon and around the same for the prevention of accidents, and at night will put up and keep suitable and sufficient lights, and he will indemnify and save harmless The City against and from all claims, suits and actions, of every name and description, brought against it, and all costs and damages to which it may be put on account or by reason of any injury or alleged injury to the person or property of another, resulting from the prosecution of the work or from negligence or carelessness in the performance of the work, or in guarding the same, or from any improper materials used in its prosecution, or by or on account of any act or omission of the Contractor or his agents; and the Contractor agrees that the whole or so much of the moneys due to the Contractor under and by virtue of this contract, as shall or may be considered necessary by the Comptroller of The City, may, as its option, be retained by The City until all such suits and claims for damages as aforesaid shall have been settled, and evidence to that effect furnished to the satisfaction of the Comptroller.

30 Contractor to make repairs.

40 XXVII. In case any injury is done to property along the line of the work, or to any sidewalk, in consequence of any act or omission on the part of the Contractor or his employees or agents in carrying out any of the provisions or requirements of this contract, the Contractor will make such repairs as are necessary in consequence thereof, at his own expense and to the satisfaction of the President, and in case of failure on the part of the Contractor to promptly make such repairs, they may be made by the President, and the expense thereof will be deducted out of the moneys due or to become due to the Contractor under this contract.

Loss or damage to be assumed by Contractor.

XXVIII. The Contractor agrees to assume, and to make no claim on account of, any and all loss or damages arising out

EXHIBIT C-212 (*continued*):

of the nature of the work to be done under this contract, or from any unforeseen obstructions or difficulties which may be encountered in the prosecution of the same, or from the action of the elements, or from incumbrances on or near the line of the work, or from the breaking of water mains, sewer and gas mains on or near the line of the work.

10 Claims for labor, etc.

20 XXIX. The Contractor will pay promptly, and in cash, for all labor employed upon and all materials furnished and used in the work, and if at any time before or within thirty days after the whole work herein agreed to be performed has been completed and accepted by The City, any person or persons claiming to have performed any labor or furnished any materials toward the performance and completion of the contract, shall file with the President and with the Comptroller of The City any such notice as is described in the Lien Law or any act of the Legislature of the State of New York, then, and in every such case, The City shall retain—anything herein contained to the contrary thereto notwithstanding—from the moneys under its control, and due or to become due under this contract, so much of the moneys as shall be sufficient to pay off, satisfy and discharge the amount in such notice alleged or claimed to be due to the person or persons filing such notice, together with the reasonable cost of any action or actions brought to enforce such claim or the lien created by the filing of such notice. The money so retained shall be retained by  
30 The City until the lien thereon created by the said act and the filing of the said notice shall be discharged, pursuant to the provisions of the said act.

Contractor will prevent filing of liens, etc.

40 XXX. The Contractor will not, at any time, suffer or permit any lien, attachment, or other incumbrances, under the law of this State or otherwise, by any person or persons whomsoever, to remain on file in the Finance Department or at the office of the City Department having supervision of the work against any money due or to become due for any work done or materials furnished under this contract, or by reason of any other claim or demand against the Contractor; and that any such lien, attachment, or other incumbrance, until it is removed, shall preclude any and all claim or demand for any payment whatsoever under or by virtue of this contract.



EXHIBIT C-212 (*continued*):

Evidence of satisfaction of liens, etc.

10 The Contractor further agrees that he will present to the party of the first part satisfactory evidence that all just liens, claims and demands of his employees, or of parties from whom materials used in the construction of the work may have been purchased or procured are fully satisfied and that the materials furnished and work done under this contract are fully released from all such liens, claims and demands before said party of the second part will demand or shall receive the sums due one final payment under this contract.

Notice to gas companies, etc.

Not to hinder other companies.

20 XXXI. The Contractor will give notice in writing to all gas, railroad and other companies owning or controlling any pipe, tracks or other structures which during the progress of the work may be affected by the prosecution of the same so that said companies may protect or remove their structures, and he will not cause any hindrance to, or interference with, any such gas company or other company or companies in protecting their said pipes, tracks or other structures, nor in removing or otherwise protecting and replacing the main and service pipe, lampposts, lamps, tracks or other structures where necessary, but the Contractor will suffer the said company or companies to take all such measures as are requisite for the purpose aforesaid. But if said 30 gas, railroad, or other companies, within five days after receipt of such notice, fail to support, remove or otherwise protect their structures, the Contractor will upon the approval of the President protect or remove the same, it being expressly understood that the cost thereof shall not be a charge against The City, but shall be a matter for adjustment between the Contractor and the company or companies concerned.

Pipes, conduits, etc., of private companies.

40 XXXII. It is hereby agreed that The City is not responsible or liable for the support, protection or reconstruction of such gas pipes, conduits, water pipes, tracks or structures owned by private companies enjoying special franchises or occupying any portion of the street or way on or below the surface in its streets or ways, as the Contractor admits that he has carefully examined the location of work, has made special inquiry at the offices of the companies owning, controlling or operating said

EXHIBIT C-212 (*continued*):

10 pipes, conduits, tracks and structures, and he has determined to his satisfaction the character, size, location and length of such pipes, conduits, tracks and structures; that he has inspected the public records of the various City Departments having cognizance and control of pipes, conduits, and other subsurface structures, and of The City's water pipes, conduits and sewers, and he has made such further personal inspection and investigation as he deemed proper to determine the correctness of the information so obtained; and he clearly understands that The City does not insure the accuracy of such reports or information, and agrees that he will not make any claim against The City for damages or extra work caused or occasioned by his relying upon such records, reports or information furnished by any City Department or any companies, either as a whole or in part.

Protection and restoration of pipes, etc., of private companies.

20

XXXIII. The Contractor agrees to confer with and to make to or entertain an offer from such private companies as own the said pipes, conduits, tracks or structures, except such railroad companies whose tracks or other railroad structures are upon or within a right of way owned by said companies (see Section XXXIV); and the Contractor further agrees to enter into an agreement with said companies by what terms and at what prices the support, protection, removal and reconstruction of the pipes, conduits, tracks and structures will be undertaken and accomplished, and in the event of the failure to make such an agreement with said companies, he will not complain nor make any demand on The City for additional compensation or pay for supporting, protecting, removing or restoring the said pipes, conduits, tracks or other structures.

30

Contractor to notify department of water supply.  
Gas and Electricity.

40 XXXV. At least twenty-four hours before breaking ground, for the purpose of constructing the work of this contract, the Contractor agrees to give notice thereof in writing to the Department of Water Supply, Gas and Electricity.

City's water pipes, etc.

XXXVI. If upon excavating it shall be found that any existing water pipes or appurtenances owned or controlled or operated by The City follow the lines, or occupy the place, of the

EXHIBIT C-212 (*continued*) :

sewer or sewers and appurtenances to be laid or built as shown on the plan, such existing water pipes and appurtenances will be removed and relaid, or rebuilt, by and at the cost of the Department of Water Supply, Gas and Electricity of The City of New York; if, however, in order to facilitate the work to be done under this contract, it be found desirable to temporarily remove any water pipes or appurtenances owned or controlled or operated by  
10 The City, the removal and replacing in their original positions of such water pipes and appurtenances will be done by the Department of Water Supply, Gas and Electricity for the Contractor at his cost and expense.

Protection of City's water pipes, etc.

XXXVII. The Contractor agrees to protect all water mains and service water pipes owned, controlled or operated by The City which may be affected in any manner by the work done  
20 under this contract, except as hereinbefore provided, and to protect all such water and service pipes from freezing, and if he fails to do so, the Commissioner of Water Supply, Gas and Electricity is hereby authorized to protect such main and service pipes, or in the event of their having suffered injury to replace such pipes, and recalk and repair the same immediately, as the work progresses, and the cost thereof shall be charged to the Contractor; the cost so charged shall be deducted from any sum or sums due or to become due to the Contractor under this contract, and in  
30 case such sum or sums shall be insufficient to cover such cost, the Contractor will be liable for the balance.

Protection of gas and water mains and pipes, etc.

XXXVIII. The Contractor agrees to sustain in their places and protect from injury all water or gas mains, conduits, subways or service pipes, steam pipes and pneumatic pipes, and all sidewalks, curbs, stoops, areas, and all other property in the vicinity of his work, from direct or indirect injury by caving or  
40 otherwise, and he hereby assumes all expenses for direct or indirect damage which may be occasioned by injury to any of them, and he agrees to have at all times a sufficient quantity of timber and other necessary materials and appliances on the ground, and will use the same, as required, for bracing and sheeting the sides and ends of excavations, and for sustaining and supporting any and all pipes, conduits, subways, lamp-posts and lamps or other structures that are undermined, weakened, endangered or threatened; and in case any damage or injury shall or may result to

EXHIBIT C-212 (*continued*):

10 said pipes, conduits, subways, lamp-posts and lamps and other works or structures of any gas, electric, railroad or other company whatsoever, or to any private property, through or by reason of any negligence, wilfulness, carelessness or want of skill on the part of the Contractor, his agents or servants, the Contractor hereby agrees to pay such amount as may be sufficient to cover the expense and damages occasioned by such negligence, wilfulness, carelessness or unskillfulness, and that such amount shall be charged against him; and the President is hereby authorized to deduct and retain from any moneys which may be due, or which shall become due, under this Contract, a sum sufficient, in his judgment, to cover the cost of making good any such damages, expense or loss, and to apply said sum so deducted and retained to the requisite repairs or renewals, or to reimburse the parties damaged or injured.

Old water and gas pipes.

20 XXXIX. All iron, water and gas pipes which it becomes necessary to remove shall be considered the property of The City and will be piled by the Contractor in such part or parts of the streets as may be directed, unless notice to the contrary is given him in writing, in which case he will remove the same at his own expense.

Change of grade.

30 XL. In case the grade of the street shall be changed during the progress of the work, the Contractor will conform to the altered grade at the contract prices, as far as they are applicable; and for any work for which there is no contract price, the provisions in relation to work not provided for in this contract shall apply.

Measurement of work and material.

40 XLI. All quantities of work and materials to be paid for will be measured and determined, according to the plan and the working lines that may be given, and the specifications, when the work conforms thereto. No allowance will be made on any part of the work for any excess above the quantities required by such plan, lines and specifications. Should the dimensions of any part of the work, or of the materials, be less than those required by the plan, the actual quantities only will be allowed in measurement.

EXHIBIT C-212 (*continued*):

Payment on acceptance of work.

XLIII. The Contractor will not be entitled to demand or receive payment for any portion of the work or materials unless the same has been fully completed in the manner set forth in this contract, and such completion duly certified by the Engineer in Charge of Sewers, and until each and every one of the stipulations  
10 hereinbefore mentioned is complied with, and the work completed to the satisfaction of the President and accepted by him, and the final certificate of completion and acceptance thereof, signed by the President and said Engineer, filed with the Comptroller. The City will pay to the Contractor on or before the expiration of thirty days from the filing of said final certificate of completion and acceptance in the office of the Comptroller, the whole of the moneys accruing to the Contractor, under this contract, except  
20 such sum or sums of money as shall be retained under any of the provisions herein contained for that purpose, or in any law of the State, or under any ordinance of The City passed prior to the date of this contract and now in force.

Moneys to be retained for repairs to pavements, etc.

It is hereby agreed that The City shall be and is hereby authorized to retain out of the moneys payable to the Contractor, for a period of six months from the date of the final completion and the acceptance by the President of the work done under this contract, the sum of \$5,000 00/100.

30 Repairs to pavement, etc., made by President.

It is hereby further agreed that if at any time during the said period of six months the pavements, sidewalks, crosswalks, curbs, etc., on the line of the sewer and appurtenances and adjacent thereto, affected by the work under this contract, shall, in the opinion of the Engineer, require repairing on account of any settlement or other defect due to improper workmanship below the pavements, sidewalks, crosswalks, curbs, etc., the President shall have the right to employ such person or persons as he  
40 may deem proper to make such repairs and to pay the expenses thereof out of the said certain sum retained by The City for that purpose as herein before provided.

Payment of retained moneys to be made after six months.

It is hereby further agreed that The City, upon the expiration of the said period of six months, will pay to the said party

EXHIBIT C-212 (*continued*):

of the second part the whole or such part of the moneys retained as may remain after the expenses of making said repairs, in the manner aforesaid, shall have been paid therefrom.

Termination of six months' period.

10 It is hereby further agreed that if the termination of the said period of six months after the completion and acceptance of the work done under this contract shall fall within the months of December, January, February or March, then and in that case the said months of December, January, February and March, or such part thereof as the President may determine, will not be included in the computation of said period of six months.

Final certificate to control.

20 XLIII. The action of the Engineer in Charge of Sewers, by which the Contractor is to be bound and concluded according to the terms of this Contract shall be that evidenced by said Engineer's final certificate, all prior certificates upon which eighty-five per centum (85%) payments may have been made being merely estimates, and subject to the corrections of such final certificate, which may be made without notice to the Contractor thereof, or of the measurements upon which the same is based.

85% payments.

30 XLIV. In case the amount of this contract, based on the Engineer's estimate and the contract prices, shall be five thousand dollars (\$5,000.00) or over, payment will be made to the Contractor by monthly installments of eighty-five Per Cent. (85%) of the estimated value of the work performed, provided the work is being prosecuted in conformity with the provisions of the contract, and in a manner satisfactory to the Engineer, in which case, however, the quantity returned shall be such that the amount paid will be fairly due and in accordance with the provisions and stipulations of this contract; provided, the amount of work done on each installment shall not be less than fifteen hundred dollars (\$1,500.00); and provided that The City may at all times reserve and retain out of said installments, or any of them, all such sum or sums as by the terms hereof or any act of the Legislature of the State of New York, or of any ordinance of The City of New York, now in force, it is or may be authorized to reserve or retain; and provided that where the Contractor, although the lowest bidder in the gross calculation, is to receive unusual or extraordinary prices for any of the different items of the work when considered

40

EXHIBIT C-212 (*continued*):

separately, nothing herein contained shall be construed to affect the right of the President to determine the amount that may be due from time to time, not necessarily by the prices agreed upon in this contract, but by causing an estimate to be made of the value of the work done, taking as a basis of the calculations the whole amount of money that will have become due, according to the terms of this contract, when the whole work shall be completed.

If abandoned, etc.

Contract may be declared abandoned.

Completion of work to be undertaken by President.

XLV. The Contractor hereby agrees that if the work to be done under this contract shall be abandoned by him, or if this contract shall be assigned or the work sublet by him otherwise than as provided by the terms hereof, or if at any time the Engineer shall be of the opinion, and shall so certify, in writing, to the President that the performance of the contract is unnecessarily or unreasonably delayed, as evidenced by its actual rate of progress compared with the required progress (See Section XIV); or that the Contractor is wilfully violating any of the conditions or covenants of this contract or the specifications thereof, or is executing the same in bad faith, or not in accordance with the terms thereof, or that the work is not fully completed within the time designated in this contract for its completion, the President may declare this contract or any part thereof abandoned and notify the Contractor to discontinue all work or any part thereof under this contract, by a written notice to be served upon the Contractor either personally, or by leaving said notice at his residence, or with his agent in charge of the work, or in the manner provided in Section XLVI., or with any employee found on the work, and the Contractor agrees to thereupon discontinue said work or such part thereof, and he further agrees that the President shall thereupon have the power to contract for the completion of the contract in the manner prescribed by law, or to place such and so many persons as he may deem advisable, by contract or otherwise, to work at and complete the work declared abandoned, and to use such materials as he may find upon the line of the work, and to procure other materials for the completion of the same, and to charge the expense of said labor and materials to the Contractor; and it is further agreed that the expense so charged shall be deducted and paid by The

EXHIBIT C-212 (*continued*):

10 City out of such moneys as may be due or may at any time there-  
after become due to the Contractor under and by virtue of this  
contract, or any part thereof. And in case such expense shall  
exceed the amount which would have been payable under the con-  
tract if the same had been completed by the Contractor, he shall  
and will pay the amount of such excess to The City. Should the  
Contractor fail to complete the work as stipulated herein, or  
20 should the contract be declared abandoned, he agrees to forfeit  
all money earned, but unpaid whether certified or not at the time  
of the abandonment of the contract. In case such expense shall  
be less than the sum which would have been payable under the  
Contract if the same had been completed by the Contractor, he  
agrees to forfeit all claim to the remainder; and when any par-  
ticular part of the work is being carried on by the President, by  
contract or otherwise, under the provisions of this clause of the  
contract, the Contractor agrees to continue the remainder of the  
work in conformity with the terms of this contract and in such  
30 manner as in nowise to hinder or interfere with the persons or  
workmen employed, as above provided, by the President, by con-  
tract or otherwise, to do any part of the work, or to complete the  
same under the provisions of this section of the contract.

Notice to Contractor.

30 XLVI. It is agreed that the residence or place of business,  
given in the bid upon which this contract is founded, is hereby  
designated as the place where all notices, letters and other com-  
munications shall be served, mailed or delivered. It is further  
agreed that any notice, letter or other communication addressed  
to the Contractor and delivered at the above-named place, or  
deposited in a post-paid wrapper in any post-office box regularly  
maintained by the post-office, shall be deemed sufficient service  
thereof upon the Contractor. It is also further agreed that the  
place named may be changed at any time by an instrument in  
writing, executed and acknowledged by the Contractor and deliv-  
ered to the President. It is also further agreed that nothing  
40 herein contained shall be deemed to preclude or render inoper-  
ative the service of any notice, letter or other communication upon  
the Contractor personally.

Labor law.

XLVII. The Contractor agrees that he will comply with  
the provisions of "The Labor Law." He further agrees that no  
laborer, workman or mechanic in the employ of the Contractor,



EXHIBIT C-212 (*continued*):

10 sub-contractor or other person doing or contracting to do the whole or a part of the work contemplated by the contract, shall be permitted or required to work more than eight hours in any one calendar day, except in cases of extraordinary emergency, caused by fire, flood or danger to life or property; that the wages to be paid for a legal day's work to all classes of such laborers, workmen or mechanics upon public work or upon any material  
10 to be used thereupon shall not be less than the prevailing rate for a day's work in the same trade or occupation in the locality where such public work is being constructed. Each such laborer, workman or mechanic shall receive the prevailing rate of wages. This contract shall be void and of no effect, unless the person or corporation, making or performing the same shall comply with the provisions of section 14 of the Labor Law.

No estoppel.

20 XLVIII. The City shall not, nor shall any Department or officer thereof be precluded or estopped by any return or certificate made or given by the President, any Engineer or other officer, agent or appointee of The City under any provision of this contract from at any time (either before or after the final completion and acceptance of the work and payment therefor pursuant to any such return or certificate) showing the true and correct amount, quality and character of the work done and materials furnished by the Contractor, or any other person under this contract, or from showing at any time that any such return or  
30 certificate is untrue and incorrect or improperly made in any particular, or that the work and materials, or any part thereof do not in fact conform to the contract; and The City shall not be precluded or estopped, notwithstanding any such return or certificate or payment in accordance therewith, from demanding and recovering from the Contractor such damages as it may sustain by reason of his failure to comply with the contract.

Understanding of plans and specifications.

40 XLIX. The Contractor hereby distinctly and expressly declares and acknowledges that, before the signing of this contract, he has carefully read the same, and the whole thereof, together with and in connection with the plan and specifications, and that he has made such examination of this contract and of said plan and specifications, and the location where said work is to be done, and such investigation of the work required to be done, and in regard to the material required to be furnished, as to enable him to thoroughly understand the intention of the same,

EXHIBIT C-212 (*continued*):

and the requirements, covenants, agreements, stipulations and restrictions contained in this contract and in said plan and specifications; and distinctly agrees that he will not hereafter make any claim or demand upon The City, based upon or arising out of any alleged misunderstanding or misconception on his part of the said requirements, covenants, stipulations and restrictions: and that any information given to the Contractor by the Engineer or others as to the quantities in the work, prior to, or during the progress of the work, shall have no bearing or effect whatsoever, upon the total amount of work to be paid for, in the final settlement.

Chap. 478, Laws 1916.

This contract shall be void and of no effect unless the person or corporation making or performing the same shall secure compensation for the benefit of, and keep insured during the life of this contract, the employees engaged thereon, in compliance with the provisions of Chapter 41 of the laws of 1914, known as the Workmen's Compensation Law, and acts amendatory thereof.

Substitution of sureties.

L. Should the Comptroller at any time deem the sureties under the contract to be unsatisfactory he shall notify the Contractor to that effect and the Contractor shall when so notified forthwith submit in substitution new sureties acceptable to the Comptroller. No further payment shall be deemed due or shall be made until the new sureties shall qualify and be accepted by the Comptroller.

IN WITNESS WHEREOF, The President of the Borough of Queens has hereunto set his hand for and on behalf of The City of New York, and the Contractor has also hereunto set his or its hand the day and year herein first above written; and the President and Contractor have executed this agreement in triplicate; one part of which is to remain with the President, one other to be filed with the Comptroller of The City of New York, and the third to be delivered to the Contractor.

FRANK X. SULLIVAN,  
Acting President of the Borough of Queens.

PORTER & DE WITT,  
By W. J. Porter.

(Contractor (s)).

EXHIBIT C-212 (*continued*) :

KNOW ALL MEN BY THESE PRESENTS, That we Porter and De Witt, as principal; and United States Fidelity and Guaranty Company, London and Lancashire Indemnity Company, Maryland Casualty Company and New Amsterdam Casualty Company as surety are held and firmly bound unto The City of New York, in the sum of THREE HUNDRED THOUSAND DOLLARS, lawful money of the United States of America, to be paid unto THE CITY OF NEW YORK, or to its certain attorneys, successors or assigns; for which payment, well and truly to be made, we and each of us do bind ourselves, and our several and respective heirs, executors, administrators and assigns, jointly and severally, firmly by these presents.

Signed, sealed and dated this 27th day of August, 1919.

WHEREAS, The above bounden Porter and De Witt by an instrument in writing, under their hands, and bearing even date with these presents, one part whereof is hereto annexed, have contracted with The City of New York, by the President of the Borough of Queens, to furnish all the labor and materials, and to excavate for, build, construct and in all respects complete, together with all the work incidental thereto, as is fully and at large set forth and described in the contract aforesaid.

NOW, THEREFORE, The condition of the above obligation is such that if the said above bounden Porter and De Witt and its, his or their heirs, executors, administrators and assigns, or any or either of them, shall well and truly, and in a good, sufficient and workmanlike manner, perform or cause to be performed the said contract, and each and every of the covenants, promises, agreements and provisions therein contained on their part to be performed, and complete the same within the period therein stipulated, and in each and every respect comply with the conditions therein contained, then this obligation to be void; otherwise, to remain in full force and virtue.

Porter & De Witt [L. S.]

40 By WM. J. PORTER [L. S.]

United States Fidelity and  
Guaranty Company [L. S.]

By ALONZO GORE OAKLEY [L. S.]  
Attorney-in-fact.

Attest: G. MARSAN,  
Attorney-in-fact.

EXHIBIT C-212 (*continued*):

London & Lancashire Indemnity Company  
of America

By J. E. SWEENEY,  
Attorney-in-fact.

Maryland Casualty Company,

10

By F. MONIS MILLER,  
Attorney-in-fact.

New Amsterdam Casualty Company,

By C. A. BROWN,  
Vice-President.

Attest: WM. L. MCGINTY,  
Assistant Secretary.

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\_\_\_\_\_  
The City and State of New York, ss.  
County of Queens

On this 27th day of August, 1918, before me personally came Wm. J. Porter, a member of the firm of Porter & De Witt, to me personally known and known to me to be the same person described in any who executed the foregoing bond or obligation, and severally acknowledged that he executed the same.

30

WILLIAM P. BUCKLEY,  
Commissioner of Deeds, New York City.

\_\_\_\_\_  
FUNDS

PRESIDENT'S CERTIFICATE

40 It is hereby certified that the estimated cost of the work and materials required by the within contract is SIX HUNDRED AND FIFTY-NINE THOUSAND TWO HUNDRED AND EIGHTEEN AND 30/100 DOLLARS (659,218.30) and is chargeable to the Street Improvement Fund of The City of New York.

FRANK X. SULLIVAN,  
Acting President of the Borough of Queens.

The City of New York, September 12th, 1919.

EXHIBIT C-212 (continued) :

SPECIFICATIONS

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TRENCHES

Length of trench.

- 10        1. Unless written permission to the contrary is given, the trench shall be excavated to its full depth for a distance of at least 20 feet more than the minimum length of sewer permitted to be laid in it. (See paragraphs 159 and 182.) Unless otherwise directed each trench for basin connections and house connection drains shall be fully excavated for its entire length before any pipes are laid therein.

Sheeting and bracing.

- 20        2. Where necessary the sides of the trenches and excavations shall be supported by adequate sheeting and bracing. Steel sheeting may be used only where directed. Sheeting and bracing will be paid for only when left in place by written order, in which event the amount left in place will be paid for at the contract price for such material. Unless specially permitted sheeting against which concrete is placed shall not be removed and will not be paid for. The Contractor will be held accountable and responsible for the sufficiency of all sheeting and bracing used, and for all damage to persons or property resulting from the improper quality, strength, placing, maintaining  
30 or removing of the same.

Sheeting in soft material.

3. Where the material to be excavated is of such a character as to render it necessary, the sheeting shall be closely driven and to such depth below the bottom of the sewer as may be directed.

Tunneling.

- 40        4. All work shall be done in open trenches or excavations; no tunneling shall be done except with the consent of the Engineer.

Trees and stumps.

5. The Contractor shall grub and clear the surface over the trenches and excavations of all trees and stumps and remove the same from the work.

EXHIBIT C-212 (*continued*):

Material to be disinfected.

6. If required, any or all of the excavated material shall be satisfactorily disinfected or deodorized or immediately removed from the work.

Roadway, sidewalks, etc., to be kept clear.

- 10        7. The excavated material and materials of construction shall be so deposited, and the work shall be so conducted as to leave open and free for traffic all crosswalks. Street hydrants, water gates, fire alarm boxes and letter boxes shall be kept accessible for use. During the progress of the work the Contractor shall maintain such crosswalks, sidewalks and roadways in satisfactory condition, and the work shall at all times be so conducted as to cause a minimum of inconvenience to public travel, and permit of safe and convenient access to private and public

20        Surplus material.

8. If all of the excavated material cannot be stored on the street in such a manner as to maintain the traffic conditions hereinbefore specified, the surplus shall be removed from the work and stored. After the construction of the sewer, so much of this material as is of satisfactory quality and necessary for the purpose shall be brought back and used for backfilling the trench.

- 30        9. The material excavated, if suitable for the purpose, shall be used to backfill the trench in which the sewer has been built, and neither the excavated material nor materials of construction shall be stored on the roadway or sidewalks.

Fence.

10. Where necessary a suitable fence shall be placed along the sides of the trench to keep the street safe for traffic.

40        Temporary bridges.

11. Where any crosswalk is intersected by the trench, it shall be temporarily replaced by a substantial timber bridge not less than 3 feet wide, with side railings. Where required, suitable temporary bridges for vehicles shall be provided and maintained across the trench.

EXHIBIT C-212 (*continued*):

Disposal of water from trenches.

12. The Contractor shall at all times during the progress of the work keep the trenches and excavations free from water. The water from the trenches and excavations shall be disposed of in such a manner as will not cause injury to the public health, nor to public or private property, nor to the work completed or in  
10 progress, nor to the surface of the streets, nor cause any interference with the use of the same by the public.

Cost to be covered.

13. The cost of all labor required to be done and all materials required to be furnished in the performance of all the work specified in paragraphs 1 to 12 inclusive, except as otherwise provided, shall be covered by all the contract prices for all the items for which there are contract prices.

20

EARTH EXCAVATION.

14. Earth excavation shall include the removal of all material other than rock as hereinafter defined.

14a. The Contractor shall deposit with the Department of Parks, Borough of Queens, the sum of Two Thousand One Hundred and Fifty Dollars (\$2,150.00) in payment for eighty-six (86) new pin oak trees of a diameter from 5" to 6" to be  
30 planted by the Park Department along the line of Myrtle Avenue from Whitestone Avenue to Lawrence Street for the purpose of replacing the existing trees destroyed during the construction of the sewers.

The cost of the trees is to be included in the price bid, per linear foot of sewers, for the sewers along Myrtle Avenue between Whitestone Avenue and Lawrence Street.

Width of trench for sewers, etc.

15. The minimum widths of trenches in earth, for pipe  
40 sewers, basin connections, house connection and other drains not over 18 inches in diameter, shall be such as to give a clearance inside the sheeting of 8 inches on each side of the pipe, and for those of larger diameters 10 inches on each side of the pipe, exclusive of spurs and hubs; and all such trenches shall have a clear width equal to the maximum width of the cradles of the sewers to be laid in them, when such cradles are wider

EXHIBIT C-212 (*continued*):

than the minimum widths herein specified. The minimum widths of trenches in earth, inside the sheeting, for other sewers shall be the greatest external width of the structures, including the necessary forms, to be built therein.

- 10 16. Where a manhole or other appurtenance or the foundation therefor extends beyond the exterior lines of the sewer or its foundation, the minimum excavation in earth, required for the same shall be that contained in a prism with vertical sides and a horizontal section equal to the smallest rectangle which will enclose such appurtenance and its foundation.

Excavation for basins, etc.

- 20 17. The minimum dimensions of the excavation in earth, for brick basin manholes and inlets, park inlet basins, shall be such as to give a clearance inside the sheeting of 1 foot on all sides, above the foundation, but in all such cases the excavation shall be large enough to include the foundations for such structures shown on the plan. The excavation for concrete basin manholes and inlets, park inlet basins shall be of such dimensions as to permit the proper placing and removal of the necessary forms.

Depth of trenches.

- 30 18. The trenches shall be excavated to the depths required for the foundations of the sewers and appurtenances shown on the plan, and where the conditions are such as to make it necessary, to such additional depths as may be directed. Where pipe is laid without a cradle the bottom of the trenches shall be excavated to fit the lower third of the pipe, and excavations shall be made to receive the hubs. All irregularities in the bottoms of the trenches shall be filled up to the required grade with suitable material.

Cost to be covered.

- 40 19. The cost of all labor required to be done and all materials required to be furnished in the performance of all the work specified in paragraphs 15 to 18 inclusive, except as otherwise provided, shall be covered by all the contract prices for all the items for which there are contract prices.

**ROCK EXCAVATION.**

20. Rock excavation shall include the excavation and removal of the following materials:



EXHIBIT C-212 (*continued*):

(a) Rock which shall be determined to be of such a character as to warrant its removal by blasting, in order to insure the prompt and proper prosecution of the work.

(b) Boulders and pieces of rock, masonry in mortar and concrete, each of which contains 1 cubic yard or more, except the masonry and concrete of old sewers and their appurtenances.

- 10        21. Pieces of rock, masonry, concrete or boulders, which fall or slide into the trench from beyond the lines thereof, as herein defined, will not be measured, and the cost of the removal of the same shall be covered by all the contract prices for all the items for which there are contract prices.

Width of trench.

Rock excavation for basins, etc.

- 20        22. The required width of trench in rock for pipe sewers, basin connections, house connection and other pipe drains will be such as to give a clearance of 1 foot on each side of the pipe, exclusive of spurs and hubs; the required width of trench in rock, for other sewers and drains, will be such as to give a clearance of 1 foot on each side of the structure to be built therein at its greatest external width. Where a manhole or other appurtenance, or the foundation therefor, extends beyond the exterior lines of the sewer or its foundation, the excavation in rock required for the same will be that contained in a prism with  
30        vertical sides and a horizontal section 1 foot wider on each side than the smallest rectangle which will enclose such appurtenance and its foundation. The required dimensions of the excavation in rock, for basin manholes and inlets, park inlet basins will be such as to give a clearance of 1 foot on all sides above their foundation.

Depth of trench.

- 40        23. The rock shall be excavated to the depths required for the foundations of the structures as shown on the plan.

Measurement.

24. The volume of rock to be paid for will be that contained in prisms with vertical sides and of such dimensions as to give the widths and clearances hereinbefore specified from the bottoms of the trenches, as specified, to the surface of the rock.

EXHIBIT C-212 (*continued*):

Rock stripped.

25. Rock shall be stripped in sections, which, unless otherwise permitted, shall be not less than 50 feet in length, boulders shall be piled in such manner as to provide ready measurement by the Engineer, and the Engineer shall then be notified in order that he may measure the same. Rock excavated or blasted before such measurement is made will not be paid for.

Excavation for branches.

26. Wherever a branch for a proposed sewer or extension of a sewer is built in rock, the required trench shall be excavated for a distance of not less than 5 feet beyond the end of such branch, in the direction of the proposed sewer or extension.

Blasting.

27. All blasting operations shall be conducted in strict accordance with the City ordinances and regulations relative to rock blasting and the storage and use of explosives. Any rock excavation within 5 feet of water main less than 36 inches in diameter, and within 10 feet of a water main 36 inches or more in diameter, shall be done with very light charges of explosive, or if directed, without blasting, and the utmost care shall be used to avoid breaking or disturbing the main.

Exposed structures to be protected.

28. All exposed sewers, manholes basins and other structures shall be carefully protected from the effects of blasts. Any damage done to such structures shall be promptly repaired by the Contractor at his own expense.

Prices to cover.

29. The contract price for rock excavation shall cover the cost of all labor and materials required to excavate and remove all rock as specified, and without regard to its subsequent use.

40 **BACKFILLING.**

Backfilling around sewers, etc.

30. Unless otherwise specified or directed, all trenches and excavations shall be backfilled immediately after the structures are built therein. For a depth of at least 2 feet over the top

EXHIBIT C-212 (*continued*):

of the sewer, basin connection, house connection or other drain, the material for backfilling trenches as excavated, shall be clean earth, sand or rock dust. It shall be carefully deposited in uniform layers not exceeding 6 inches in depth, and unless otherwise permitted, each layer shall be carefully and solidly tamped with appropriate tools in such a manner as to avoid injuring or disturbing the completed work.

10 Backfilling for remainder of trench.

31. Backfilling for the remainder of the trenches as excavated, shall be proved material free from organic matter and containing no stone over 10 inches in their largest dimensions. Any stones shall be so distributed through the mass that all interstices are filled with the fine material. This backfilling shall be deposited as directed, and unless otherwise permitted, shall be spread in layers and solidly tamped.

20 Backfilling around manholes, basins, etc.

32. Backfilling within 2 feet of manholes, house connection drains, basin manholes, inlet basins, and other structures shall be of the same quality as that specified in paragraph 30. It shall be uniformly deposited on all sides and unless otherwise permitted, solidly tamped in such a manner as to avoid injuring the structures or producing unequal pressures thereon.

Puddling.

30 33. Backfilling shall, if required, be flooded or puddled with water as the work progresses, instead of being tamped.

34. When sheeting is drawn, all cavities remaining in or adjoining the trench shall be solidly filled. When sheeting is left in place all cavities behind such sheeting shall be solidly filled as directed.

Deficiency of filling.

40 35. Should there be a deficiency of proper material for the purpose, the Contractor shall furnish and place such additional material as may be required.

Temporary bulkheads.

36. For retaining the backfilling only temporary bulkheads will be allowed over sewers, basin connections and drains.

EXHIBIT C-212 (*continued*):

Such bulkheads shall not be of stone, and they shall be removed as the trenches are backfilled.

Curves, branches, etc., not to be covered.

- 10 37. Basin connections, house and sewer connections and intersections, ends of sewers and branches shall not be covered until the Engineer shall have inspected, measured and located the same, and given permission to backfill the trenches over them.

Removal of surplus material.

- 20 38. As the trenches are backfilled, the Contractor shall remove all surplus material and regrade and leave free, clear and in good order all roadways and sidewalks. During the progress of and until the final acceptance of the work, he shall maintain in good and safe condition the surface of the street over all the trenches, and promptly fill all depressions over and adjoining  
30 the trenches caused by settlement of the backfilling. In case of failure or neglect on the part of the Contractor to comply with the requirements of this paragraph within 24 hours after the service upon him of a written notice so to do, the President may furnish all materials and do all work required, and the cost thereof will be charged to the Contractor and deducted from any moneys due or to become due him under this contract. All surplus material or any part thereof shall, if required, be deposited as directed on the streets and avenues within the limits of this contract where the same are below grade, and in such a manner  
as to leave the surfaces of the filled material even.

Cost covered.

39. The cost of all labor required to be done and all materials required to be furnished in the performance of all the work specified in paragraphs 30 to 38 inclusive, shall be covered by all the contract prices for all the items for which there are contract prices.

CEMENT.

- 40 40. All cement used in the work shall be a high grade Portland cement of a well-established and approved brand. It shall be the product obtained by finely pulverizing clinker produced by calcining to incipient fusion, an intimate mixture of properly proportioned argillaceous and calcareous substances, with only such additions subsequent to calcining as may be neces-

EXHIBIT C-212 (*continued*):

sary to control certain properties. Such additions shall not exceed 3 per cent. by weight, of the calcined product.

Specific gravity; weight.

10 41. The cement shall have a specific gravity of not less than 3.10 after being thoroughly dried at 212° F. It shall weigh not less than 380 pounds net, to the barrel, 4 bags of 95 pounds each being considered equivalent to a barrel.

Fineness.

42. The cement shall be dry, finely ground, of uniform color and free for lumps. It shall leave a residue of not more than 8 per cent. by weight, when passed through a No. 100 sieve, and not more than 25 per cent. when passed through a No. 200 sieve.

20 Tensile strength.

43. Standard briquettes shall develop within the periods specified, tensile strength not less than that shown in the following table.

Neat Cement:

	24 hours .....	175 pounds per-sq. in.
	7 days (1 day in moist air, 6 days in water) .....	500 pounds per sq. in.
30	28 days (1 day in moist air, 27 days in water) .....	600 pounds per sq. in.

Mortar consisting of 1 part cement and 3 parts of Standard Ottawa Sand, by weight:

	7 days (1 day in moist air, 6 days in water) .....	180 pounds per sq. in.
	28 days (1 day in moist air, 27 days in water) .....	225 pounds per sq. in.

40 The average of the tensile strengths developed at each age by the briquettes in any set made from one sample will be considered the strength of the sample at that age, excluding any results that are manifestly faulty. The average strength of briquettes at 28 days shall be greater than the average strength at 7 days, and if tests are made after 28 days the strength shall be not less than that at 28 days.

EXHIBIT C-212 (*continued*):

Soundness.

44. Pats of neat cement when tested for constancy of volume or soundness shall remain firm and hard and show no sign of checking, cracking, distortion or desintegration.

Setting.

- 10 45. Unless otherwise required, the cement shall not develop initial set in less than 30 minutes, and shall develop final set in not less than 1 hour nor more than 10 hours. Quick-setting cement of an approved brand shall, if required, be kept on the work in sufficient quantity to provide for any contingency requiring the use of the same.

Testing.

- 20 46. The cement will be subjected to such tests as the Engineer may deem necessary, and such tests will be made in accordance with the methods recommended by the Committee on Uniform Tests of Cement of the American Society of Civil Engineers, except that the time of setting will usually be determined by means of the Gilmore needles. In case of dispute as to the time of setting, this test will be made by means of the Vicat needle.

Retesting.

- 30 47. Any cement which shall have been kept in storage after testing for a sufficient time to warrant it, shall be retested. Any prior acceptance shall be considered void and the acceptance or rejection of the cement shall depend upon the results of the latest tests.

Approval of brand may be rescinded.

48. The Engineer may at any time rescind the approval of any brand of cement that develops objectionable qualities.

Samples.

- 40 49. The Contractor shall notify the Engineer of the arrival of cement on the work, and furnish such facilities as may be required for obtaining samples for testing. Samples will be taken so as to fairly represent the material. The number of packages sampled and the quantity to be taken from each will depend upon the importance of the work and the number of tests to be made.

EXHIBIT C-212 (*continued*):

Delivery and storing.

50. Cement shall be delivered on the work in barrels or approved bags of uniform size, with the brand and the name of the manufacturer plainly marked thereon; it shall be immediately stored in a dry place and carefully protected from the weather. A sufficient stock of cement shall be kept on the work in advance of the necessity for its use to permit of the making of the required seven day tests. Except by written permission, no cement shall be used before it has been tested and accepted, and any concrete or masonry which may have been made under such permission with cement that is subsequently rejected, shall be removed and replaced by the Contractor, at his own expense, with concrete or masonry made of accepted cement.

Cost to be covered.

51. The cost of furnishing, storing and incorporating cement in the work, and the cost of samples required for testing, shall be covered by the contract prices for the structures or classes of work in connection with which the cement is used.

MORTAR.

52. All mortar used in the work, unless otherwise specified, shall be composed of 1 volume of cement, as in the original package, and  $2\frac{1}{2}$  volumes of sand. Where required, mortar of cement and sand in other proportions or mortar of neat cement shall be used as directed.

Sand.

53. Sand shall be composed of grains of clean, sharp quartz, not softer than hard limestone. It shall be moderately coarse and preferably made up of grains of varying size not exceeding one-quarter ( $\frac{1}{4}$ ) inch producing a mass with low percentage of voids. It shall not contain, in all, more than five (5%) per cent, by volume of clay, loam, mica, scales, silt, or other objectionable inorganic matter, nor more than one (1) per cent. of organic matter.

Tests may also be made of the cement and sand used in the proportions of one (1) part cement to three (3) parts sand, and these tests must show at least 70 per cent. of the strength of the mortar made with the cement and standard sand, or the sand may be rejected.

EXHIBIT C-212 (*continued*):

Mixing.

54. Mortar shall be mixed in a suitable box or on a tight platform, and never upon the pavement or ground. The cement and sand shall be thoroughly mixed dry, until the mixture has a uniform color. Clean, fresh water shall then be added and the mass worked until a mortar, which is uniform and of the required consistency is produced. The mortar shall be mixed in no greater quantity than is required for the work in hand, and any that has set sufficiently to require retempering shall not be used.
- 10

Freezing weather.

55. The mixing and use of mortar in freezing weather shall be subject to the same requirements as hereinafter specified for mixing and placing concrete under similar conditions.

Cost covered.

56. The cost of all labor and materials required to furnish and place the mortar in the work, as specified, shall be covered by the contract price for the structure or class of work in connection with which the mortar is used.
- 20

CONCRETE.

Class A concrete.

57. Class A concrete shall be made of 1 part of cement, 2 parts of sand and 4 parts of broken stone or gravel.
- 30

58. Broken stone for Class A concrete shall be approved trap rock, dense fine-grained blue limestone or granite broken into roughly cubical or pyramidal fragments. Broken stone which contains dust, loam, clay, organic matter or other improper substances shall not be used. Broken stone for Class A concrete shall be the run of the crusher that will pass through a screen with circular openings  $1\frac{1}{4}$  inches in diameter and shall be retained on a screen with openings  $\frac{1}{8}$ -inch in diameter. Gravel shall be equal in quantity to North Shore Long Island gravel, shall be clean and sound, and shall be of the sizes herein specified for broken stone.
- 40

Measuring ingredients.

67. For the purpose of determining the proportions of the materials for concrete, each bag of cement will be considered as



EXHIBIT C-212 (*continued*):

containing 9/10 cubic foot, and the other ingredients shall be measured by an approved method.

Water.

68. Only clean fresh water shall be used for concrete.

Mixing.

10

69. Unless permitted to be mixed by hand, concrete shall be mixed in approved mechanical batch mixers, so constructed and operated that the ingredients of the concrete may be accurately measured and thoroughly mixed. Enough water shall be added during the mixing to bring the concrete to the required consistency, which generally shall be such that the concrete may be poured into place without causing the separation of the stones from the mortar. When concrete is mixed by hand the broken stone or gravel shall be spread on a tight platform in a bed about  
20 4 inches deep and shall be thoroughly wetted. The cement and sand shall be mixed dry on a suitable platform, until the mixture has a uniform color. This mixture shall be spread evenly on the bed of wet stone, water added, and the entire mass turned until each piece of stone is entirely coated with mortar and a concrete produced which is uniform and of the consistency herein specified for machine mixed concrete. When a comparatively dry concrete is required it shall be mixed to such consistency as may be directed.

30 Placing concrete.

70. Concrete shall be mixed only in such quantity as is required for the work in hand, and any that has set sufficiently to require retempering shall not be used. Any concrete in which the water has separated from the solid matter shall be satisfactorily remixed before being placed. The concrete shall be so deposited in the work as to prevent the separation of the stone from the mortar. It shall be deposited in as nearly a continuous operation as practicable and shall be tamped or spaded with  
40 suitable tools to expel air bubbles and produce a dense and compact mass. When the operation of placing concrete is interrupted the concrete in the work, shall, if required, be confined by suitable temporary forms or bulkheads. When concrete is to surround reinforcing metal, structural steel, or wire netting, it shall be so deposited as to work closely around such material. When a comparatively dry concrete is used it shall be deposited in

EXHIBIT C-212 (*continued*) :

horizontal layers not exceeding 6 inches in depth and solidly tamped.

Joining old and new concrete.

- 10 71. When fresh concrete is to be laid on or adjoining concrete already set, the surface of the latter shall be thoroughly cleaned, washed, and roughened, and coated with a grout of neat cement before the fresh concrete is deposited.

Forms and centres.

- 20 72. The Contractor shall provide all necessary forms and centres for shaping concrete wherever used. They shall be true to the required shapes and sizes, strong enough and so secured in place as to withstand all operations incidental to placing the concrete, and watertight, and the faces against which the concrete is to be placed shall be satisfactorily smooth and clean. Timber used in forms and centres for exposed faces of concrete shall be seasoned stock. Unless otherwise permitted, those surfaces of forms and centres which will be in contact with concrete shall be coated as directed with an approval lubricant; when no lubricant is required such surfaces shall be thoroughly wetted just before the concrete is placed.

Removal of forms and centres.

- 30 73. The forms and centres shall be left in place until the concrete has set sufficiently to permit their removal without danger to the structure, and until so much of the backfilling or embankment as may be directed has been put in place. No forms or centres shall be struck or removed until permission to do so has been given.

Exposed surfaces.

- 40 74. Special care shall be used to secure a smooth and uniform finish to the surfaces of concrete which will be exposed in the completed structure. Immediately after the removal of the forms such surfaces, if uneven, shall be rubbed smooth to a uniform and satisfactory finish, all exposed edges of concrete shall be neatly rounded as directed, and if any voids, projections or other imperfections be found, such defects shall at once be corrected by tooling, cutting out and filling with mortar, or otherwise, as directed.

EXHIBIT C-212 (*continued*) :

Expansion joints.

75. Expansion joints shall be provided in such manner and at such places as are shown on the plan or as may be directed. All unavoidable joints shall be made as shown on the plan or as directed.

10 Depositing concrete under water.

76. Whenever it becomes necessary to place concrete under water, it shall be deposited by means of approved method. Concrete so deposited shall be carefully spread without tamping.

Freezing weather.

20 77. In freezing weather, until the temperature falls to 24 degrees Fahrenheit the water used for concrete shall, if directed, be heated to an approved temperature, and if directed, one per cent. by weight of salt shall be added to the water for each degree Fahrenheit that the temperature of the air is below 32 degrees Fahrenheit. The other materials for the concrete shall be heated sufficiently to remove all frost and ice. No concrete shall be laid when the temperature of the air is below 24 degrees Fahrenheit.

Protection.

30 78. Concrete shall be allowed to set for such time as may be directed before being worked or walked upon, or before filling, backfilling or other material is placed upon or against it. It shall not be flooded with water until it has sufficiently set. Concrete shall be carefully protected from injury, from freezing and from the drying effects of the sun and wind by covering it with canvas, bagging, hay or other suitable and approved materials. Such protection shall be placed as soon as the concrete is in condition to receive it, and except in freezing weather, the covering as well as the concrete shall be kept wet for such time as may be directed.

Measurement.

40 79. The amount of concrete to be paid for as such will be all concrete put in place as shown on the plan or as directed, except such concrete shown on the plan as being part of structures for which there are contract prices and the cost of which is hereinafter specified to be covered by the contract prices for such structures. No deduction will be made on account of the space occupied by spurs for house connections, reinforcing metal,

EXHIBIT C-212 (*continued*) :

structural steel or waterproofing, but deduction will be made on account of space occupied by pile heads, timber, sewers, basin connections and drain pipes.

Prices to cover.

- 10 80. The contract prices for the various classes of concrete shall cover the cost of all labor and materials required to furnish, place and remove all necessary forms and centres, and to furnish, make, place, finish and protect the concrete as specified.

BRICK MASONRY.

Quality of bricks.

- 20 81. All bricks used in the work shall be sound and hard burned throughout, and of uniform size and quality. If required the bricks shall be culled immediately after they are brought on the work and all bricks which are warped, cracked or of improper quality shall be at once removed. The proportion of bats permitted will be determined according to the character and location of the work in which they are to be used. When bricks are used as the lining for inverts of sewers they shall be specially selected, and no bats shall be used except for closers.

Vitrified bricks.

- 30 82. Where shown on the plan, vitrified bricks of approved size and quality shall be furnished and laid. After having been thoroughly dried and then immersed in water for 24 hours they shall not absorb more than 4 per cent. of their weight of water.

How laid.

- 40 83. Bricks shall be satisfactorily wet when being laid and each brick shall be laid in mortar so as to form full bed, end and side joints in one operation. The joints shall be not wider than  $\frac{3}{8}$  inch, except when the bricks are laid radially, in which case the narrowest part of the joint shall not exceed  $\frac{1}{4}$  inch. The bricks shall be laid in a workmanlike manner, true to line, and wherever practicable the joint shall be carefully struck and pointed on the inside. Brickwork shall be laid with a satisfactory bond, and as it progresses shall be racked back in courses, unless otherwise permitted.

EXHIBIT C-212 (*continued*):

Protection.

84. All fresh brickwork shall be carefully protected from freezing and from the drying effects of the sun and wind, and if required, it shall be sprinkled with water at such intervals and for such a time as may be directed. Brickwork shall be protected from injuries of all sorts, and all portions which may become  
10 damaged or may be found defective shall be repaired, or if directed, be removed and rebuilt.

Freezing weather.

85. In freezing weather bricks shall be heated sufficiently to remove all ice and frost.

Measurement.

86. The amount of brick masonry to be paid for as such  
20 will be all brick masonry built, as shown on the plan or as directed, except such brick masonry, shown on the plan as being part of structures for which there are contract prices and the cost of which is hereinafter specified to be covered by the contract prices for such structures.

Price to cover.

87. The contract price for brick masonry shall cover the cost of all labor and materials required to build and protect the same as specified. Par. 81 to 87 do not apply to the brickwork  
30 for screen building.

**STRUCTURAL STEEL.**

Quality.

98. Structural steel shall be medium steel and rivet steel made by the open hearth process and shall conform to the latest revised Standard Specifications for Structural Steel for Buildings adopted by the American Society for Testing Materials, and such tests as may be required shall be made in accordance there-  
40 with and at the places hereinafter specified. The chemical and physical properties of the steel be as follows:

EXHIBIT C-212 (*continued*) :

Properties Considered	Medium Steel	Rivet Steel
Phosphorus (maximum) . . . . .	0.06 per cent.	0.06 per cent.
Ultimate strength, lbs. per sq. in. . . . .	55,000-65,000	48,000-58,000
Yield point (minimum), lbs. per sq. in. . . . .	1/2 ult. tens. str.	1/2 ult. tens. str.
10 Elongation, per cent. in 8 in.  (minimum) . . . . .	1,400,000	1,400,000
	ult. tens. str.	ult. tens. str.
Character of fracture . . . . .	Silky	Silky
Cold bend without fracture . . .	180° to diam. of 1 thickness	180° flat

Finish.

20            99. All finished material shall be free from injurious seams, flaws and cracks, and have a workmanlike finish.

Variation in weight.

30            100. When steel is inspected at the will or shop all pieces (except plates), which vary in weight more than 2 1/2 per cent. from that specified shall be rejected; when steel is not inspected until it is delivered on the work such variation in weight will be sufficient cause for rejection when, in the judgment of the Engineer, the safety of the work will be impaired thereby.

Workmanship.

101. All structural steel shall be in accordance with the plan and approved shop drawings. All details not shown on the plan, and all workmanship and finish shall be equal to the best current practice in similar work for buildings.

Anchor bolts.

40            102. Anchor bolts and expansion bolts shall be furnished where required and set in place as directed. When holes are drilled in masonry or concrete for such bolts, the holes shall be washed clean and the bolts shall be firmly embedded in a mortar composed of equal parts of cement and sand, unless other material is shown on the plan.

EXHIBIT C-212 (*continued*):

Melt numbers.

103. Test specimens and every finished piece of steel shall be stamped with melt or blow number, except that small pieces may be shipped in bundles securely wired together, with the melt or blow number on a metal tag attached.

10 Tests and inspections.

104. The required tests and inspections of structural steel shall, if directed, be made at the mills and shops by the City's authorized inspector. The Contractor shall notify the City as to the mills and shops which are to supply the steel sufficiently in advance to enable the City to arrange for such tests and inspections and the mills and shops shall afford every facility for making the same.

Mill certificates.

20 105. If it is decided not to make the City's tests and inspections at the mills, then mill certificates showing the properties of each melt of which the steel is made will be accepted for consideration.

Shipping invoices.

106. The Contractor will be required to furnish complete copies of shipping invoices with each shipment of steel.

30 Certificates, etc., for information only.

107. Steel will not be accepted until the required inspector's reports or mill certificates are received. All tests, inspections, reports and certificates are for the information of the Engineer, and he shall not be precluded on account thereof from requiring or making any further tests which he may deem necessary.

Shop drawings.

40 108. The Contractor shall prepare complete and accurate shop drawings of all steel work, and no shop work shall be done until such drawings shall have been approved. The Contractor shall furnish the Engineer with 3 complete sets of prints of the approved shop drawings.

EXHIBIT C-212 (continued):

Painting.

109. All steel shall be thoroughly cleaned of scale, rust, oil and dirt, and unless otherwise directed, those parts which are not to be bedded in concrete shall be painted with a priming coat of the best red lead and linseed oil or such other paint of equivalent value as may be directed. After erection the metal  
10 which will be exposed in the finished work shall be evenly painted with 2 coats of approved paint. No painting shall be done on wet surfaces.

Measurement.

110. The amount of structural steel paid for as such will be all structural steel placed in the work in accordance with the plan or directions, except any excess greater than 2½ per cent. above the weight required, and except such structural steel shown  
20 on the plan as being part of structures for which there are contract prices, and the cost of which is hereinafter specified to be covered by the contract prices for such structures. This paragraph does not apply to structural steel in screen house.

Price to cover.

111. The contract price for structural steel shall cover the cost of all labor and materials required to furnish, fabricate, erect and paint the same, to furnish all test pieces, to prepare and furnish prints of shop drawings, and to drill holes for and  
30 set anchor and expansion bolts, where required, all as specified.

STEEL REINFORCEMENT BARS.

Shape.

112. Steel bars for reinforcing concrete shall be of such shape as to afford an approved mechanical bond with the concrete at frequent intervals and to insure intimate contact between the steel and concrete. Plain bars may be used only when shown on the plan.

40 Samples.

113. The Contractor shall indicate the type of bars proposed to be used, and if required shall furnish samples thereof, and he is cautioned not to place the order for the bars until the type has been approved.



EXHIBIT C-212 (continued):

Size.

114. Each bar shall have a net cross sectional area equivalent to that designated on the plan or required, or it shall be the commercial size of the approved type of bar having a net cross sectional area next larger than that designated or required.

10 Variation in weight.

115. Reinforcement bars will be rejected if their actual weight varies more than 5 per cent. from their theoretical weight as shown by the manufacturer's tables. For weighing reinforcement bars the Contractor shall, whenever required, provide an accurate scale of an approved type, with a capacity of not less than 500 pounds.

Quality.

20 116. All steel for reinforcement bars shall be made by the open hearth process and shall conform to the latest revised Standard Specifications for Steel Reinforcement Bars adopted by the American Society for Testing Materials, and such tests as may be required, shall be made in accordance therewith, and at the places hereinafter specified. The chemical and physical properties of the steel shall be as follows:

Properties Considered	Structural Steel Grade		Hard Grade*		Cold Twisted Bars
	Plain Bars	Deformed Bars	Plain Bars	Deformed Bars	
Phosphorus, max.					
Bessemer .....	0.10	0.10	0.10	0.10	0.10
Open Hearth .....	0.05	0.05	0.05	0.05	0.05
Ultimate Tensile Strength, pounds per sq. in. ....	55,000-70,000	55,000-70,000	80,000 min.	80,000 min.	Recorded only
Yield Point, minimum pounds per sq. in. ....	33,000	33,000	50,000	50,000	55,000
Elongation, minimum per cent. in 8 inches .....	1,400,000	1,250,000	1,200,000	1,000,000	5 per cent.
	tens. str.	tens. str.	tens. str.	tens. str.	
Cold bend without fracture:					
Bars under ¼ in. in diam. or thickness .....	180° to diam. of 1t.	180° to diam. of 1t.	180° to diam. of 3t.	180° to diam. of 4t.	180° to diam. of 2t.
Bars ¼ in. in diam. or thickness and over ...	180° to diam. of 1t.	180° to diam. of 2t.	90° to diam. of 3t.	90° to diam. of 4t.	180° to diam. of 3t.

t: Nominal thickness or diameter of bar. \* The hard grade will be used only when specified.

117. Reinforcement bars shall be rolled from billets of new steel; they shall be straight and free from seams, flaws, cracks and imperfections of all kinds.

EXHIBIT C-212 (*continued*):

Tests and inspections.

118. The provisions of paragraphs 104, 105 and 107 relating to tests and inspections of structural steel shall also apply to tests and inspections of steel reinforcement bars.

10 119. Test pieces 18 inches long may be cut from any of the bars delivered on the work, and the failure of any test piece to meet the specified requirements, or the failure of any bar when being bent will be sufficient cause for the rejection of all steel from the melt from which the test piece or bar was made.

Bending sheets.

120. Bending sheets for steel reinforcement shall be furnished if required, in which case the reinforcement bars shall not be bent until such bending sheets have been approved.

20 Delivery and protection.

121. Bars shall be delivered in bundles, to each of which shall be securely wired a metal tag with the number of the melt from which the bars were made stamped thereon. The bars shall be protected at all times from mechanical injury and from the weather and when placed in the work they shall be free from dirt, scale-rust, paint and oil. Bars which are not to be embedded in concrete within a short time after being placed in the work shall, if directed, be immediately coated with a thin grout of equal parts of cement and sand.

30 Cutting and bending.

122. The bars shall be bent to the shapes shown on the plan and in conformity with approved templets. When bars are cut and bent on the work, the Contractor shall employ competent men and shall provide the necessary appliances for the purpose.

Placing.

40 123. All bars shall be as long as can be conveniently used, accurately bent, placed, spaced and jointed as shown or directed, and they shall be securely held in their required positions by approved devices until the concrete has been placed around them.

Joints.

124. Where more than one bar is necessary to complete the required length the joints shall be made by means of approved

EXHIBIT C-212 (*continued*):

10 clamps which will develop the full strength of the bars or by looping the ends of the bars around each other in such a manner as to produce and maintain tension on the joint during construction or by lapping the ends of the bars, as directed, and wiring them together in an approved manner, or by lapping the ends of the bars for a distance of 30 times their nominal diameters for deformed bars, and 40 times their nominal diameters for plain bars, and with a space not less than 2 inches between them. Laps of longitudinal bars below the standard sewer sections shall be 6 inches in length unless otherwise shown on the plan or directed. Joints in longitudinal bars shall be staggered as directed.

Measurement.

20 125. The amount of steel reinforcement bars paid for as such will be the weight computed from the lengths and theoretical net sections of the steel reinforcement bars placed in the work in accordance with the plan or directions, except such steel reinforcement bars shown on the plan, as being part of structures for which there are contract prices, and the cost of which is hereinafter specified to be covered by the contract prices for such structures. The amount paid for will not include any waste metal cut from bars nor the lengths of bars used for laps, nor wires, clamps and other devices used for spacing, joining and securing the bars in place, nor lugs, corrugations and irregularities which increase the weight of the bars above the weight of plain steel bars of the same net cross sectional areas, the cost of all of which shall be covered by the contract price for steel reinforcement bars. In computing the weight 1 cubic foot of steel will be considered as weighing 489.6 pounds.

Price to cover.

40 126. The contract price for steel reinforcement bars shall cover the cost of all labor and materials required to furnish, clean, cut, bend, place, join, secure and protect the same, to furnish all test pieces and samples, and to prepare and furnish prints of bending sheets, all as specified.

WROUGHT IRON.

Quality.

132. Wrought iron shall be double rolled, tough, fibrous and uniform in quality. It shall be thoroughly welded in rolling and be free from surface defects. It shall have an ultimate tensile

EXHIBIT C-212 (*continued*):

strength of at least 48,000 pounds per square inch, an elongation of at least 20 per cent. in 8 inches, and a fracture wholly fibrous. Specimens shall bend cold, with the fiber, through 180 degrees around a diameter equal to the thickness of the piece tested. When nicked and bent the fracture shall be at least 90 per cent. fibrous.

10 Galvanizing painting.

133. When required by the plan exposed wrought iron shall be thoroughly and uniformly galvanized. When not required to be galvanized exposed wrought iron shall be painted as specified in paragraph 109.

Price to cover.

134. The cost of all wrought iron and the requirements specified in connection therewith shall be covered by the contract price for the structure in connection with which it is used.

IRON CASTINGS.

Quality.

136. Iron castings shall be of the best foundry pig iron, gray, tough and free from cold shuts, blow holes and other imperfections. The weight shall be conspicuously painted by the manufacturer with white oil paint on each casting. The castings shall be sound, clean and neatly finished. Where required, castings shall be thoroughly coated with coal tar pitch varnish.

Cost covered.

137. The cost of all labor and materials required to furnish coat and place the castings as specified, shall be covered by the contract price for the structure or class of work in connection with which they are used.

TIMBER.

40 Quality.

138. All timber shall be merchantable pine or spruce, unless otherwise specified, and shall be sound and free from shakes, cracks, large or loose knots, and other defects impairing its strength or durability. It shall be squared to the required dimensions throughout its entire length.

EXHIBIT C-212 (*continued*):

Placing.

139. Timber shall be placed where shown on the plan or directed, and where necessary shall be firmly spiked or bolted with approved nails, spikes or bolts of such sizes and lengths, and at such places and in such numbers as shown on the plan or as directed.

10 Measurement.

140. The amount of timber to be paid for as such will be all timber placed in the work in accordance with the plan or directions, except piles and timber sheeting, and except such timber shown on the plan as being part of structures for which there are contract prices, and the cost of which is hereinafter specified to be covered by the contract prices for such structures. The amount paid for will not include timber used for forms, templates, centres, scaffolds, bridges (unless otherwise specified), fences, guard rails or other temporary structures, the cost of all of which shall be covered by all the contract prices for all the items for which there are contract prices. No deduction will be made in the measurement of timber flooring on account of the spaces occupied by the piles.

Price to cover.

141. The contract price for timber shall cover the cost of all labor and materials required to furnish, work, place and secure the same as specified.

TIMBER SHEETING.

Quality, placing, etc.

142. Timber sheeting and the rangers and braces for the same shall be of a satisfactory quality of timber and of sufficient size and strength to adequately support the sides of the trenches and excavations. Sheeting shall be driven in such a manner as to avoid cracking and splitting, and if required for the proper prosecution of the work, shall be tongued and grooved.

When paid for.

143. Timber sheeting will be paid for as such only when left in place by written order. When sheeting is left in, so much of it below the surface of the ground as may be directed shall be cut off.

EXHIBIT C-212 (continued) :

Measurement.

10 144. The amount of timber sheeting to be paid for as such will be all timber sheeting, rangers and braces left in place by written order, and will not include sheeting, dangers and braces left in place without such order, not sheeting left in place because concrete is placed against it, nor that part of the sheeting that extended above the ground after having been driven, the cost of all of which shall be covered by all the contract prices for all the items for which there are contract prices. Inclined piling or planking at the bottom of a trench, if used to prevent the caving in of the excavation and in such a position that it cannot be drawn, shall be paid for at the price bid for sheet piling.

Price to cover.

20 145. The contract price for timber sheeting shall cover the cost of all labor and materials required to furnish, place and cut off the sheeting, rangers and braces as specified, and shall also cover the cost of all excavation necessary to place the same

PILES.

Quality.

30 146. Piles shall be of white oak, spruce or yellow pine, sound and free from splits, shakes and other imperfections impairing their strength or durability. They shall be straight, taper uniformly from butt to point and if required shall be barked. Unless otherwise shown on the plan, they shall conform to the following dimensions :

Dimensions.

	Length Below Cutoff	Minimum Diameter at Point	Minimum Diameter at Cutoff
	Less than 20 feet .....	6 inches	10 inches
	20 feet to 25 feet .....	6 inches	11 inches
40	26 feet to 35 feet .....	6 inches	12 inches
	36 feet to 45 feet .....	6 inches	13 inches
	46 feet and over .....	6 inches	14 inches

147. To determine the necessary length of piles to be used in the work, the Contractor may be required to drive test piles.

EXHIBIT C-212 (continued):

148. Each pile less than 60 feet long shall be in one piece; piles longer than 60 feet may be spliced in an approved manner. The small ends of piles shall be pointed, and, if required, shall be shod with approved iron shoes. The butt ends of piles shall be cut off square and protected with approved iron bands while driving.

10 How driven.

149. Piles shall be driven without the use of a follower, unless specially permitted. Pile heads that become split or broomed shall be cut off and the driving continued. Any pile which splits, breaks or drives unsatisfactorily will not be paid for, and it shall be withdrawn or abandoned and another driven in place of it. After being driven piles shall be accurately cut off at the required elevation.

20 Bearing pile.

150. Bearing piles shall be driven vertically and shall be spaced as shown on the plan or as directed. They shall be driven to a satisfactory refusal by a hammer having a concave face and weighing not less than 2,000 pounds nor more than 2,500 pounds. Refusal in general will be indicated by a penetration not exceeding 1 inch per blow under the last 6 blows of the hammer falling 15 feet. If steam hammer pile drivers are used, the piles shall be driven so that their bearing power shall be not less than that of piles driven as herein specified. When it is shown on the plan or specified that piles are to be driven to a certain required depth, they shall be driven if necessary, by the use of a water jet or by any other approved method.

30 Brace piles.

151. Where shown on the plan, brace, batter or spur piles shall be driven at the inclination shown or directed, to a satisfactory refusal, and the tops shall be framed, bolted or strapped to adjoining piles or to each other as shown on the plan, or directed.

40 Measurement.

152. The amount of piles to be paid for will be the total length below cutoff of all piles remaining in the work in accordance with the plan or directions, and the total length of all piles used only as test piles. Piles driven for temporary use will not be paid for.

EXHIBIT C-212 (*continued*):

Price to cover.

153. The contract price for piles shall cover the cost of all labor and materials required to furnish, drive and cut off the same as specified, of fastening brace piles, and of furnishing and placing all shoes, bands, bars, straps, bolts and other fastenings required.

10

CONCRETE SEWERS.

Inverts.

Brick lining.

154. Inverts of concrete sewers shall be formed between transverse templets and shall be screeded. The templets shall be placed at such intervals as to divide the invert into sections of suitable size for convenient construction, and unless otherwise permitted, the concrete shall be deposited in alternate sections and allowed to set before the remaining sections are built. Unless otherwise shown on the plan, a layer of mortar not less than 1/2-inch thick shall be spread evenly and to a smoothly finished surface upon the concrete of the invert as soon as such concrete is in place. Where the radii of inverts are too short to permit screeding between templets, the inverts shall be shaped by means of suitable forms, which shall be removed as soon as the concrete has a sufficient set, and if required, the surfaces of inverts shall be floated or troweled to a smooth finish. The concrete for inverts shall be deposited continuously for their entire cross sections and for such longitudinal distances as may be convenient. Inverts shall be carefully protected from all injury during progress of the work.

20

30

Side walls.

155. Concrete in the side walls of sewers shall be deposited continuously to the height directed and for such longitudinal distances as may be convenient.

40) Roof.

156. Concrete in the roofs of sewers shall be deposited continuously for the full depths and widths of the roofs and for such longitudinal distances as may be convenient. The outer surfaces of roofs shall be finished with an excess of mortar and left true and smooth. They shall be covered and protected as speci-



EXHIBIT C-212 (*continued*):

fied in paragraph 78, and such covering shall remain thereon until the backfilling or embankment is placed.

**Bulkheads.**

10 157. While being deposited the concrete for sewers shall be confined by temporary, vertical bulkheads placed at such intervals longitudinally as may be required for convenient working. The bulkheads shall be so designed as to give an approved shape to the end of the section of concrete under construction, shall be satisfactorily secured in place before the concrete is deposited, and shall remain in place until the concrete has set sufficiently to hold its shape.

**Reinforcement.**

20 158. Where shown on the plan concrete sewers shall be reinforced with metal of the dimensions and shapes shown, and of the quality and in the manner hereinbefore specified.

**Minimum length of invert.**

159. Unless otherwise permitted or ordered, not less than 16 feet of foundation or invert for concrete sewer shall be built at one operation.

**Connections.**

30 160. Connections and branches for lateral sewers and receiving basins shall be built in where shown on the plan or where directed. Such connections and branches shall be closed with bulkheads of brick masonry 8 inches thick unless otherwise shown on the plan. All necessary openings and bulkheads for branch sewers shall be built in concrete sewers where shown on the plan or where directed.

**Measurements.**

40 161. The lengths of concrete sewers will be determined by horizontal measurements, along their centre lines. No deductions will be made on account of openings at branches and man-holes. The measurement of a branch concrete sewer will be made from the inner surface of the wall of the main sewer through which it enters. A reducer will be paid for at the contract price for the sewer at the larger end thereof.

EXHIBIT C-212 (*continued*):

Prices to cover.

- 10 162. The contract prices for concrete sewers shall cover the cost of all necessary excavation (except rock); of furnishing, maintaining and removing all forms, centres, templets and temporary bulkheads; of all openings and bulkheads; of all back-filling; and of all labor and materials required to construct concrete sewers as shown by the normal sections on the plan and as specified.

VITRIFIED PIPE SEWERS.

Vitrified pipe.

- 20 168. Vitrified pipe sewers shall be built of shale or clay hub and spigot pipes with deep and wide sockets. They shall be thoroughly and perfectly burned, without warps, cracks or other imperfections, and shall be fully and smoothly salt-glazed over the entire inner and outer surfaces, except that the inside of the hub and the outside of the spigot may be unglazed for two-thirds the depth of the hub. On all other portions of the pipe the glazing shall completely cover and form an integral part of the pipe body. If not left unglazed the inside of the hub and the outside of the spigot shall be scored in 3 parallel lines extending completely around the circumference. When it is broken, vitrified pipe shall show dense and solid material, without serious cracks or laminations; it shall be of such toughness that it can be worked with a chisel and hammer, and when struck with a hammer, it shall have a metallic ring.
- 30

Identification marks.

169. Each pipe shall have clearly impressed on its outer surface the name of the manufacturer and of the factory in which it was made.

Shape and dimensions.

- 40 170. The sizes of the pipes are designated by their interior diameters. Each pipe shall be a cylinder with a circular section, and shall have a uniform thickness. The minimum lengths, thicknesses, depths of hubs and annular spaces for the respective sizes of pipe shall be as follows:

EXHIBIT C-212 (continued) :

	Size	Length	Thickness	Depth of Socket	Annular Space
	6.....	2 feet	5/8 inch	2 1/2 inches	5/8 inch
	8.....	3 "	3/4 "	2 3/4 "	5/8 "
	10.....	3 "	7/8 "	2 3/4 "	5/8 "
	12.....	3 "	1 "	3 "	5/8 "
10	15.....	3 "	1 1/4 "	3 "	5/8 "
	18.....	3 "	1 1/2 "	3 1/4 "	5/8 "
	20.....	3 "	1 2/3 "	3 1/2 "	5/8 "
	22.....	3 "	1 5/6 "	3 3/4 "	5/8 "
	24.....	3 "	2 inches	4 "	5/8 "
	27.....	2 1/2 "	2 1/4 "	4 "	3/4 "
	30.....	2 1/2 "	2 1/2 "	4 "	3/4 "
	33.....	2 1/2 "	2 5/8 "	5 "	1 1/4 "
	36.....	2 1/2 "	2 3/4 "	5 "	1 1/4 "
	42.....	2 1/2 "	3 1/2 "	5 "	1 1/4 "

20 Curves, bends, etc.

171. Where curved pipes are required they shall be furnished in either one-eighth or one-quarter bends of their respective sizes. Curved pipe, bends, siphons, and special pipe of the sizes and forms shown on the plan shall be furnished and laid, and unless otherwise provided they will be paid for at the contract prices for the corresponding sizes of vitrified pipe sewers.

30 Samples for testing.

172. Any or all of the following tests may be applied to samples selected from the pipe delivered on the work. For the purposes of making such tests as may be required the Contractor shall furnish and deliver when and where directed one length of pipe for each 200 feet of pipe sewer to be laid.

Crushing tests.

40 173. When supported at the bottom upon a knife edge one inch in width in such manner that an even bearing is provided throughout the whole length, exclusive of the bell, and pressure is applied at the crown uniformly through a similar knife edge, the various sizes of pipe shall withstand the following pressures :

EXHIBIT C-212 (*continued*) :

		Diameter	Pressure			
	6 inches	.....	900	lbs.	per	lin. ft.
	8 "	.....	900	"	"	" "
	10 "	.....	1,000	"	"	" "
	12 "	.....	1,050	"	"	" "
	15 "	.....	1,250	"	"	" "
10	18 "	.....	1,400	"	"	" "
	20 "	.....	1,550	"	"	" "
	22 "	.....	1,750	"	"	" "
	24 "	.....	1,950	"	"	" "
	27 "	.....	2,150	"	"	" "
	30 "	.....	2,350	"	"	" "
	33 "	.....	2,500	"	"	" "
	36 "	.....	2,800	"	"	" "
	42 "	.....	3,200	"	"	" "

20 Drop weight test.

174. When supported on a dry sand bed 2 inches deep, all pipe shall withstand without cracking the impact from 2 blows of a cast iron ball weighing 8 pounds falling 18 inches. Spurs shall resist without fracture the impact from 2 blows of such a ball falling 6 inches and striking on the extreme end of the hub of the spur.

Hydrostatic test.

30 175. When subjected to an internal hydrostatic pressure of 8 pounds per square inch, vitrified pipe shall show no percolation.

Absorption test.

176. After having been thoroughly dried and then immersed in water for 24 hours, sample pieces of pipe with all broken edges shall not absorb more than 4 per cent. of their weight of water.

40 Factory rejection.

177. The entire product of any pipe factory may be rejected when, in the judgment of the Engineer, the methods of manufacture fail to guarantee uniform results, or where the materials used are such as produce inferior pipe, as indicated by repeated failure to comply with the tests herein specified.

EXHIBIT C-212 (*continued*):

Cradles.

178. In earth trenches pipe sewers shall be laid in concrete cradles when required by the plan.

Without cradle.

10 179. When the sewer is to be laid without a cradle the trench shall be excavated as specified in paragraph 18 and the earth forming the bed carefully freed of stones. The pipe shall then be evenly bedded therein and the backfilling placed and firmly tamped in such a manner as to avoid disturbing the sewer.

Concrete cradle.

20 180. When the sewer is to be laid in a concrete cradle, the concrete for the full width of the cradle shall be deposited continuously to the height of the outside bottom of the pipe. Before the concrete has set the pipe shall be evenly bedded therein and the remainder of the concrete immediately deposited and carefully tamped in such a manner as to avoid disturbing the sewer.

How laid.

30 182. All pipes shall be laid with ends abutting and true to line and grade. The pipes shall be fitted together and matched so that when laid in the work they will form a sewer with a smooth and uniform invert. Unless otherwise permitted or directed, not less than 12 feet of pipe sewer shall be laid in one operation.

183. Unless otherwise shown on the plan, the joints of vitrified pipe sewers shall be made as hereinafter specified in paragraph 185.

Gasket and mortar joints.

40 185. Gasket and mortar joints shall be made in the following manner: A closely twisted hemp or oakum gasket of suitable diameter, in no case less than  $\frac{3}{4}$ -inch, and in one piece of sufficient length to pass around the pipe and lap at the top, shall be solidly rammed into the annular space between the pipes with a suitable calking tool. Before being placed, the gasket shall, if desired, be saturated with neat cement grout. The remainder of the space shall then be completely filled with plastic mortar

EXHIBIT C-212 (*continued*) :

mixed 1 to 1½, and the joint wiped inside and finished to a smooth level outside.

Inspection of joints.

- 10 186. Unless otherwise permitted, at least 4 finished joints shall be left exposed for inspection throughout the working day, and the necessary staging for the protection of the exposed sewers and for the handling of excavated material shall be provided. A suitable ladder affording easy access for such inspection shall be furnished at every trench open for the proposed sewer.

Subgrade to be tested.

187. No pipe or the cradle therefor shall be laid or placed until the subgrade of the trench shall have been tested and found correct.

- 20 Sewer to be kept clean.

188. The interior of the sewer shall, as the work progresses, be cleared of all dirt, cement and superfluous materials of every description.

Backfilling.

- 30 189. Immediately after the sewer is laid the trench shall be backfilled as provided in paragraphs 30 to 38 inclusive and 186. No walking on or working upon the completed sewer (except as may be necessary in tamping the backfilling) will be permitted until the trench has been backfilled to a height of at least 2 feet over the top of the sewer.

Temporary covers.

190. The exposed ends of pipe sewers shall be provided with approved temporary covers fitted to the pipe so as to exclude earth and other materials.

Branch pipes.

- 40 191. Branch pipes and connection pipes shall be of the same quality and dimensions, and laid in the same manner as specified for vitrified pipe sewers. Dead ends of pipes shall be closed with bulkheads of brick masonry 8 inches in thickness.

EXHIBIT C-212 (*continued*):

Connection with existing work.

192. Wherever the proposed sewer is to connect with an existing manhole in which there is a branch pipe which is damaged or of unsuitable size or in improper position, such pipe shall be removed and be replaced with a pipe of suitable size or be reset in the proper position. The pipe so substituted or reset will be paid for at the contract price, for the corresponding size of pipe sewer.

Pipes cut to fit masonry.

193. The ends of pipes which enter masonry shall be neatly cut to fit the face of the masonry. When directed, such cutting shall be done before the pipes are built in.

Measurement.

194. The length of pipe sewers to be paid for will be determined by horizontal measurements along their center lines, and no deductions will be made on account of openings at manholes.

Prices to cover.

195. The contract prices for vitrified pipe sewers shall cover the cost of all necessary excavation (except rock); of all cradles required; of all necessary trimmings, fitting and building into masonry; of all bulkheads; of all backfilling; of all samples furnished; and of all labor and materials required to furnish and lay the sewers complete in place, as shown on the plan and as specified.

CAST IRON PIPE SEWERS.

Cast iron pipe.

196. Cast iron pipe for sewers shall conform with the requirements of the latest revised Standard Specifications for Cast Iron Pipe adopted by the American Society for Testing Materials, and all tests required shall be made in accordance therewith.

197. The thickness of shall and weight of the several classes of pipe, and the allowable variations of diameter and weight shall be as follows:

**EXHIBIT C-212 (continued) :**

Nominal Inside Diam. Ins.	Class A 100 Ft. Head 43 Lbs. Pressure		Class B 200 Ft. Head 80 Lbs. Pressure		Class C 300 Ft. Head 130 Lbs. Pressure		Allowable Diameter	Variations Weight
	Thick-ness Ins.	Weight	Thick-ness Ins.	Weight	Thick-ness Ins.	Weight		
4...	0.40	240	0.45	260	0.48	280	0.06 in.	5 per cent.
6...	0.44	370	0.48	400	0.51	430	0.06 "	5 " "
10 8...	0.46	515	0.51	570	0.56	625	0.06 "	5 " "
10 10...	0.50	685	0.57	765	0.62	850	0.06 "	5 " "
12 12...	0.54	870	0.62	985	0.68	1,100	0.06 "	5 " "
14 14...	0.57	1,075	0.66	1,230	0.74	1,400	0.06 "	5 " "
16 16...	0.60	1,300	0.70	1,500	0.80	1,725	0.06 "	5 " "
18 18...	0.64	1,550	0.75	1,800	0.87	2,100	0.08 "	4 " "
20 20...	0.67	1,800	0.80	2,100	0.92	2,500	0.08 "	4 " "
24 24...	0.76	2,450	0.89	2,800	1.04	3,350	0.08 "	4 " "
30 30...	0.88	3,500	1.03	4,000	1.20	4,800	0.10 "	4 " "
36 36...	0.99	4,700	1.15	5,450	1.36	6,550	0.10 "	4 " "
20 42...	1.10	6,150	1.28	7,100	1.54	8,600	0.10 "	4 " "
48 48...	1.26	8,000	1.42	9,000	1.71	10,900	0.12 "	4 " "
54 54...	1.35	9,600	1.55	11,200	1.90	13,700	0.15 "	4 " "
60 60...	1.39	11,000	1.67	13,250	2.00	16,100	0.15 "	4 " "

The above weights are for 12 feet laying lengths and standard sockets; proportionate allowance will be made for any variation therefrom.

**Variation in thickness.**

30 198. For pipes whose standard thickness is less than 1 inch, the thickness of metal in the body of the pipe shall not be more than 0.08 inch less than the standard thickness; and for pipes whose standard thickness is 1 inch or more, the variation shall not exceed 0.10 inch, except that for areas not exceeding 8 inches in any direction, variations from the standard thickness of 0.02 inch in excess of the allowance above given will be permitted.

**Coating.**

40 199. All cast iron pipe shall be thoroughly and evenly coated inside and outside with coal tar pitch varnish. The coating shall be smooth, tough and tenacious when cold and shall not be brittle or have any tendency to scale off.



EXHIBIT C-212 (*continued*):

Marking.

200. The weight and class letter shall be conspicuously painted by the manufacturer with white oil paint on the inside of each pipe after the coating is hard.

10 201. Joints of cast iron pipe sewers shall be of the kinds shown on the plan.

Lead joints.

202. When lead joints are required, the inner portion of the annular space between the pipes shall be packed with clean, sound jute packing yarn, and the remaining portion shall be run full of pure soft lead and calked with suitable tools. Unless otherwise shown on the plan the depths of the lead joints shall be 2½ inches for 6-inch to 8-inch pipe, 3 inches for 12-inch to 24-inch pipe and 3½ inches for 30-inch to 48-inch pipe.

20 Mortar joints.

203. When gasket and mortar joints or plain mortar joints are required they shall be made as specified in paragraphs 184 and 185.

204. All the requirements, as hereinbefore specified, relating to excavation, laying, backfillings and measurement of vitrified pipe sewers shall apply, as far as they are applicable, to cast iron pipe sewers.

30 Prices to cover.

205. The cost of all C. I. pipe and the requirements in connection therewith shall be covered by the contract price for the structure in connection with which it is used.

BASIN CONNECTIONS.

40 206. The connections between receiving basins or inlet basins and sewers or manholes shall be of 12-inch vitrified pipe, unless otherwise shown on the plan. The pipes shall be of the same quality and dimensions, and laid in the same manner as hereinbefore specified for vitrified pipe sewers.

Measurement.

207. The lengths of basin connections to be paid for will be determined by measurements along their axes.

EXHIBIT C-212 (*continued*):

Prices to cover.

208. The contract price for basin connections shall cover the cost of all necessary excavation (except rock); of all necessary trimming, fitting and building into concrete, or masonry; of all backfilling; and of all labor and materials required to furnish and lay the basin connections complete in place as specified.

SPURS FOR HOUSE CONNECTIONS.

213. Spurs for house connections shall be of vitrified pipe 6 inches in diameter, equal in quality and dimensions to that specified for vitrified pipe sewers.

In concrete sewers.

214. In concrete sewers spurs shall be built in as shown on the plan or as directed. They shall be hub and spigot pipes with the spigot end molded or cut to fit flush with the inner surface of the sewer, and of sufficient length to reach the exterior of the sewer.

Covers.

216. The ends of all spurs not connected with drains shall be closed with approved covers. If required such covers shall be cemented in place, and when directed the covers shall be so cemented before the pipes are lowered into the trench.

Price to cover.

217. The contract price for spurs shall cover the cost of all labor and materials required to furnish and place the same as specified, and the cost of furnishing and cementing the covers for the same.

DRAINS FOR HOUSE CONNECTIONS.

218. Where shown on the plan or where directed, drains for house connections shall be built from the spurs in such a manner and for such distance as may be shown or directed.

Depth at curb.

219. House connections drains shall be laid with a minimum gradient of  $\frac{1}{4}$  inch to a foot, and wherever possible the

EXHIBIT C-212 (*continued*) :

depth from curb grade to the inner bottom of the drain at curb line shall be at least 8 feet.

Material.

- 20           220. Unless otherwise shown on the plan, drains for house connections shall be of vitrified pipe of the quality and dimensions specified for vitrified pipe sewers. The ends of the drains shall be closed with approved covers.

How laid.

221. All the requirements; as hereinbefore specified, relating to excavation, laying and backfilling of vitrified pipe sewers shall apply, as far as they are applicable, to drains for house connections.

Measurement.

- 20           222. The lengths of pipe drains for house connections to be paid for will be determined by measurement along their axes.

Price to cover.

- 30           223. The contract price for drains for house connections shall cover the cost of all necessary excavation (except rock); the cost of all backfilling; the cost of all covers, bends and specials required; and the cost of all labor and materials required to furnish and lay the drains for house connections complete in place, as specified.

MANHOLES.

227. The masonry or concrete for manholes shall be built to within such distances of the existing surface of the ground as directed.

Brick manholes.

- 40           228. Brick manholes shall be formed by means of templets placed at top and bottom with not less than 8 lines drawn between them, and they shall be smoothly and evenly plastered on the outside with a layer of mortar  $\frac{1}{2}$ -inch thick. When manholes extend above the existing surface of the ground, the entire exposed surface shall be coated with 2 coats of whitewash.

EXHIBIT C-212 (*continued*):

Concrete manholes.

229. Concrete manholes shall be built of the materials, sizes and dimensions shown on the plan.

Steps.

10 230. Galvanized wrought iron steps of the size and shape shown on the plan shall be firmly built into the manholes at vertical intervals of about 16 inches.

Head and cover.

20 231. The manhole head and cover shall be of cast iron, and unless otherwise shown on the plan, each head, exclusive of cover, shall weigh not less than 475 pounds and each cover shall weigh not less than 135 pounds. The weight of each head and cover shall be conspicuously painted thereon by the manufacturer with white oil paint. The head shall be set on the masonry or concrete in a full bed of stiff mortar.

Price to cover.

233. The contract price for manholes shall cover the cost of all necessary excavation (except rock); of all backfilling; of plastering; of all concrete slabs; of all steps, when required; and of all labor and materials required to construct the same complete, in place, as shown on the plan and specified.

30

BASIN MANHOLES

Brick basin manholes.

234. Brick basin manholes shall be formed by means of templets placed at top and bottom with not less than 10 vertical lines drawn between them.

40 235. Where the walls of brick basin manholes are not built of two rings of brickwork with a mortar layer between, the inside of the brickwork shall be smoothly and even plastered with a layer of 1 : 2 Portland cement mortar  $\frac{1}{2}$  inch thick.

236. Where the wall of the basin manhole consists of two rings of brickwork, with a mortar layer between, the outer ring shall be carried up not less than 1 foot in advance of the inner ring, and the inner surface of the former shall be plastered with two coats of mortar. The second coat of mortar shall be applied

EXHIBIT C-212 (*continued*) :

before the first is set, and the total thickness of the mortar layer shall be 1 inch.

Concrete basin manholes.

10 237. Concrete basin manholes shall, if required, be built in such a manner that the bottom and sidewalks shall be formed in one continuous operation. Concrete basins shall be coated with a grout of neat cement on the inside.

Concrete cover slabs.

238. Concrete cover slabs of basin manholes shall be built of Class "A" concrete, reinforced as shown on plan.

Head cover and trap.

20 239. The basin manhole head and cover shall be of cast iron, as shown on plan, and known as a Standard Sidewalk Manhole Head and Cover. Each head exclusive of cover shall weigh not less than 260 pounds and each cover shall weigh not less than 100 pounds. An iron hood or trap, of the size and dimensions shown on the plan, must be furnished by the Contractor for each basin manhole and is to be built into the basin manhole, as shown on plan.

Restoration of sidewalks, curbs, etc.

30 240. All sidewalk pavements and curbs, disturbed by the construction of basin manholes, shall be restored by the Contractor in accordance with the specifications for similar work of the Bureau of Highways.

Price to cover.

40 241. The contract price for basin manholes shall cover the cost of all necessary excavation (except rock); of all back-filling; of all sidewalk and curb restorations and of all labor and materials required to construct the basin manholes complete in place, as shown on the plan and specified.

INLETS.

242. Inlets and the heads therefor shall be of the materials, forms and dimensions shown on the plan. The specifications for brickwork and concrete shall be those hereinbefore specified for basin manholes.

EXHIBIT C-212 (*continued*) :

Heads.

243. The head shall be of cast iron and shall conform in all respects to the specifications for iron castings. If required, the inlets shall be closed with bulkheads of brick masonry and such bulkheads shall be removed when directed.

10 Restoration of roadway pavements, etc.

244. All roadway pavements, sidewalk pavements and curbs, disturbed by the construction of inlets, except those under guarantee for maintenance shall be restored by the Contractor in accordance with the specifications of the Bureau of Highways for similar work or specifications hereafter attached. In unpaved streets and macadamized streets where the inlets are approximately at the surface of the street a space of two and one-half ( $2\frac{1}{2}$ ) feet adjoining such inlets shall, if required, be paved with approved paving blocks.

20 Price to cover.

245. The contract price for inlets shall cover the cost of all necessary excavation (except rock); of all backfilling; of the temporary brick bulkheads in the mouths of the inlets, when required; of all roadway, sidewalk and curb restorations; of all labor and materials required to construct the inlets, complete in place, as shown on the plan and specified.

30 PARK INLET BASINS.

243. Park inlet basins and the heads and covers therefor shall be of the materials, forms and dimensions shown on the plan. If required, the mouths of park inlet basins shall be closed with bulkheads of brick masonry and such bulkheads shall be removed when directed.

Price to cover.

40 244. The contract price for park inlet basins shall cover the cost of all necessary excavation (except rock); of all backfilling; and of all labor and materials required to construct the park inlet basins complete, in place, as shown on the plan and specified.

EXHIBIT C-212 (continued):

EMBANKMENT.

Quality.

247. Where indicated on the plan, embankment shall be made of the form and dimensions shown. It shall consist of clean steam ashes or filling of the quality specified in paragraph 31, which shall contain no stone over 6 inches in its largest dimension. When the material forming the embankment contains stones, the latter shall be so distributed through the mass that all interstices are filled with fine material, and the material within 2 feet shall be free of stones. When embankment is used as foundation it shall consist entirely of filling of the quantity specified in paragraph 30.

How made.

248. The embankment shall be deposited and spread in horizontal layers to such an extent and at such times as may be directed. If required, such portion of the embankment as may be deemed necessary shall be made prior to the construction of the sewer or its foundation and any excavation that may be necessary for the building of the sewer and its foundation shall be made therein. When embankment is used as a foundation, the ground on which it is to be made shall be prepared by grubbing and clearing, and removing all improper material. Embankment used as foundation shall be deposited in uniform horizontal layers not exceeding 1 foot in depth, and each layer shall be thoroughly compacted by rolling or tamping or both; such embankment shall not be built upon until the expiration of 90 days after its completion.

Approaches.

249. Where the embankment obstructs or interferes in any way with any public or private roadway the Contractor shall furnish and place all material necessary to provide suitable approaches, of such widths and to such extent as shown on the plan or as directed.

250. All embankments and approaches shall be maintained at their full dimensions until the completion of this contract.

Cost covered.

251. The cost of all labor and materials required to prepare the ground, to make the embankment and approaches as specified, to make all necessary excavations and backfilling

EXHIBIT C-212 (*continued*):

therein, and to maintain the embankments and approaches at their designated dimensions until the completion of this contract, shall be covered by the contract price for fill for sewer embankment.

Temporary restoration.

- 10        258. At such times as may be directed roadway and sidewalk pavements, crosswalks, curbs, etc., which have been removed, whether under guarantee or not, shall be temporarily restored by the Contractor to the satisfaction of the Engineer.

When new pavement is laid.

- 20        260. If pavement, sidewalks, crosswalks, curbs, etc., are laid where none existed at the time the bids for this contract were opened, the Contractor shall excavate and remove such portions of the pavements, sidewalks, crosswalks, curbs, etc., and their foundations as may be necessary for the prosecution of the work, but he will not be required to make a permanent restoration of them.

Trenches flooded.

261. Before laying any pavements, sidewalks, crosswalks, curbs, etc., the trenches shall, if required, be flooded with water, as directed, and all resulting holes or depressions shall be filled and tamped solid.

- 30    Unnecessary cross gutters.

262. All cross gutters rendered unnecessary by the work under this contract shall be removed and the entire street intersection or so much thereof as may be necessary shall be regraded and repaved as herein specified.

Cleaning up.

- 40        263. At such times as may be directed the Contractor shall remove from the streets, all materials which were placed thereon by him as a consequence of performing this work and which are not required by the contract to be left as part of the finished work. The entire work and portions of the streets affected thereby shall be left in a satisfactory condition. The sidewalks and crosswalks shall be swept clean of all material which may have come thereon by reason of the work under this contract, and if required, they shall be sprinkled with water during the sweeping.



EXHIBIT C-212 (*continued*):

EXHIBIT C-213:

Cost to be covered.

264. The cost of all the labor required to be done and all the materials required to be furnished in the performance of all the work specified in paragraphs 254 to 263 inclusive, shall be covered by all the contract prices for all the items for which there are contract prices.

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EXHIBIT C-213.

(*Assignment of Contract No. 51832 from Porter & DeWitt and Angelo Paino & Co., dated September 11th, 1919.*)

20       KNOW ALL MEN BY THESE PRESENTS, that we, PORTER and DE WITT, of Edgewater, New Jersey, for and in consideration of the sum of One Dollar and other good and valuable consideration, to us in hand paid by ANGELO PAINO & CO., of 2016 East 14th Street, Borough of Brooklyn, City of New York, receipt whereof is hereby acknowledged, have sold, assigned, transferred and set over and by these presents, do hereby sell, assign, transfer and set over unto the said ANGELO PAINO & CO., a certain contract bearing the date of August 27, 1919, numbered 51832, entered into between the said Porter and  
30       deWitt and the City of New York:

40       “For the construction of sanitary and storm water sewers and appurtenances in 32nd (Myrtle) Ave., from Union St., (Whitestone Ave.) to Lawrence Ave., and in Lawrence Ave., from 32nd (Myrtle) Ave., to Willetts Point Boulevard; a storm water sewer and a temporary screening plant and appurtenances in Willetts Point Boulevard (Road) from Lawrence Ave., to Flushing River and a cut-off and overflow chamber and appurtenances in Linden St., at 32nd (Myrtle) Ave., together with so much of the pumping station at Linden St., and 32nd (Myrtle) Ave., as may be necessary to provide for pumping a flow at the rate of 576,000 gallons per day, Third Ward, of the Borough of Queens.”

together with all our rights, privileges and interests therein, and also all moneys due or to grow due; and all claims of every nature

EXHIBIT C-213 (*continued*):

under this contract, which we now have or hereafter may have against the City of New York, or others by reason thereof; and we do hereby constitute the said Angelo Paino & Co., our true and lawful attorney, with authority to do and perform any convenient or necessary action connection therewith in our name, place and stead as fully and in the same manner as we could do in person; hereby ratifying all our said attorney or its substitute shall lawfully do in the premises.

TO HAVE AND TO HOLD unto the said ANGELO PAINO & CO., its successors or assigns.

IN WITNESS WHEREOF, we have hereunto set our hand and seal this 11th day of September, 1919.

WITNESS: PORTER and deWITT,  
WM. F. MATHEWS. By WM. J. PORTER.

CITY & STATE OF NEW YORK, COUNTY OF QUEENS, s.s.:

On this 11th day of September, 1919, before me personally came WILLIAM J. PORTER, to me known and known to me to be a member of the firm of Porter and deWitt the firm described in and which executed the foregoing instrument and he acknowledged to me that he subscribed the name of said firm thereto on behalf of said firm for the purposes therein mentioned.

WILLIAM P. BUCKLEY,  
Commissioner of Deeds  
City of New York  
Certificate Filed in Queens County.

KNOW ALL MEN BY THESE PRESENTS, that we, ANGELO PAINO & CO., do hereby accept this contract herein assigned to us and agree to perform the work herein stipulated to be done in accordance with the specifications and to comply in all respects with each and every condition therein contained.

WITNESS: ANGELO PAINO & CO.  
By ANGELO PAINO.  
WM. F. MATHEWS. FRANK SPINELLA.  
ALBERT DECKER.

EXHIBIT C-213 (*continued*):

CITY & STATE OF NEW YORK, COUNTY OF QUEENS, s.s.:

On this 11th day of September, 1919, before me personally came ANGELO PAINO, FRANK SPINELLA and ALBERT DECKER, to me known and known to me to be all the members of the firm of ANGELO PAINO & CO., the firm described in and which executed the foregoing instrument and they acknowledged to me that they executed the same for the purposes therein mentioned.

WILLIAM P. BUCKLEY,  
Commissioner of Deeds  
City of New York  
Certificate Filed in Queens County.

The undersigned, UNITED STATES FIDELITY & GUARANTY COMPANY, MARYLAND CASUALTY COMPANY, NEW AMSTERDAM CASUALTY COMPANY, and the LONDON & LANCASHIRE INDEMNITY COMPANY, Sureties on the bond of PORTER and DE WITT, hereby consent to the assignment of contract dated August 27th, 1919, numbered 51832, entered into between the said PORTER and DE WITT, and the City of New York for the construction of sewers in 32nd (Myrtle) Ave., etc., to ANGELO PAINO & CO., a co-partnership consisting of Angelo Paino, Frank Spinella and Albert Decker.

Dated New York, September 11, 1919.

United States Fidelity and Guaranty Company.  
By ALONZO GORE OAKLEY,  
Attorney-in-fact.

Attest: E. MANSON,  
Attorney-in-fact.

Maryland Casualty Company,  
By E. B. McCONNELL,  
Attorney-in-fact.

New Amsterdam Casualty Company,  
By E. W. BROOKS,  
Vice President.

Attest: WM. L. MCGINTY,  
Assistant Secretary.

London & Lancashire Indemnity Company  
of America,

By M. A. CRAIG,  
Attorney-in-fact.

Attest: R. R. DICKINSON,  
Attorney-in-fact.

EXHIBIT C-213 (*continued*) :

EXHIBIT C-25:

APPROVED, September 19th, 1919, in accordance with the terms and conditions of Contract No. 51832.

FRANK X. SULLIVAN,  
Acting President, Borough of Queens.

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EXHIBIT C-25.

(*City Record, October 11, 1919.*)

PROPOSALS

20 SEALED BIDS WILL BE RECEIVED BY the President of the Borough of Queens at his office, 4th floor, Queens Subway Building, Hunterspoint and Van Alst aves., L. I. City, until 11 a. m., on

THURSDAY, OCTOBER 9, 1919,

No. 1. For the construction of sewers and appurtenances in:

- LINDEN ST., from 32nd (Myrtle) Ave. to 35th Ave. (State St.);  
35TH AVE. (STATE ST.), from Linden St. to Prince St.;
- 30 PRINCE ST., from 35th Ave. (State St.) to 36th Ave. (Warren St.);  
and trunk (low level) sewers and appurtenances in  
PRINCE ST., from 36th Ave. (Warren St.) to 37th Ave. (Washington St.);  
37TH AVE. (WASHINGTON ST.), from Prince St. to Lawrence St.;
- LAWRENCE ST., from 37th Ave. (Washington St.) to 40th Ave. (Amity St.);  
and lateral (high level) sewers and appurtenances in:
- 40 PRINCE ST., from 36th Ave. (Warren St.) to a point about 35 feet southerly therefrom;  
37TH AVE. (Washington St.), from Prince St. to a point about 20 feet westerly therefrom and from the summit about 380 feet easterly from Lawrence St. to Lawrence St.;
- LAWRENCE ST., from 37th Ave. (Washington St.) to 40th Ave. (Amity St.), Third Ward, Borough of Queens, together with all the work incidental thereto.

EXHIBIT C-25 (continued) :

The Engineer's estimate of the quantities is as follows :

TYPE "A" OR SEWER DEPARTMENT STANDARD.

- 2,122 linear feet 8-foot 0-inch double barrel circular reinforced concrete sewer.
- 115 linear feet 8-foot 0-inch double barrel curve section.
- 10 215 linear feet 7-foot 3-inch circular reinforced concrete sewer.
- 1,200 linear feet 7-foot 3-inch circular tunnel sewer (free air).
- 722 linear feet 7-foot 3-inch circular tunnel sewer (compressed air).
- 20 linear feet 2-foot 6-inch concrete sewer.
- 1,143 linear feet 12-inch vitrified pipe sewer.
- 41 linear feet 12-inch cast iron pipe sewer.
- 13 manholes on concrete sewers.
- 1 special manhole on 2-foot 6-inch sewers in Lawrence st. near Amity st.
- 20 12 manholes on vitrified pipe sewers.
- 6 basin manholes.
- 18 inlets.
- 150 linear feet 12-inch vitrified pipe, basin connection.
- 360 linear feet 10-inch vitrified pipe, basin connection.
- 318 vertical feet risers for house connections.
- 85 six-inch spurs (24 inches long) on concrete sewers.
- 106 six-inch spurs on vitrified pipe sewers.
- 1,028 linear feet 6-inch vitrified pipe, house connection drains.
- 30 1 junction chamber at Prince st. and Northern Boulevard.
- 1 junction chamber on 2-foot 6-inch sewer at Amity st. and Lawrence st.
- 1 tunnel shaft (No. 1) at Prince st. and 36th ave.
- 1 tunnel shaft (No. 2) at Prince st. and 37th ave.
- 1 tunnel shaft (No. 3) at Lawrence st. and 37th ave.
- 1 tunnel shaft (No. 4) at Lawrence st. and 40th ave.
- 44,000 linear feet timber piling.
- 80,000 feet board measure foundation timber.
- 10,000 feet board measure timber for sheeting and bracing.
- 40 8,000 pounds structural steel (bolts, nuts, washers, etc.).
- 1,475 linear feet old bluestone curb to be reset only (not to be cut).
- 300 square yards old bluestone sidewalk to be reset (not to be cut).
- 1,065 linear feet wooden fence furnished and built as shown on plan.

EXHIBIT C-25 (*continued*) :

- 1,220 square yards water bound macadam pavement to be constructed as shown on plan and in accordance with specifications.
- 1,500 cubic yards Class "A" concrete for retaining walls and cradle.
- 85,000 pounds reinforcement steel for retaining walls and cradle.
- 10 18,000 feet board measure yellow pine timber and lumber for the construction of stairs in front of improved property, including all labor and materials necessary to construct the above in accordance with the general plan of typical stairs as shown.
- 20 20 cubic yards rock excavation.
- 6,000 cubic yards displaced material from the sewers for the construction of sewer embankment.
- 200 cubic yards cinder fill, furnished and placed on embankment, as shown.
- 20 350 cubic yards (approximately) earth excavation for retaining walls.
- 10,000 pounds semi-steel, exclusive of semi-steel shown on plan.
- 100 cubic yards of grout, furnished and placed, exclusive of grout specified for tunnel sewers.
- 400 square yards cobble stone gutter, to be constructed as shown on plan, and in accordance with specifications.
- 100 cubic yards of excess grit in place.

TYPE "B"

- 30 2,122 linear feet 8-foot 0-inch double barrel circular reinforced concrete pipe sewer, precast Type "B."
- 115 linear feet 8-foot 0-inch double barrel curve section.
- 215 linear feet 7-foot 3-inch reinforced concrete pipe sewer, precast Type "B."
- 1,200 linear feet 7-foot 3-inch precast concrete tunnel sewer (free air).
- 722 linear feet 7-foot 3-inch precast concrete tunnel sewer (compressed air).
- 40 20 linear feet 2-foot 6-inch concrete pipe sewer, precast Type "B."
- 1,143 linear feet 12-inch vitrified pipe sewer.
- 41 linear feet 12-inch cast iron pipe sewer.
- 13 manholes on concrete sewers.
- 1 special manhole on 2-foot 6-inch sewers in Lawrence st. near Amity st.
- 12 manholes on vitrified pipe sewers.

EXHIBIT C-25 (continued):

- 6 basin manholes.
- 18 inlets.
- 150 linear feet 12-inch vitrified pipe, basin connection.
- 360 linear feet 10-inch vitrified pipe, basin connection.
- 318 vertical feet risers for house connections.
- 85 six-inch spurs (24 inches long on concrete sewers).
- 106 six-inch spurs on vitrified pipe sewers.
- 10 1,028 linear feet 6-inch vitrified pipe, house connection drains.
  - 1 junction chamber at Prince st. and Northern Boulevard.
  - 1 junction chamber on 2-foot 6-inch sewer at Amity st. and Lawrence st.
  - 1 tunnel shaft (No. 1) at Prince St. and 36th ave.
  - 1 tunnel shaft (No. 2) at Prince st. and 37th ave.
  - 1 tunnel shaft (No. 3) at Lawrence st. and 37th ave.
  - 1 tunnel shaft (No. 4) at Lawrence st. and 40th ave.
- 44,000 linear feet timber piling.
- 80,000 feet board measure foundation timber.
- 20 10,000 feet board measure timber for sheeting and bracing.
- 8,000 pounds structural steel (bolts, nuts, washers, etc.).
- 1,475 linear feet old bluestone curb to be reset only (not to be cut).
- 300 square yards old bluestone sidewalk to be reset (not to be cut).
- 1,065 linear feet wooden fence furnished and built as shown on plan.
- 1,220 square yards water bound macadam pavement to be constructed as shown on plan and in accordance with specifications.
- 30 1,500 cubic yards Class "A" concrete for retaining walls and cradle.
- 85,000 pounds reinforcement steel for retaining walls and cradle.
- 18,000 feet board measure yellow pine timber and lumber for the construction of stairs in front of improved property, including all labor and materials necessary to construct the above in accordance with the general plan of typical stairs as shown.
- 40 20 cubic yards rock excavation.
- 6,000 cubic yards displaced material from the sewers for the construction of sewer embankment.
- 200 cubic yards cinder fill, furnished and placed on embankment, as shown.
- 350 cubic yards (approximately) earth excavation for retaining walls.

EXHIBIT C-25 (continued):

EXHIBIT C-214:

- 10,000 pounds semi-steel, exclusive of semi-steel shown on plan.
- 100 cubic yards of grout, furnished and placed, exclusive of grout specified for tunnel sewers.
- 400 square yards cobble stone gutter, to be constructed as shown on plan, and in accordance with specifications.
- 10 100 cubic yards of excess grit in place.

The quantities for rock excavation and 10,000 feet board measure timber for sheeting and bracing are for the purpose of securing prices in the event that rock is encountered and that timber may be necessary.

The time allowed for completing the above work will be three hundred and fifty (350) working days.

20 The amount of security required will be Three Hundred Thousand Dollars (\$300,000).

Deposit with bids must be made in the sum of \$15,000.

30 The bidder must state the price of each item or article contained in the specification or schedule herein contained, or hereafter annexed, per square yard, linear foot or other unit of measure, by which bids will be tested. Bids will be compared and contract awarded at a lump or aggregate sum, either on Type A or Type B. Blank forms may be obtained and the plans or drawings may be seen at the office of the President of the Borough of Queens.

Dated, Oct. 11, 1919.

o11.23 MAURICE E. CONNOLLY, President.

EXHIBIT C-214.

(Note of Wm. F. Mathews, payable to Angelo Paino & Company.)

40 \$12500. 00/100 Oct. 19, 1919.

Thirty days after date I promise to pay to the order of ANGELO PAINO & COMPANY, Twelve Thousand and Five Hundred and no/100 Dollars, at Lawyers Title & Trust Company, 44 Court Street. Value received.

WM. F. MATHEWS.

No. .... Due .....



EXHIBIT C-66:

EXHIBIT C-66.

(Letter from Maurice E. Connolly to Hon. Charles L. Craig,  
October 28th, 1919.)

CITY OF NEW YORK

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Office of the

PRESIDENT OF THE BOROUGH OF QUEENS

Maurice E. Connolly,  
President  
Joseph Flanagan,  
Borough Secretary  
Hugh Hall,  
Secretary to President

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15560 Long Island City, October 28, 1919.

Hon. Charles L. Craig, Comptroller,  
City of New York.

Sir:—

Pursuant to the authority vested in me by law, I beg to  
inform you that I have this day rejected all bids opened in this  
Office on October 23, 1919, in connection with contemplated con-  
tract;—

30

“TYPE ‘A’ OR SEWER DEPARTMENT STANDARD.

For the construction of sewers and appurtenances in  
LINDEN STREET from 32nd (Myrtle) Ave. to 35th Ave.  
(State St.);

35TH AVENUE (State St.) from Linden St., to Prince St.;  
PRINCE STREET from 35th Ave. (State St.), to 36th  
Ave. (Warren St.); and trunk (low level) sewers  
and appurtenances in

40

PRINCE STREET from 36th Ave. (Warren St.) to 37th  
Ave. (Washington St.);

37TH AVENUE (Washington St.) from Prince St. to  
Lawrence St.;

LAWRENCE STREET from 37th Ave. (Washington St.)  
to 40th Ave. (Amity St.) and lateral (high level)  
sewers and appurtenances in

EXHIBIT C-66 (*continued*):

EXHIBIT C-65:

10 PRINCE STREET from 36th Ave. (Warren St.) to a  
point about 35 ft. southerly therefrom;  
37TH AVENUE (Washington St.) from Prince St. to a  
point about 20 ft. westerly therefrom and from the  
summit about 380 feet easterly from Lawrence St.  
to Lawrence St.;

LAWRENCE STREET from 37th Ave. (Washington St.)  
to 40th Ave. (Amity St.), Third Ward, of the Bor-  
ough of Queens."

Yours very truly,

MAURICE E. CONNOLLY,  
President of the Borough of Queens.  
WPB-PJH

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EXHIBIT C-65.

(*Letter from Maurice E. Connolly to Hon. Charles L. Craig,  
October 28th, 1919.*)

CITY OF NEW YORK

Office of the

30

PRESIDENT OF THE BOROUGH OF QUEENS

Maurice E. Connolly,  
President

Joseph Flanagan,  
Borough Secretary

Hugh Hall,  
Secretary to President

40 15560 Long Island City, October 28, 1919.

Hon. Charles L. Craig, Comptroller,  
City of New York.

Sir:—

Pursuant to the authority vested in me by law, I beg to  
inform you that I have this day rejected all bids opened in this

EXHIBIT C-65 (*continued*) :

Office on October 23, 1919, in connection with contemplated contract;—

“TYPE ‘B’

10 For the construction of sewers and appurtenances in  
LINDEN STREET from 32nd (Myrtle) Ave. to 35th Ave.  
(State St.);  
35TH AVENUE (State St.) from Linden St., to Prince St.;  
PRINCE STREET from 35th Ave. (State St.), to 36th  
Ave. (Warren St.); and trunk (low level) sewers  
and appurtenances in  
PRINCE STREET from 36th Ave. (Warren St.) to 37th  
Ave. (Washington St.);  
37TH AVENUE (Washington St.) from Prince St. to  
Lawrence St.;  
20 LAWRENCE STREET from 37th Ave. (Washington St.)  
to 40th Ave. (Amity St.) and lateral (high level)  
sewers and appurtenances in  
PRINCE STREET from 36th Ave. (Warren St.) to a  
point about 35 ft. southerly therefrom;  
37TH AVENUE (Washington St.) from Prince St. to a  
point about 20 ft. westerly therefrom and from the  
summit about 380 feet easterly from Lawrence St.  
to Lawrence St.;  
30 LAWRENCE STREET from 37th Ave. (Washington St.)  
to 40th Ave. (Amity St.), Third Ward, Borough of  
Queens, together with all work incidental thereto.”

Yours very truly,

MAURICE E. CONNOLLY,  
President of the Borough of Queens.  
WPB-PJH



EXHIBIT C-17:

EXHIBIT C-17.

10 (Contract between the City of New York and O'Rourke  
Engineering Construction Co., for the construction of sewer and  
appurtenances in Linden Street from 32nd (Myrtle) Ave. to  
35th Ave. (State St.) 35th Avenue (State St.) from Linden St.  
to Prince St.; Prince Street from 35th Ave. (State St.) to 36th  
Ave. (Warren St.); and trunk (low level) sewers and appurte-  
nances in Prince Street from 36th Ave. (Warren St.) to 37th Ave.  
(Washington St.); 37th Avenue (Washington St.) from Prince  
St. to Lawrence St.; Lawrence Street from 37th Ave. Washington  
20 St.) to 40th Ave. (Amity St.) and lateral (high level) sewers and  
appurtenances in Prince Street from 36th Ave. (Warren St.) to  
a point about 35 feet southerly therefrom; 37th Ave. (Washing-  
ton St.) from Prince St. to a point about 20 feet westerly there-  
from and from the summit about 380 feet easterly from Law-  
rence St. to Lawrence St.; Lawrence St. from 37th Ave.  
(Washington St.) to 40th Ave. (Amity St.) Third Ward of the  
Borough of Queens, on January 19th, 1920.)

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ANNEXES TO THE CONTRACT.

---

30 THE CITY OF NEW YORK—DEPARTMENT OF FINANCE  
Office of the Comptroller

---

CONTRACT SUMMARY

Contractor: O'ROURKE ENGINEERING CONSTRUCTION  
CO. No. 52633

40 Names of sureties: National Surety Co. & The United States  
Fidelity & Guaranty Co. Mass. Bonding &  
Insurance Co. — Globe Indemnity Co.

Amount to bond: \$300,000.00

Date of award: January 8, 1920; Department: President,  
Borough of Queens; Date of contract: January 19, 1920; Borough:  
Queens; Date of expiration: 350 consecutive working days; Date  
of filing: January 16, 1920; Damages: \$100 per day; Date paid  
in full: 9/30/24.

EXHIBIT C-17 (Continued):

DESCRIPTION OF WORK

Type "B" Construction

10 For the construction of sewer and appurtenances in Linden Street from 32nd (Myrtle) Ave. to 35th Ave. (State St.) 35th Avenue (State St.) from Linden St. to Prince St.; Prince Street from 35th Ave. (State St.) to 36th Ave. (Warren St.); and trunk  
20 (low level) sewers and appurtenances in Prince Street from 36th Ave. (Warren St.) to 37th Ave. (Washington St.); 37th Avenue (Washington St.) from Prince St. to Lawrence St.; Lawrence Street from 37th Ave. (Washington St.) to 40th Ave. (Amity St.) and lateral (high level) sewers and appurtenances in Prince Street from 36th Ave. (Warren St.) to a point about 35 feet southerly therefrom ; 37th Ave. (Washington St.) from Prince St. to a point about 20 feet westerly therefrom and from the summit about 380 feet easterly from Lawrence St. to Lawrence St; Lawrence St. from 37th Ave. (Washington St.) to 40th Ave. (Amity St.) Third Ward of the Borough of Queens.

Original estimate, \$876,061.80

ACCOUNTS TO BE CHARGED

C. F. M. 25

30 The obligation on this surety bond ceases as to anything occurring after September 19, 1923.

If the conditions of the contract have been complied with, the retained percentage (if any) is due on or after September 19, 1923.

GEORGE W. MARTIN,  
Examiner.

LIENS AND ASSIGNMENTS

40 Assignment filed 1/30/20, John J. Creem, "Certain Items" all money.

Assignment filed, 3/11/22, United States Fidelity and Guaranty Co. by O'Rourke E. C. Co., \$20,000.00.

5/21/23, Dwit Inc., Satisfied \$15,391.42.

EXHIBIT C-17 (*Continued*):

BOARD OF ESTIMATE AND APPORTIONMENT

City of New York

(Cal. No. 467)

10 A copy of a resolution of the Local Board of the NEW-TOWN & JAMAICA District, duly adopted by said Board on the 18th day of June, 1919 and approved by the President of the Borough of Queens on the 5th day of July, 1919, having been transmitted to the Board of Estimate and Apportionment, as follows, to wit:

“RESOLVED, That this Board does hereby initiate proceedings for the said local improvement, to wit:

20 “For the construction of a sewer and appurtenances in LINDEN St. from 32nd (Myrtle) Av. to 35th Av. (State St.); 35TH AV. (STATE St.) from Linden St. to Prince St., PRINCE ST. from 35th Av. (State St.) to 36th Av. (Warren St.); and trunk (low level) sewer and appurtenances in PRINCE ST. from 36th Av. (Warren St.) to 37th Av. (Washington St.); 37TH AV. (Washington St.) from Prince St. to Lawrence St; LAWRENCE ST. from 37th Av. (Washington St.) to 40th Av. (Amity St.) and lateral (high level) sewers and appurtenances in PRINCE ST. from 36th Av. (Warren St.) to a point about  
30 35’0” southerly therefrom; 37TH AV. (WASHINGTON ST.) from Prince St. to a point about 20’0” westerly therefrom and from the summit about 380’0” easterly from Lawrence St. to Lawrence St., LAWRENCE ST. from 37th Av. (Washington ST.) to 40th Av. (Amity St.). Third Ward of the Borough of Queens.

and thereupon, on the 13th day of June, 1918 and 18th day of July, 1919 resolutions having been adopted by the Board of Estimate and Apportionment authorizing the President of the  
40 Borough of Queens to prepare the necessary plans, specifications and an estimate of the cost of the proposal improvement based on actual survey and further that the Board of Estimate and Apportionment will consider the authorization of the construction of the proposed improvement after the President of the Borough of Queens has submitted certain statements as provided in the said resolution, and the said resolution having been duly

EXHIBIT C-17 (*Continued*):

10 complied with by the President of the Borough of Queens, as appears by papers and documents on the files of the Board of Estimate and Apportionment, and there having been presented to the Board of Estimate and Apportionment an *estimate in writing in such detail as the Board has directed*, that the cost of the proposed work or improvement, together with the preliminary expenses will be the sum of \$687,100.; and a statement of the assessed value according to the last preceding tax roll of the real estate included within the probable area of assessment, to wit, the sum of \$23,798,000, having also been presented, it is

20 **RESOLVED**, That the said resolution of the Local Board be and the same is hereby approved and the construction of the local improvement therein provided for is hereby authorized. This Board does hereby determine that no portion of the cost and expense thereof shall be borne and paid by The City of New York, but that the whole of such cost and expense, including the aforesaid preliminary expenses, shall be assessed upon the property deemed to be benefited by the said local improvement.

I hereby certify that the foregoing is a true copy of a resolution adopted by the Board of Estimate and Apportionment at a meeting of said Board held on July 18, 1919.

Dated, New York, August 6, 1919.

(Signed) JAMES MATTHEWS,  
Assistant Secretary,  
Board of Estimate and Apportionment.

30 JCD



EXHIBIT C-17 (Continued) :

CONTRACT NO. 52633

The City of New York

ADVICE OF AWARD OF CONTRACT

(This Copy to be retained by Bookkeeping Division,  
Department of Finance).

10

Dep't of President of the Borough of Queens.

\*Date January 8th, 1920

Comptroller of The City of New York :

Please take notice that the following described contract  
has this day\* been awarded to Contractor O'Rourke Engineering  
Construction Co., Address 17 Battery Place, New York City.

20

SURETIES

AMT. OF BOND

\$75,000

\$300,000.00

National Surety Company, 115 Broadway

\$75,000

The United States Fidelity & Guaranty Co.,  
66 Liberty St., N. Y.

\$75,000

Massachusetts Bonding & Insurance Co.,  
21-29 Pine Street.

30

\$75,000

Globe Indemnity Company,  
45 William St., N. Y. City

21129

DETAILS OF PURPOSE OF CONTRACT

Type "B" Construction.

40

For the construction of sewer and appurtenances in  
LINDEN STREET from 32nd (Myrtle) Ave. to 35th Ave.  
(State St.); 35TH AVENUE (State St.) from Linden St. to  
Prince St.; PRINCE STREET from 35th Ave. (State St.) to  
36th Ave. (Warren St.); and trunk (low level) sewers and  
appurtenances in PRINCE STREET from 36th Ave. (Warren St.)  
to 37th Ave. (Washington St.); 37TH AVENUE (Washington

EXHIBIT C-17 (Continued):

10 St.) from Prince St. to Lawrence St.; LAWRENCE STREET from 37th Ave. (Washington St.) to 40th Ave. (Amity St.) and lateral (high level) sewers and appurtenances in PRINCE STREET from 36th Ave. (Warren St.) to a point about 35 feet southerly therefrom; 37TH AVENUE (Washington St.) from Prince St. to a point about 20 feet westerly therefrom and from the summit about 380 feet easterly from Lawrence St. to Lawrence St. LAWRENCE ST. from 37th Ave. (Washington St.) to 40th Ave. (Amity St.) Third Ward.

Contract Chargeable to Code No.	Estimated Amount	Contracts Previously Awarded (Including Adjustments)	Open Market Orders Issued To Date (Including Adjustments)	Misc. Vouchers, Payrolls, and Other Charges
CFM 25	\$876,061.80	\$1,545,789.87	\$89,685.23	\$28,092.52

20 Enter full titles of accounts below and refer to code numbers by means of line numbers in margin.

Street Improvement Fund.

Yours respectfully,

MAURICE E. CONNOLLY,  
President, Borough of Queens.

30 \* This will be the date of the entry by which the fund is charged with the estimate amount of the contract both in the department making the award and by the Department of Finance. There must therefore be no delay in forwarding this advice.

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TYPE "B"

- 40 1,220 Square Yards Water Bound Macadam Pavement to be Constructed as shown on plan and in accordance with specifications, Per Square Yard, One 50/100, Dollars (\$1.50).
- 1,500 Cubic Yards Class "A" Concrete for Retaining Walls and Cradle, Per Cubic Yard, Twenty 00/100 Dollars (\$20.00).
- 85,000 Lbs. Reinforcement Steel for Retaining Walls and Cradle, Per Lb., Ten Cents (0.10).

EXHIBIT C-17 (Continued):

- 18,000 Feet B. M. Yellow Pine Timber and Lumber for the construction of stairs in front of improved property, including all labor and materials necessary to construct the above in accordance with the general plan and typical stairs, as shown, Per 1,000 Feet B. M., Eighty 00/100 Dollars (\$80.00).
- 10      20 Cubic Yards Rock excavation, Per Cubic Yard, Five 00/100 Dollars, (\$5.00).
- 6,000 Cubic Yards Displaced Materials from the Sewers for the construction of Sewer Embankment, Per Cubic Yard, Twenty Five Cents (0.25).
- 200 Cubic Yards Cinder Fill, furnished and placed on embankment as shown, Per Cubic Yard, One 00/000 Dollars (\$1.00).
- 350 Cubic Yards (approximately) Earth Excavation for Retaining Walls, Per Cubic Yard, Two 00/000 Dollars (\$2.00).
- 20      10,000 Lbs. Semi-Steel, exclusive of Semi-Steel shown on plan, Per Lb., One Cent (0.01).
- 100 Cubic Yards Grout, furnished and placed, exclusive of Grout specified for Tunnel Sewers, Per Cubic Yard Thirty 00/100 dollars (\$30.00).
- 400 Square Yards Cobble Stone Gutter to be constructed as shown on plan in accordance with specifications, Per Square Yard, Fifty Cents (0.50).
- 30      100 Cubic Yards of excess grit in place per Cubic Yard Thirty 00/100 (\$30.00).
- The quantities for rock excavation and 10,000 feet B. M. timber for sheeting and bracing, are for the purpose of securing prices in the event that rock is encountered and that timber may be necessary.
- 2,122 Linear Feet 8'-0" Double Barrel Circular Reinforced Concrete Sewer, Per Linear Foot, One Hundred and Eighty Two 50/100 Dollars (\$182.50).
- 115 Linear Feet 8'-0" Double Barrel Curve Section, Per Linear Foot, One Hundred Ninety 00/100 Dollars (\$190.00).
- 40      215 Linear Feet 7'-3" Reinforced Concrete Pipe Sewer, Precast Type "B", Per Linear Foot, One Hundred 00/000 \$100.00)
- 1,200 Linear Feet 7'-3" Precast Concrete Tunnel Sewer (Free Air) Per Linear Foot, One Hundred Fifty Five 00/000 Dollars (\$155.00).

EXHIBIT C-17 (Continued):

- 722 Linear Feet 7'-3" Precast Concrete Tunnel Sewer (Compressed Air) Per Linear Foot, One Hundred Fifty Five 00/100 Dollars (\$155.00).
- 20 Linear Feet 2'-6" Reinforced Concrete Pipe Sewer, Precast Type "B", Per Linear Foot, Twenty Five 00/100 Dollars (\$25.00).
- 10 1,143 Linear Feet 12", Vitrified Pipe Sewer, Per Linear Foot, Three 50/100 Dollars (\$3.50).
- 41 Linear Feet 12" Cast Iron Pipe Sewer, Per Linear Foot, Six 00/100 Dollars (\$6.00)
- 13 Manholes on Concrete Sewers, Complete, Each Three Hundred 00/1000 Dollars (\$300.00).
- 1 Special Manhole on 2'-6" Sewer in Lawrence St. near Amity St., Complete, Three Hundred 00/100 Dollars (\$300.00).
- 20 12 Manholes on Vitrified Pipe Sewers, Complete, Each, One Hundred 00/100 Dollars (\$100.00).
- 6 Basin Manholes, Complete, Each, One Hundred 00/100 Dollars (\$100.00).
- 18 Inlets, Complete, Each, Fifty 00/100 (\$50.00).
- 150 Linear Feet 12" Vitrified Pipe, Basin Connection, Per Linear Foot, Two 00/100 Dollars (\$2.00).
- 360 Linear Feet 10" Vitrified Pipe, Basin Connection, Per Linear Foot, Two 00/100 Dollars (\$2.00).
- 30 318 Vertical Feet Risers for House Connection, per Vertical Foot, Three 00/100 Dollars (\$3.00).

EXHIBIT C-17 (*Continued*):

THE CITY OF NEW YORK

Office of

THE PRESIDENT OF THE BOROUGH OF QUEENS

10 Maurice E. Connolly  
President

Joseph Flanagan  
Borough Secretary

Hugh Hall  
Secretary to President

Long Island City, January 23, 1920.

20 The Honorable Charles L. Craig,  
Comptroller of the City of New York,

Sir:—

I beg to transmit herewith for registration in the Department of Finance, the following contract;—

30 “For the construction of sewers and appurtenances  
in LINDEN STREET from 32nd (Myrtle) Ave. to 35th  
Ave., (State St.) 35TH AVENUE (State St.) from  
Linden St. to Prince St.  
PRINCE STREET from 35th Ave. (State St.) to 36th Ave.  
(Warren St.) and trunk (low level) sewers and  
appurtenances in  
PRINCE STREET from 36th Avenue (Warren St.) to  
37th Ave. (Washington St.),  
37TH AVENUE (Washington St.) from Prince St. to  
Lawrence St.  
LAWRENCE STREET from 37th Ave (Washington St.)  
to 40th Ave. (Amity St.) and lateral (high level)  
40 sewers and appurtenances in  
PRINCE STREET from 36th Ave. (Warren St.) to a point  
about 35 feet southerly therefrom  
37TH AVENUE (Washington St.) from Prince St. to a  
point about 20 feet westerly therefrom and from the  
summit about 380 feet easterly from Lawrence St. to  
Lawrence St.,

EXHIBIT C-17 (*Continued*):

LAWRENCE STREET from 37th Ave. (Washington St.)  
to 40th Ave., (Amity St.) Third Ward, Borough of  
Queens, together with all work incidental thereto."

Yours very truly,

MAURICE E. CONNOLLY,

President of Borough of Queens.

10 WPB-PJH    encl.

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City of New York

DEPARTMENT OF FINANCE

CHARLES L. CRAIG, Comptroller

CHARLES F. KERRIGAN, Secretary to the Department

20 LOUIS H. HAHLO,  
Deputy Comptroller

ARTHUR J. PHILBIN,  
Deputy Comptroller

FRANK J. PRIAL,  
Deputy Comptroller

PATRICK A. WHITNEY,  
Assistant Deputy Comptroller.

In Replying Refer to  
Audit.

March 13, 1920.

30 Mr. Chandler Withington,  
Chief Engineer.

Sir :

I transmit herewith a modification of contract #52,633 with  
O'Rourke Engineering Construction Company, for the construc-  
tion of sewers in the Borough of Queens, which modification has  
been executed and approved by the sureties to the contract.

40 Kindly make report as to the reasonableness of the sub-  
division of the original unit items so that the modification may  
be submitted to the Corporation Counsel for his requisite  
approval.

Yours very truly,

LOUIS H. HAHLO,  
Deputy Comptroller.

enc.

EXHIBIT C-17 (*Continued*):

The City of New York

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DEPARTMENT OF FINANCE

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Comptroller's Office

10

ENGINEERING.

March 26, 1920.

Mr. Chandler Withington,  
Chief Engineer.

Sir:—

20 Proposed agreement modifying contract (#52,633) between  
the City of New York, acting by the Borough President of Queens  
and John Creem, Assignee of the O'Rourke Engineering & Con-  
struction Company, for the construction of sewers on Linden St.  
from (Myrtle Ave.) to 35th Ave. (State St.) Prince St. from 35th  
to 36th Aves., etc., in the Borough of Queens is transmitted  
herewith.

The agreement provides for the subdivision of certain  
original unit items of work and fixed prices to be paid for said  
segregated items.

30

At present the respective fixed prices appear reasonable.

Respectfully,

.....  
Inspector.

40

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EXHIBIT C-17 (*Continued*):

City of New York

Office of the

PRESIDENT OF THE BOROUGH OF QUEENS

Maurice E. Connolly  
President

10

Joseph Flanagan  
Borough Secretary

Hugh Hall  
Secretary to President

Long Island City, May 20, 1920.

Hon. Charles L. Craig,  
Comptroller, City of New York.

20

Sir:—

Referring to contract, No. 52633:—

“For the construction of sewers and appurtenances  
in LINDEN STREET from 22nd (Myrtle) Avenue to 35th  
Avenue (State St.) etc., Third Ward of the Borough of  
Queens.”

30 I beg to inform you that the contractor, O'Rourke  
Engineering Construction Co., 17 Battery Place, New York City,  
has been ordered to commence the work embraced in said contract  
on June 1, 1920, or before five days from the receipt of his notice.

Yours very truly,

FRANK X. SULLIVAN,  
Acting President of the Borough of Queens.

WPB-PJH

40

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EXHIBIT C-17 (*Continued*):

AGREEMENT made this 4th day of April 1922 between THE CITY OF NEW YORK, hereinafter called the Party of the First Part, and John J. Creem of 203 Argyle Road, Brooklyn, N. Y., Assignee of the O'Rourke Engineering Construction Company of 17 Battery Place, New York City, hereinafter called Party of the Second Part:

10           WHEREAS, under date of January 19, 1920, a contract was entered into between THE CITY OF NEW YORK and the O'ROURKE ENGINEERING CONSTRUCTION COMPANY, designated as:

          #52633. For the construction of a sewer and appurtenances  
          in  
          LINDEN St. from 32nd (Myrtle) Ave. to 35th Ave.  
          (State St.)  
          35TH AVE (STATE ST.) from Linden St. to Prince St.  
20       PRINCE ST. from 35th Ave. (Warren St.) and trunk (low  
          level) sewer, etc. in  
          PRINCE ST. from 36th Ave to 37th Ave. (Washington  
          St.)  
          37TH AVE. from Prince St. to Lawrence St.  
          LAWRENCE ST. from 37th Ave. to 40th Ave. (Amity St.)  
          and lateral (high level) sewers etc. in  
          PRINCE ST. from 36th Ave. to a point 35'0" south there-  
          from.  
30       37TH AVE, from Prince St. to a point about 20'0" westerly  
          therefrom and from the summit about 380'0" easterly  
          from Lawrence Street to Lawrence Street, and in  
          LAWRENCE ST. from 37th Ave. to 40th Ave., Third  
          Ward; and

          WHEREAS, certain items of work to be done under the  
said contract have been assigned by the O'Rourke Engineering  
Construction Company to the assignee by instrument, dated Jan-  
uary 24, 1920, consented by the sureties of January 26, 1920,  
approved by the Borough on January 30, 1920; and

40           WHEREAS, among the items so assigned, appears "10,000  
feet B. M. Timber for Sheeting and Bracing at \$92.50 per 1,000  
feet"; and

          WHEREAS, on account of conditions it has become ne-  
cessary to order some of this sheeting left in place, but that the  
price bid for this item of \$92.50 is considered excessive, and that

EXHIBIT C-17 (*Continued*):

a price of \$65.00 per 1,000 feet B. M. is considered a just and fair price for this item; and

WHEREAS, paragraph VIII of the Contract, as originally executed, provides:

10            “This contract may be notified and changed from time to time, as may be previously agreed to in writing, between the parties hereto in a manner not materially affecting the substance thereof or increasing the contract price thereunder in order to carry out and complete more fully and perfectly the work herein agreed to be done and performed.”

20            1. NOW, THEREFORE, it is agreed that contract #52633, dated January 19, 1920, insofar as it was assigned by instrument dated January 24, 1920, be and the same is hereby modified to provide that upon the item “10,000 feet B. M. Timber for Sheeting and Bracing at \$92.50 per 1,000 feet”, the Party of First Part shall pay and the Party of the Second Part agrees to receive the sum of \$65.00 per 1,000 feet B. M. Timber for Sheeting and Bracing.

2. This agreement shall take effect if, and only when the written consents of the sureties upon said contract number 52633 shall be obtained and attached hereto.

30            IN WITNESS WHEREOF, the parties hereto have executed this agreement the day and year first above written.

MAURICE E. CONNOLLY,  
President of Borough of Queens,  
For the City of New York,

PARTY OF THE FIRST PART.

John J. Creem

40            JOHN J. CREEM, assignee of  
O'Rourke Engineering Construction Co.

PARTY OF THE SECOND PART.

The undersigned, UNITED STATES FIDELITY & GUARANTY COMPANY, NATIONAL SURETY COMPANY, MASSACHUSETTS BONDING & INSURANCE COMPANY

EXHIBIT C-17 (*Continued*):

and GLOVE INDEMNITY COMPANY, sureties upon the bond mentioned and described in the foregoing agreement, do hereby consent to the execution and delivery thereof by The City of New York to John J. Creem and hereby agree to be bound by the terms of our said original bond, executed and delivered herein.

Dated, New York, N. Y. 3/30/1922.

10

UNITED STATES FIDELITY AND  
GUARANTY COMPANY,

By Adolphus A. Jackson,  
Attorney in fact.

Attest: WILLIAM H. ESTWICK,  
Attorney in fact.

NATIONAL SURETY COMPANY,

20

By J. R. Wells,  
Vice President.

E. WEBSTER,  
Res. Asst. Secretary.

MASSACHUSETTS BONDING AND  
INSURANCE COMPANY,

By Arthur H. Bole,  
Attorney in fact.

30

Attest: ISAAC C. OGDEN,  
Attorney in fact.

GLOVE INDEMNITY COMPANY,

By Geo. W. Yuengling,  
Res. Vice President.

Attest: Milton S. Powell,  
Res, Ass't Secretary..

40

EXHIBIT C-17 (*Continued*):

City of New York

Office of

THE PRESIDENT OF THE BOROUGH OF QUEENS

Maurice E. Connolly  
President

10 Joseph Flanagan  
Borough Secretary

Hugh Hall  
Secretary to President

Long Island City, January 8th, 1923.

Hon. Charles L. Craig, Comptroller,  
Department of Finance,  
20 Municipal Building,  
New York City.

Sir :—

In accordance with the recommendation of the Engineer of Sewers, this Department, I have granted an extension of time of three hundred and two (302) working days, to the O'Rourke Engineering Construction Company, 17 Battery Place, New York, N. Y., in which to complete the work in connection with Contract No. 52633 :—  
30

For the construction of a sewer and appurtenances in LINDEN ST. from Myrtle Ave. to 35th Ave. (State St.) 35TH Ave. (STATE ST.) from Linden St. to Prince St., etc., etc., Third Ward.

The work on this contract began May 10, 1920 and the order to go to work was issued June 1, 1920. The work was completed July 29, 1922. This contract was one of the largest and most difficult sewer contracts which we have had in recent years.  
40 The lowest bidder was O'Rourke Engineering Contracting Co. of New York City, one of the oldest and most experienced contracting firms in the City of New York. The work, being of such magnitude and of such a difficult nature, the contractor requested and was allowed to assign part of the contract to John J. Creem of Brooklyn. The part of the work done by the O'Rourke Company was a tunnel sewer, lining of which was made of pre-

EXHIBIT C-17 (*Continued*):

cast concrete block. This part of the contract, after some difficulty in getting it started, proceeded satisfactorily and was finished almost within the contract time. The open cut part of the work done by Mr. Creem proved more difficult and caused the contract to run considerably overtime. During the time that this work was in progress, there were disturbances in both the labor market and the material market and it was very difficult  
10 to obtain either material or labor in sufficient quantity to carry on the work satisfactorily. Most of the labor used on this contract had to be imported from the Borough of Brooklyn. There was much congestion on the railroads at that time, making the movement of material very slow and at one time it was impossible to obtain cement at all.

Part of the open-cut work, i.e. in State St. from Linden St. to Prince St. and Prince St. from State St. to Broadway was laid out to be built under the tracks of the North Shore Traction Company. The North Shore Traction Company went into bankruptcy  
20 and abandoned this railroad altogether and ceased operation of the tracks. The contractor opened negotiations with the receivers of the railroad company with a view to having the tracks and ties removed, but was unable to obtain any action. These negotiations extended over a considerable period of time and the contractor appealed to the borough authorities to obtain action and we were likewise unable to have the tracks removed. The contractor eventually was forced to take up and remove the ties and tracks at his own expense. The contractor in the meantime proceeded  
30 from Myrtle Ave. toward State St. with one gang, although it was his intention to work two gangs from both ends of the contract.

During 1921 an investigation was started with a view to inquiring into the various contracts in the City of New York, which included also all contracts in the Borough of Queens. The contractor in this case was unable to obtain his money from your office for several months. On account of the failure to obtain money due, the contractor proceeded slower than he would otherwise have done, and finally, on February 11, 1921, suspended  
40 work altogether and did not resume work until June 5, 1922. During this period there were consumed 90 working days. The contractor is asking for an extension of time of 212 days and has, therefore, made a slight error, as the actual time consumed from start to finish, including these 90 days, was 302 working days. While, perhaps, the contractor is not responsible for this delay,

EXHIBIT C-17 (*Continued*):

we have computed this in the contract time the same as we have in other contracts, which were delayed during this time and for the same reason.

10 Water was encountered from the very beginning of this contract and continued throughout its length, necessitating constant pumping. To make matters more difficult, the outlet sewer in Myrtle Ave., through which this sewer drains and which it was anticipated would be finished before this contract was started, was very materially delayed and was not finished in time to give the contractor an outlet for the water, which he encountered, and it is for this reasons I granted an extension of time.

Very truly yours,

BENJAMIN MARIUN,  
Acting President of the Borough of Queens.

20

MODIFICATION AGREEMENT made this 11th day of January 1923, by and between THE CITY OF NEW YORK, acting through its Acting President of the Borough of Queens, the first party, and O'ROURKE ENGINEERING CONSTRUCTION COMPANY, contractor for the construction of sewers and appurtenances in Linden Street from 32nd (Myrtle) Avenue to 35th Avenue (State Street) and other streets, together with all the work incidental thereto, being contract No. 52,633, the 30 second party, and John J. CREEM, assignee of the open-cut work of said sewer under assignment from the second party dated March 5th, 1920, the third party.

40 WITNESSETH that whereas the second and third parties hereto completed the tunnel and the open-cut sewer under said contract No. 52,633 and its appurtenances, except paving, repaving and the restoration of certain streets and avenues which said pavement, etc., The City is not now in a position to have done and completed; and

WHEREAS, the removal of certain street-railway tracks and appliances has been necessary to the performance of the said work and the construction of the said sewer and The City is not now in a position to re-build, re-install and re-construct said tracks or said work cannot now be done under existing circumstances; and

EXHIBIT C-17 (*Continued*):

WHEREAS the said open-cut sewer and tunnel sewer have been built and completed for a period of six months or more and said sewer has been for several months and is now in service; and

WHEREAS the said second and third parties hereto have for several months made claims and urged the payment of the balance of the contract price, including retained percentage; and

10 WHEREAS the work, if now directed to be done would be required to be done in winter or inclement weather to the increased cost and expense of the contractors as well as to the detriment of the work itself and could not be completed until the spring or summer season of 1923; and

20 WHEREAS the second and third parties hereto are and have been ready and willing and have requested permission to complete the said pavement in accordance with the contract and specifications in order that their contract might be ultimately finished and completed;

NOW, THEREFORE, it is hereby mutually agreed as follows:

30 That the first party makes or will forthwith make the final estimate and certificate of the performance and completion of the said contract and that the same has been or will be made without prejudice to requiring the second and third parties hereto to perform and complete the said paving, repaving and restoration of streets and avenues not now paved or completed under the contract and specifications therefor and that The City or first party shall retain with the consent of the second party and third party Twelve Thousand Six Hundred Dollars (\$12,600.00) which the parties agree is adequate and sufficient to make full restoration of said pavements, etc., to insure the performance and completion of said paving or re-paving and restoration of said streets, which moneys are withheld and retained solely for the purpose of the restoration of said streets and ways; said sum of \$12,600. so  
40 retained to be held and retained in the same manner and subject to all the terms and conditions of said contract that would apply to the sum now retained by The City.

The said sum of \$12,600 is retained by The City of New York in lieu of the aggregate retained percentages mentioned and described in the contract and under all the provisions, conditions and stipulations in said contract contained.

EXHIBIT C-17 (*Continued*):

This agreement is made conditionally upon the consent of the sureties on said original contract No. 52,633 and shall not take effect until said consent is duly obtained.

This agreement shall in no way affect any of the terms or provisions of said contract No. 52,633 except as expressly provided herein.

10 IN WITNESS WHEREOF, the parties hereto have executed this agreement the day and year first above written.

THE CITY OF NEW YORK

By Benjamin Mariun,  
Acting President of the Borough of Queens.

O'ROURKE ENGINEERING  
CONSTRUCTION CO.

20 By John F. O'Rourke,  
President.

John J. Creem,

Attest INNIS O'ROURKE,  
Secretary.

THE CITY AND STATE OF NEW YORK, ss :  
COUNTY OF QUEENS,

30 On this 11th day of January 1923, before me personally came BENJAMIN MARUIN to me known and known to me to be the Acting President of the Borough of Queens, of The City of New York, the person described as such in and who as such executed the foregoing instrument, and he acknowledged to me that he executed the same as said Acting President for the purposes therein mentioned.

40 JEFFERSON J. REILLY,  
Commissioner of Deeds,  
City of New York,  
Certificate Filed in Queens County.



EXHIBIT C-17 (*Continued*):

THE CITY AND STATE OF NEW YORK, ss :  
COUNTY OF NEW YORK,

10 On this 16th day of November, 1922, before me personally came JOHN F. O'ROURKE to me known and known to me to be the President of the O'ROURKE ENGINEERING CONSTRUCTION COMPANY who being by me duly sworn, did depose and say for himself that he resides in Great Neck, Long Island, N. Y.; that he is the President of the O'Rourke Engineering Construction Company, the corporation described in and which executed the above instrument; that he knew the corporate seal of said corporation; that the seal affixed to the said instrument is such corporate seal; that it was so affixed by order of the Board of Directors of said O'Rourke Engineering Construction Company and that, by like order, he hereunto signed his name and official designation.

20

P. W. TURNER,  
Notary Public, Westchester County  
Certificate filed in N. Y. Co. No. 111  
Register's No. 3106  
Commission expires March 30, 1923

THE CITY AND STATE OF NEW YORK, ss :  
COUNTY OF NEW YORK,

30 On this 16th day of November, 1922, before me personally came JOHN J. CREEM to me known and known to me to be the person described in and who executed the foregoing instrument, and he acknowledged to me that he executed the same for the purposes therein mentioned.

40

P. W. TURNER,  
Notary Public, Westchester County  
Certificate filed in N. Y. Co. No. 111  
Register's No. 3106  
Commission expires March 30, 1923

The undersigned, UNITED STATES FIDELITY & GUARANTY COMPANY, NATIONAL SURETY COMPANY, MASSACHUSETTS BONDING AND INSURANCE COMPANY, sureties upon the bond mentioned and described in the foregoing assignment, do hereby consent to the execution and delivery thereof by the O'Rourke Engineering Construction Com-

EXHIBIT C-17 (*Continued*):

pany to John J. Creem, and hereby agree to be bound by the terms of our said original bond executed and delivered herein.

Dated November 15th 1922.

UNITED STATES FIDELITY AND  
GUARANTY COMPANY,

10

By C. D. Marsac,  
Attorney in fact.

Attest: Charles E. Finken,  
Attorney in fact.

NATIONAL SURETY COMPANY,

Edward G. Eibler,  
Vice-President.

20

Attest : H. C. Jenkins,,  
Res. Ass't Secretary.

MASSACHUSETTS BONDING AND  
INSURANCE COMPANY,

By Harvey Self,  
Resident Secretary.

30

Attest: Arthur H. Poole,  
Attorney in fact.

GLOBE INDEMNITY COMPANY,

By Geo. W. Yuengling,  
Resident Vice-President.

Attest : Frances Drake,  
Resident Ass't. Secretary.

40

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EXHIBIT C-17 (Continued):

Audit

January 17, 1923

Hon. Maurice E. Connolly,  
President, Borough of Queens,  
Long Island City, N. Y.

10 Sir :—

An agreement has been filed in the Department of Finance dated January 11, 1923 purporting to modify contract #52633 entered into with O'Rourke Engineering Construction Company for the construction of sewers and appurtenances in Linden Street and other streets in the Borough of Queens.

20 The agreement recites that the sewers have been completed excepting the paving, repaving and restoration of certain streets and avenues which the City is not now in position to have done and completed. It also recites that the removal of certain street railway tracks and appliances has been necessary to the performance of the work and the construction of the sewer and that the City is not now in a position to rebuild, re-install and reconstruct said tracks and said work cannot now be done under existing circumstances.

30 In view of the fact that the sewer has been completed and in use for several months it is proposed to retain the sum of \$12,600. to insure the paving or repaving and restoration of the streets, the said sum to be held and retained in the same manner and subject to all the terms and conditions of the said contract that would apply to the sum now retained by the City.

It appears that the contractor was ordered to begin work on June 1, 1920 and under the terms of the contract the work was to be completed before the expiration of 350 consecutive working days.

40 Action on the agreement will be withheld by this office for the reason that the Corporation Counsel has not endorsed thereon his approval as to form and for the further reason that the agreement does not set forth a state of facts which sufficiently explains the necessity for such an agreement,

Yours truly,

.....  
Deputy Comptroller.

EXHIBIT C-17 (*Continued*):

MODIFICATION AGREEMENT made this 21st day of February, 1923, by and between THE CITY OF NEW YORK, acting through its Acting President of the Borough of Queens, the first party, and O'ROURKE ENGINEERING CONSTRUCTION COMPANY, contractor for the construction of sewers and appurtenances in Linden Street from 32nd (Myrtle) Avenue to 35th Avenue (State Street) and other streets, together with all the work incidental thereto, being contract No. 52,633, the second party, and JOHN J. CREEM, assignee of the open-cut work of said sewer under assignment from the second party dated March 5th, 1920, the third party.

WITNESSETH that whereas the second and third parties have completed the tunnel and the open-cut sewer under said contract No. 52,633 and its appurtenances, except the repaving at the intersection of Broadway and Prince Street, which repaving was done by the Bureau of Highways of the Borough of Queens at the cost of \$1,582.85, after John J. Creem had refused to restore the pavement at said intersection and except certain other paving, repaving and restoration of certain streets and avenues; and

WHEREAS the aforesaid paving, repaving and restoration of certain streets and avenues cannot be properly done now;

IT IS HEREBY AGREED between the parties hereto that the party of the first part will forthwith make a certificate for payment to the parties of the second and third parts all of the money earned by them under the aforesaid contract deducting therefrom the sum of \$1,582.35 to reimburse the City for moneys expended by the City for repaving at the intersection of Broadway and Prince Street, and also the sum of \$4,000.00 to be retained by the City for six months for repairs to street surfaces as provided under said contract and also the sum of \$12,600.00 to be retained as security for the paving, repaving and restoration of streets and avenues where such work had not yet been done under the aforesaid contract, the aforesaid sums totalling the amount of \$18,182.85 shall be deducted and retained from the moneys certified for payment to O'Rourke Engineering Construction Company.

IT IS FURTHER AGREED between the parties hereto that John J. Creem will perform the work of paving, repaving and restoration of streets and avenues, which work cannot now be

EXHIBIT C-17 (*Continued*):

properly done, at such times as the Borough President will hereafter direct.

10 This agreement shall not become effective unless and until it is consented to in writing by UNITED STATES FIDELITY & GUARANTY COMPANY, NATIONAL SURETY COMPANY, MASSACHUSETTS BONDING AND INSURANCE COMPANY and GLOBE INDEMNITY COMPANY, sureties on the bond given to the City to secure the faithful performance of the aforesaid contract of O'Rourke Engineering Construction Company.

IN WITNESS WHEREOF, the parties hereto have executed this agreement in quadruplicate.

THE CITY OF NEW YORK,

20 By Benjamin Marvin,  
Acting President, Borough of Queens.

O'ROURKE ENGINEERING CONSTRUCTION COMPANY,

By John F. O'Rourke,  
President.

John J. Creem,

30 Attest: Innis O'Rourke,  
Secretary.

THE CITY AND STATE OF NEW YORK, ss :  
COUNTY OF NEW YORK,

40 On this 21st day of February, 1923, before me personally came BENJAMIN MARVIN, to me known and known to me to be the Acting President of the Borough of Queens, of The City of New York, the person described as such in and who such executed the foregoing instrument, and he acknowledged to me that he executed the same as said Acting President for the purposes therein mentioned.

JEFFERSON J. REILLY,  
Commissioner of Deeds,  
City of New York.  
Certificate Filer in Queens County.

EXHIBIT C-17 (*Continued*):

THE CITY AND STATE OF NEW YORK, ss :  
COUNTY OF NEW YORK,

On this 19th day of February, 1923, before me personally came JOHN F. O'ROURKE to me known and known to me to be the President of the O'ROURKE ENGINEERING CONSTRUCTION COMPANY who being by me duly sworn, did depose and  
10 say for himself that he resides in Great Neck, Long Island, New York; that he is the President of the O'Rourke Engineering Construction Company, the corporation described in and which executed the above instrument; that he knew the corporate seal of said corporation; that the seal affixed to the said instrument is such corporate seal: that it was so affixed by order of the Board of Directors of said O'Rourke Engineering Construction Company and that by like order, he hereunto signed his name and official designation.

20

MYER E. SCHULMAN,  
NOTARY PUBLIC, Kings County  
Clerk's No. 389, Register's No. 4452  
Certificate Filed in New York County  
Clerk's No. 1226, Register's No. 4151A  
Commission Expires March 30, 1924.

THE CITY AND STATE OF NEW YORK, ss. :  
COUNTY OF NEW YORK,

30 On this 19th day of February, 1923, before me personally came JOHN J. CREEM to me known and known to me to be the person described in and who executed the foregoing instrument, and he acknowledged to me that he executed the same for the purposes therein mentioned

40

MYER E. SCHULMAN,  
NOTARY PUBLIC, Kings County  
Clerk's No. 389, Register's No. 4452  
Certificate Filed in New York County  
Clerk's No. 1226, Register's No. 4151A  
Commission Expires March 30, 1924.

The undersigned, UNITER STATES FIDELITY AND GUARANTY COMPANY, NATIONAL SURETY COMPANY, MASSACHUSETTS BONDING AND INSURANCE COMPANY, sureties upon the bond given to the City to secure the faithful performance by O'Rourke Engineering Construction

EXHIBIT C-17 (*Continued*):

Company of the contract mentioned and described in the annexed agreement, do hereby consent to the execution and delivery of said agreement by the O'Rourke Engineering Construction Company and John J. Creem to the City of New York, and hereby agree that the aforesaid bond shall be and remain security for the faithful performance of the aforesaid contract as modified by the assignment executed by O'Rourke Engineering Construction Company and as further modified by the annexed agreement.

Dated New York, February 20th, 1923.

UNITED STATES FIDELITY AND  
GUARANTY COMPANY,

By Charles E. Finken,  
Attorney in fact.

Attest: Kearn J. Mullen,  
Attorney in fact.

20

NATIONAL SURETY COMPANY,

Edward G. Eibler,  
Vice President.

Attest: B. G. Podlesney,  
Res. Ass't Secretary.

MASSACHUSETTS BONDING AND  
INSURANCE COMPANY,

By Arthur H. Poole,  
Attorney in fact.

30

Attest: Isaac C. Ogden,  
Attorney in fact.

GLOBE INDEMNITY COMPANY,

Fred C. Williams,  
Res. Vice President.

George Furze,  
Res. Ass't Secretary.

40

EXHIBIT C-17 (Continued) :

CORPORATION

General Release

To all to whom these Presents shall come or may concern,  
Greeting :

10 KNOW YE, that O'ROURKE ENGINEERING CON-  
STRUCTION CO., 17 Battery Place, New York, for and in con-  
sideration of the sum of Eight hundred, eighty seven 47/100  
Dollars, lawful money of the United States of America, to it paid  
by The City of New York, the receipt of which is hereby acknow-  
ledged, have remised, released and forever discharged, and by  
these presents does for itself, its successors and assigns, remise,  
release and forever discharge the said The City of New York,  
20 their successors and assigns, of and from all and all manner of  
action and actions, cause and causes of action, suits, debts, dues,  
sums of money, accounts, reckonings, bonds, bills, specialties,  
covenants, contracts, controversies, agreements, promises,  
variances, trespasses, damages, judgments, extents, executions,  
30 claims and demands whatsoever in law or in equity, which against  
them it ever had, now has or which it or its successors or assigns  
hereafter can, shall or may have, for, upon or by reason of a  
certain contract or agreement made the 19th day of January  
A. D., 1920, by and between O'ROURKE ENGINEERING CON-  
STRUCTION CO., and the said The City of New York, for Con-  
tract No. 52,633, Sewer, Linden St. &c., or by reason of any  
matter, cause or thing whatsoever resulting or arising therefrom  
from the begining of the world to the day of the date of these  
presents. Exception claim \$85,000.00 and retained security  
\$18,182.85. See original release.

IN WITNESS WHEREOF, O'Rourke Engineering Con-  
struction Co., has caused its corporate seal to be affixed hereto  
and its corporate name to be signed to these presents by its  
President, this 30th day of April, in the year one thousand, nine  
hundred and twenty three.

40

O'ROURKE ENGINEERING  
CONSTRUCTION CO.,

By John F. O'Rourke,  
President.

Sealed and delivered in the presence of  
Innis O'Rourke,  
Secretary.

Seal

[L. S.]



EXHIBIT C-17 (*Continued*):

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

10         On this 30th day of April 1923, before me personally came John F. O'Rourke to me known, who being by me duly sworn, did depose and say that he resided in New York that he is the President of the O'Rourke Eng. Const. Co., the Corporation described in and which executed the above instrument, that he knew the seal of said Corporation; that the seal affixed to said instrument was such corporate seal; that it was so affixed by order of the Board of Directors of said Corporation, and that he signed his name thereto by like order.

20                             W. F. HEFFERNAN,  
                                  Notary Public,  
                                  Commissioner of Deeds.  
                                  Comm. of Deeds, N. Y. City  
                                  Residing in N. Y. County  
New York County Clerks No. 10  
Term Expires Jan. 10, 1924

30         AGREEMENT made this first day of October 1923, between THE CITY OF NEW YORK, hereinafter called Party of the First Part, O'Rourke Engineering Construction Company, Contractor, as Party of the Second Part and John J. Creem of 23 Argyle Road, Brooklyn, N. Y. as Party of the Third Part, Witnesseth:

       WHEREAS, under date of January 19, 1920, a contract was entered into between THE CITY OF NEW YORK and the O'Rourke Engineering Construction Company, designated as:

40                     \$52,633. For the construction of a sewer and appurtenances in LINDEN STREET from 32nd (Myrtle) Avenue to 35th Avenue (State Street);  
35TH AVENUE (STATE STREET) from Linden St., to Prince St.,  
PRINCE STREET from 35th Ave. to 36th Ave. (Warren St) and a trunk (low level) sewer, etc., in  
PRINCE STREET from 36th Ave. to 37th Ave. (Washington St.);  
37TH AVENUE from Prince St. to Lawrence St.

EXHIBIT C-17 (*Continued*):

LAWRENCE STREET from 37th Ave. to 40th Ave.  
(Amity St.) and lateral (high level) sewers, etc., in  
PRINCE STREET from 36th Ave. to a point 35'0" south,  
therefrom;

10 37TH AVENUE from Prince St., to a point about 20'0"  
westerly therefrom and from the summit about 380'0"  
easterly from Lawrence Street to Lawrence Street,  
and in

LAWRENCE STREET from 37th Ave. to 40th Ave.,  
Third Ward; and

WHEREAS, certain items of work to be done under the  
said contract have been assigned by the O'Rourke Engineering  
Construction Company to said John J. Creem by instrument,  
dated January 24, 1920, consented by the sureties on January  
26, 1920, approved by the Borough President on January 30, 1920;  
and

20 WHEREAS, among the work so assigned, the pavement  
disturbed in the construction of the sewer was to be replaced by  
the said John J. Creem; and

WHEREAS by agreement between the parties hereto,  
dated February 21, 1923, it was among other things agreed that  
the City shall retain Twelve thousand six hundred Dollars  
(\$12,600.00) as security for the paving, repaving and restoration  
of streets and avenues and such work has not yet been done under  
30 the aforesaid contract; and

WHEREAS, under Chapter 425 of the Laws of 1921, the  
City of New York is obligated to assume seventy percent (70%)  
of the cost of the repaving of Linden Street between Myrtle Ave-  
nue and Broadway at such time as the street is repaved and  
public interest requires that Linden Street be repaved now with  
sheet asphalt pavement on a concrete foundation, and to lay a  
bituminous macadam pavement in State Street from Linden  
Street to North Prince Street instead of a waterbound macadam  
40 pavement, and a bituminous macadam pavement in North Prince  
Street from State Street to Broadway instead of asphaltic con-  
crete pavement, the said changes in the types of pavements will  
result in a saving to the City of Nine hundred twenty-four  
Dollars and fifty cents (\$924.50); and

WHEREAS, paragraph VIII of the Contract, as originally  
executed, provides:

EXHIBIT C-17 (*Continued*):

“This contract may be modified and changed from time to time, as may be previously agreed to in writing between the parties hereto in a manner not materially affecting the substance thereof or increasing the contract price thereunder, in order to carry out and complete more fully and perfectly the work herein agreed to be done and performed.”

10

NOW THEREFORE, it is agreed that Contract No. 52633 dated January 19, 1920, be and the same do hereby modified to provide for the omission of 1,400 square yards of water-bound macadam pavement in Linden Street between Myrtle Avenue and State Street, and the City shall be entitled to deduct and retain for its own use because of said omission the sum of \$1,750.00, out of the aforesaid \$12,600.00 or \$1.25 per square yard of pavement omitted; and in place of 775 square yards of asphaltic concrete pavement, required to be laid in Prince Street  
20 between State Street and Broadway, there shall be laid 775 square yards of bituminous macadam pavement, and the City shall be entitled to deduct and retain out of the aforesaid \$12,600.00 for its own use because of said substitution the sum of \$1.00 per square yard of pavement substituted as aforesaid; and in place of 2134 square yards of water-bound macadam pavement, required to be laid in State Street between Linden Street and Prince Street, there shall be laid 2134 square yards of bituminous macadam pavement and the contractor shall be entitled to the  
30 sum of 75c per square yard of such substituted pavement or a total sum of \$1,600.00, thus giving the City a net deduction of \$924.50, out of the aforesaid \$12,600.00, and the said John J. Creem agrees to make said substitutions.

30

It is understood and agreed, however, that the Assignee John J. Creem makes claim that he has done certain fine grading preparatory to paving said Linden Street between Myrtle Avenue and State Street, at an expense to him of \$937.30, which claim has not been taken into account in the foregoing modification, and it is understood that said claim is not released or liquidated by the  
40 Assignee John J. Creem, nor is it conceded by the City of New York.

40

This agreement shall take effect if, and only, when the written consents of the sureties upon said contract number 52,633 shall be obtained and attached hereto.

EXHIBIT C-17 (*Continued*):

IN WITNESS WHEREOF, the parties hereto have executed this agreement the day and year first above written.

Maurice E. Connolly,  
President of the Borough of Queens.  
FOR THE CITY OF NEW YORK

10

O'ROURKE ENGINEERING CON-  
STRUCTION COMPANY.  
Party of the Second Part.

By John F. O'Rourke,  
President.

John J. Creem.

20 The undersigned, UNITED STATES FIDELITY AND  
GUARANTY COMPANY, NATIONAL SURETY COMPANY,  
MASSACHUSETTS BONDING AND INSURANCE COM-  
PANY and GLOBE INDEMNITY COMPANY, sureties upon  
the bond mentioned and described in the foregoing agreement, do  
hereby consent to the execution and delivery thereof and hereby  
agree to be bound by the terms of our said original bond, ex-  
ecuted and delivered herein.

Dated August 29, 1923.

30 UNITED STATES FIDELITY AND  
GUARANTY COMPANY,  
By C. D. Marsac,  
Attest: Charles E. Finken, Attorney in fact.  
Attorney in fact.

NATIONAL SURETY COMPANY,  
By Edward G. Eibler,  
Attest: B. G. Podlesney, Vice President.  
Res. Ass't Secretary.

40 MASSACHUSETTS BOND AND  
INSURANCE CO.,  
By Harvey Self,  
Attest: Arthur H. Poole, Resident Secretary.  
Attorney in fact.

GLOBE INDEMNITY COMPANY,  
By George Furze,  
Attest: France Drake, Attorney in fact.  
Res. Ass't Secretary.

EXHIBIT C-17 (*Continued*):

STATE OF NEW YORK, ss. :  
COUNTY OF QUEENS,

10 On this first day of October 1923 before me personally came MAURICE E. CONNOLLY, to me known and known to me to be the President of the Borough of Queens of the City of New York, the person described as such in and who as such executed the foregoing instrument, and he acknowledged to me that he executed the same as such President for the purposes therein mentioned.

JEFFERSON J. REILLY,  
Commissioner of Deeds, Queens Co.  
Queens Co.

20 STATE OF NEW YORK, ss. :  
COUNTY

On this 28th day of August 1923, before me personally came JOHN J. CREEM to me known and known to me to be the person described in and who executed the foregoing instrument, and acknowledged to me that he executed the same for the purposes mentioned.

30 P. W. TURNER,  
Notary Public or Commissioner of Deeds.  
Notary Public, Westchester County.  
Certificate filed in N. Y. Co. No. 99.  
Register's No. 5105.  
Commission expires March 30, 1925.

STATE OF NEW YORK, ss. :  
COUNTY OF,

40 On this 28th day of August, 1923, before me personally came JOHN F. O'ROURKE to me known, who, being by me duly sworn, did depose and say, for himself, that he resides in The City of New York and that he is the President of the O'Rourke Engineering Construction Company, the corporation described in, and which executed the above instrument; that he knows the corporate seal of said corporation; that the seal affixed to the said instrument is such corporate seal; that it was so affixed by order of the Board of Directors of said corporation

EXHIBIT C-17 (*Continued*):

and that by like order he thereunto signed his name and official designation.

10

P. W. TURNER,  
Notary Public or Commissioner of Deeds.  
Notary Public, Westchester County.  
Certificate filed in N. Y. Co. No. 99.  
Register's No. 5105.  
Commission expires March 30, 1925.

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THE CITY OF NEW YORK

DEPARTMENT OF FINANCE

BUREAU OF AUDIT — DIVISION OF ADMINISTRATION,

20

MUNICIPAL BUILDING, ROOM 631

\$4,000.\*\*

New York, Sep. 30, 1924

RECEIVED from CHARLES L. CRAIG, Comptroller,  
Warrant N. 180,629 for the sum of Four thousand.\*\*\*\*\* Dollars,  
on account of the within Contract numbered 52,633 for and in  
Full of repairing security Duit Inc, Assignee of O'Rourke Eng.  
Const. Co.

30

Mailed September 30, 1924.

W. F. HEFFERMAN,  
Disbursing Clerk.

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40

EXHIBIT C-17 (*Continued*) :

NOTICE.—Bidders are particularly requested to carefully examine the Proposal for Bids, Form of Agreement, Specifications, Plan and the location of the work and the surroundings thereof before bidding.

No. 6

10

THE CITY OF NEW YORK

Office of

THE PRESIDENT OF THE BOROUGH OF QUEENS

BUREAU OF SEWERS

1919

ASSESSMENT WORK

20

Proposal for Bids, Bid, Bond, Agreement and Specifications for the construction of sewers and appurtenances in

LINDEN STREET from 32nd (Myrtle) Av. to 35th Av. State St.);

35TH AVENUE (STATE ST.) from Linden St. to Prince St.;

LINDEN STREET from 35th Av. (State St.) to 36th Av. (Warren St.) and trunk (low level) sewers and appurtenances in

30

PRINCE STREET from 36th Avenue (Warren St.) to 37th Av. (Washington St.);

37TH AVENUE (WASHINGTON ST.) from Prince St. to Lawrence St. ;

LAWRENCE STREET from 37th Av. (Washington St.) to 40th Av. (Amity St.) and lateral (high level) sewers and appurtenances in

PRINCE STREET from 36th Av. (Warren St.) to a point about 35 feet southerly therefrom

40

37TH AVENUE (WASHINGTON St.) from Prince St. to a point about 20 feet westerly therefrom and from the summit about 380 feet easterly from Lawrence St. to Lawrence St.;

LAWRENCE STREET from 37th Av. (Washington) to 40th Av. (Amity St.) Third Ward, Borough of Queens, together with all the work incidental thereto.

EXHIBIT C-17 (Continued):

THE CITY OF NEW YORK  
OFFICE OF THE PRESIDENT OF THE BOROUGH  
OF QUEENS

BUREAU OF SEWERS

10

CONTRACT FOR

the construction of sewers and appurtenances in  
LINDEN STREET from 32nd (Myrtle) Av. to 35th Av.  
(State St.);

35TH AVENUE (STATE ST.) from Linden St. to  
Prince St.;

20

PRINCE STREET from 35th Av. (State St.) to 36th Av.  
(Warren St.) and trunk (low level) sewers and  
appurtenances in

PRINCE STREET from 36th Av. (Warren St.) to 37th  
Av. (Washington St.);

37TH AVENUE (WASHINGTON ST.) from Prince St. to  
Lawrence St.;

LAWRENCE STREET from 37th Av. (Washington St.)  
to 40th Av. (Amity St.); and lateral (high level) sewers  
and appurtenances in

30

PRINCE STREET from 36th Av. (Warren St.) to a point  
about 35 feet southerly therefrom;

37TH AVENUE (WASHINGTON ST.) from Prince St.  
to a point about 20 feet westerly therefrom and from the  
summit about 380 feet easterly from Lawrence St. to  
Lawrence St.;

LAWRENCE STREET from 37th Av. (Washington St.)  
40th Av. (Amity St.) Third Ward, Borough of Queens,

together with all the work incidental thereto.

40 Parties.

THIS AGREEMENT, made and entered into this 19th day  
of January, in the year one thousand nine hundred and twenty  
by and between The City of New York, party of the first part,  
by the President of the Borough of Queens, and O'Rourke  
Engineering Construction Co. of 17 Battery Place, New York  
City, Contractor, party of the second part, pursuant to the pro-



EXHIBIT C-17 (*Continued*):

visions of The Greater New York Charter, and the resolution of The Board of Estimate and Apportionment adopted on the 18th day of July 1919, of which resolution the following is a copy:

Covenant.

10 WITNESSETH, That the parties to these presents, each in consideration of the agreements on the part of the other herein contained, have mutually agreed, and hereby mutually agree, the party of the first part for itself and its successors, and the party of the second part for itself, himself, or themselves, and its, his or their executors, administrators, successors, and assigns, as follows:

Contract.

20 I. The contract for the hereinbefore entitled work shall include the following, which are hereby agreed upon as forming part and parcel thereof: the Proposal for Bids, the Bid, the Bond, this Agreement and the Specifications hereto annexed: also the Plan of the Work dated June 30th, 1919, filed in the office of the President of the Borough, entitled: Plan, Profile and Details for the construction of sewers and appurtenances in:

30 LINDEN AVENUE from Myrtle Ave. to State St.;  
STATE STREET from Linden Ave. to Prince St.;  
PRINCE STREET from State St. to Washington St.;  
WASHINGTON STREET from Prince St. to Lawrence  
St.;  
LAWRENCE STREET from Washington St. to Amity St.,  
Third Ward of the Borough of Queens.

and also the Drawings of Standard Details pertinent thereto on file in the office of the Engineer.

Party of the first part.

40 II. Whenever the term "The City" or a word "President," or a pronoun in place of either, is used, it refers to and means The City of New York, the party of the first part hereto, or the President of the Borough of Queens, or his authorized representative.

Party of the second part.

Whenever the word "Contractor," or a pronoun in place thereof, is used, it refers to and means the party of the second part hereto.

EXHIBIT C-17 (Continued):

Engineer described.

10 III. Whenever the word "Engineer," or a pronoun in place thereof, is used, it refers to and means the Engineer in Charge of Sewers, Borough of Queens, acting either directly or through assistants designated by him to act in the premises, limited to the particular duties entrusted to them. In case said  
10 Engineer may not be able to act, then such Engineer as may be designated by the President shall act in his place.

Terms defined.

20 IV. Whenever the word "plan" is used it refers to and means the plan of this work and the standard drawings pertinent thereto. Whenever it is provided that anything is "to be" or "to be done," "if" or "as," or "when" or "where approved," "required," "directed," "permitted," "ordered," "designated" or "deemed necessary" it shall be taken to mean approved, required, permitted, ordered, designated or deemed necessary as the case may be by the Engineer. Whenever the words "desirable," "suitable," "sufficient," "satisfactory" or others of a similar purport are used it is hereby agreed that the desirability, suitability, sufficiency, satisfactoriness or other denominated condition shall be as determined by the Engineer.

Contractor to furnish tools, proper appliances, etc.

30 V. The Contractor hereby agrees to furnish and provide all materials, labor, and appliances necessary and proper for the purpose, to excavate for, build, complete and connect in a good substantial manner, to the satisfaction of the President, and in conformity with the contract, the hereinbefore entitled work and all the work incidental thereto, and the Contractor hereby agrees to receive and accept as and for his full compensation the following prices, which are the amounts or rates at which this contract was awarded to the Contractor at the public letting thereof: Quantities are approximate only.

40 No extra compensation.

VI. The Contractor admits that the quantities of materials to be furnished and the amount of work to be done, as stated in the proposal for bids for the work, are approximate only. The Contractor agrees that The City is not to be held responsible that any of said quantities and amounts shall obtain in the construction of the work, as he has judged for himself as

EXHIBIT C-17 (*Continued*):

to such quantities and amounts and each of them, and as to the other circumstances affecting the cost of the performance of this contract; and that he will not at any time dispute or complain of such statement nor assert that there was any misunderstanding in regard to the character, size or depth of the excavations to be made or the kind or amount of the materials to be furnished or work to be done. The Contractor hereby agrees that he will not ask, demand, sue for, nor seek to recover for the entire work any extra compensation beyond the amount payable for the several classes of work and kinds of materials in this contract enumerated, which shall be actually performed and furnished, at the prices therefor herein agreed upon and fixed.

Sewers, etc., to be built as shown on the plan.

VII. The sewer and appurtenances will be built on the lines, at the depths and at the grades and in the manner shown on the plan of the work as the same will be designated on the ground by the Engineer.

Line may be changed.

The President may change the line of the sewer or the location of the receiving basins, or other sewer appurtenances provided such changes do not materially affect either the character or the amount of the work to be done, or the conditions under which it is to be performed, and the Contractor hereby agrees to make no claim for damages or extra compensation on account thereof.

Preservation of points, stakes, etc.

The Contractor will safeguard all points, stakes, grade marks, monuments and bench marks made or established on or near the line of work, and he agrees to accept responsibility for and to remedy at his cost any mistakes that may be caused by the unauthorized disturbance or removal of such points, stakes, grade marks, monuments and bench marks.

40 Inspection.

Work or materials may be condemned at any time.

IX. The Engineer shall inspect the materials furnished and the work done and see that the same correspond with the specifications. The Engineer is hereby authorized and empowered to reject and refuse all labor and material or method of ap,

EXHIBIT C-17 (*Continued*):

plication, or any part thereof, offered under or in fulfillment of this contract, that do not comply in kind, quality or quantity with the terms thereof. Any material delivered or offered to be delivered under this contract, which shall be rejected by the Engineer as not conforming to the terms thereof, will be forthwith removed by the Contractor, and material which does so conform will be forthwith furnished and delivered by him in place thereof. The Contractor hereby agrees not to use any material which has not been inspected and accepted, nor to perform any work except under inspection, to which end he further agrees to notify the Engineer when lines, grades or inspection are required so that the Engineer may have time to provide for the same. No inspection, approval or acceptance of any part of the work herein contracted for or of the materials used therein, or any payment on account thereof, shall prevent the President from refusing to accept the work or materials at any time thereafter.

20 Engineer to be final arbiter.

X. To prevent all disputes and litigation, it is hereby agreed that the Chief Engineer in Charge of Sewers shall, in all cases determine the amount and the quality of the several kinds of work and materials which are to be paid for under this contract, and he shall determine all questions in relation to the work and materials and the construction thereof, and he shall in all cases decide every question which may arise relative to the execution of this contract on the part of the Contractor, and his decision will be final and conclusive; and such decision, in case any question shall arise, shall be a condition precedent to the right of the Contractor to receive any money under this contract.

Any doubt as to the meaning of this contract and the specifications thereof, or any obscurity as to the wording of them, or any discrepancy between them and the plan will be explained by the Engineer, and his explanation will be accepted by the Contractor, who hereby agrees to execute the work in accordance with such explanation, and to make no charge or claim for any extra work or damage on account thereof.

40 Work and materials must agree with specifications.

XI(a). The Work will be performed in the best manner, and all materials of which the work is composed will be of the best kind, and a sufficient number of persons will be at all times employed to execute the work with due dispatch, the whole to be

EXHIBIT C-17 (*Continued*):

done to the satisfaction of the Engineer, and any materials furnished or work done not satisfactory to the Engineer will be immediately removed and satisfactorily replaced by the Contractor at his own expense; or if he shall neglect or refuse to remove and replace the same when notified so to do by a written notice to be served upon him, then the President may remove, or cause  
10 the same to be removed and satisfactorily replaced, by contract or otherwise, as he may deem expedient, and charge the expense thereof to the Contractor; and the expense so charged shall be deducted and paid by The City out of such moneys as are or may become due under this contract.

Examinations.

During the progress or after the completion of the work, should the Engineer require it, for the purpose of examining the same, the Contractor will make such openings, and to such extent  
20 through such part or parts of the work as the Engineer may direct, and the Contractor will satisfactorily restore the work so disturbed. Should the openings disclose defects in the work such defects shall be remedied in accordance with the provisions of the first paragraph of this section.

Use of patented articles.

XII. Wherever an article or any kind of material is specified by a trade name or by the name of a patentee, manufacturer or dealer, or by reference to the catalogue of a manufacturer  
30 or dealer, it shall be taken as intending to mean and specify the article or kind of material designated, or any other equal thereto in quality, finish and durability, and equally serviceable for the purposes for which it is or they are intended. Nothing on the plan or in the specifications shall be interpreted or taken to violate the provisions of section 1554 of the Greater New York Charter, which provides that "except for repairs, no patented pavement shall be laid and no patented article shall be advertised for, contracted for or purchased, except under such circumstances that there can be a fair and reasonable opportunity for  
40 competition, the conditions to secure which shall be prescribed by the Board of Estimate and Apportionment."

Claims for infringement.

The Contractor will be responsible for any claims made against The City for any infringement of patents, by the use of patented articles or processes in the construction and completion

EXHIBIT C-17 (*Continued*):

of the work, and he will have harmless and indemnify The City against all costs, expenses and damages caused by reason of any infringement of patents used in the construction and completion of the work.

Commencement and completion.

- 10 XIII. The Contractor will begin the work herein agreed to be performed on such date as the President shall notify him to begin on and from which date the time hereinafter fixed for the completion of the work shall begin to run. The place where the work is to be begun will be either stated in said notice or designated on the ground by the Engineer. The commencement of work by the Contractor shall be deemed and taken to be a waiver on his part of notice to begin work, in which case the time for the completion of the work will begin to run on and from the date the work was commenced.

20 Time of performance.

XIII(a). Work on the shaft where the tunnel heading is to begin, and the adjacent shaft must begin simultaneously, and such succeeding shaft must be constructed before the tunnel heading reaches such shaft, in order that there shall be no interruption in the progress of the tunnel heading.

Excavating machines.

- 30 The Contractor shall use modern excavating devices and methods. He shall not contract the high level sewers and appurtenances over the tunnel until the entire length of tunnel sewer is completed.

Special care is to be taken to insure the proper ventilation and lighting of tunnel work. No lines or grades will be given in such work when the proper ventilation or lighting thereof is neglected, and the Contractor shall have no claim for damage caused by delay on this account.

40 Responsibility of Contractor for Plant and Methods.

The Contractor shall provide and install such construction plants and shall use such methods and appliances for the performance of all operations connected with for the work to be done under this contract as will secure a satisfactory quality of work and a rate of progress which, in the opinion of the Engineer, will insure the completion of the work within the time specified.

EXHIBIT C-17 (*Continued*):

10 If, at any time, before the commencement, or during the progress of the work, or any part of it, such method or appliances appear to the Engineer to be unsafe, inefficient or inadequate for securing the safety of the workmen, the quality of the work or the rate of progress required, he may order the contractor to increase their safety and efficiency, or to improve their character and the Contractor shall comply with such orders; but the failure of the Engineer to make such demand shall not relieve the Contractor of his obligation to secure the safe conduct, the quality of the work and the rate of progress required by the Contract, and the Contractor alone shall be responsible for the safety, efficiency and adequacy of his plant, appliances and method.

The Contractor shall provide ample means and appliances and enforce suitable rules for the security of the work and the safety and health of the men employed.

20 Time of performance.

XIV. The Contractor will carry on the work with such force and in such manner and order and at such places, times and seasons, including freezing weather, as may be directed by the Engineer, and will execute all the work in every respect in a thorough and workmanlike manner; and he will fully and entirely perform this contract on his part before the expiration of THREE HUNDRED AND FIFTY (350) CONSECUTIVE WORKING DAYS.

30 Time important.

It is hereby agreed that the time designated for the performance of all the work under this Contract is of the essence of this agreement, in view whereof it is hereby further agreed that a rate of progress will be maintained so that the work performed up to any time will be at least the same percentage of the total work to be performed under this contract as the net elapsed time at such time is of the total time allowed for the performance of all the work under this contract.

40 In the computation of the number of consecutive working days, the time during which the completion of the work has been delayed in consequence of the condition of the weather, or tides, or by any act or omission of the party of the first part or during such period as the work has been suspended by written order of the President, or delays for which the Contractor is not responsible (all of which will be determined by the President, who shall

EXHIBIT C-17 (*Continued*):

certify to the same in writing, and whose determination and certificate thereof shall be binding and conclusive upon the Contractor), will be allowed to the Contractor and will be deducted in computation. Sundays and also holidays on which no work is done, will also be excluded from said computation. In case a larger amount of rock excavation than is set forth in the Engineer's Estimate shall be necessary, an allowance of one day will be made for each 25 cubic yards of such excess of rock excavated and removed in accordance with the measurement of rock allowed by the specifications. If the completion of the work to be done under this contract shall require work or materials or both in greater amounts than those set forth in the Engineer's Estimate of Quantities, or if unforeseen obstacles are encountered in the prosecution of said work then the time which the Contractor is delayed on account thereof will be determined and allowed by the President at the completion of the work, upon the receipt by him of a written application from the Contractor for such determination and allowance. No demand by the Contractor that the President determine and certify the matters aforesaid shall be of any effect whatsoever unless the same be made in writing and duly served upon the President prior to the filing in the office of the Comptroller of The City of the final certificate of the completion and acceptance of the work.

End of time period.

The time shall run against this contract until all work called for in this contract is completed to the satisfaction of the Engineer.

Liquidated damages.

XV. In case the Contractor shall fail to complete the work hereunder in accordance with the contract within the time aforesaid, he agrees to pay to The City the sum of One hundred Dollars (\$100.00) for each and every day the time consumed in said performance and completion exceeds the time hereinbefore allowed for that purpose; which said sum, in view of the difficulty of ascertaining the loss which The City will suffer by reason of delay in the performance of the work hereunder, is hereby agreed upon, fixed and determined by the parties hereto as the liquidated damages that The City will suffer by reason of said delay and default, and not as a penalty; and The City shall and may deduct and retain the amount of such liquidated damages



EXHIBIT C-17 (*Continued*):

out of the moneys which may be due or become due to the Contractor under this contract.

Work not provided for in contract.

10           XVI. If, before the completion of the work contemplated herein, it shall become necessary to do any other or further work on or near the line thereof than is provided for in this contract, the Contractor will not in any way interfere with or molest such person or persons as the President may employ to do such work, and will carry on the work under this contract in such manner as may be ordered so as to afford all reasonable facilities for doing such other or further work; and no damage or claim by the Contractor shall be allowed therefor, except such allowance of time for delay as the President may deem reasonable.

President's right to suspend work.

20           XVII. The President is hereby authorized to suspend the whole or any part of the work herein contracted to be done, if he shall deem it for the interest of The City so to do. During such suspension the trenches shall be backfilled, if required, and the roadways and pavements over the same satisfactorily restored, and all materials upon the work shall be neatly piled so as not to obstruct public travel, or shall be removed from the line of the work, if directed.

Lines and grades for tunnel lining.

30           The design of the shield for the tunnel shall be such that it would be easily controlled so that the semi steel lining of the tunnel shall not exceed two (2) inches off grade at invert or four (4) inches off line at the spring line. The lowest point on the flange of a ring shall be considered in the estimating of the grade. Where the lining is off either in grade or line the amounts specified above, work in the heading shall be stopped immediately on orders of the Engineer and the tunnel lining reset, and the shield if necessary. Drawings of the shield shall be furnished  
40 in triplicate if required by the Engineer.

No damages to be claimed for delay due to other contracts.

XVIII. Should postponement or delay be occasioned by the precedence of paving or other contracts, which may have been either let or executed before the opening of the bids for this con-

EXHIBIT C-17 (*Continued*):

tract, the Contractor will make no claim for damages therefor nor for any damages in consequence of the street or the adjoining sewers not being in the condition contemplated by the parties at the time of making the contract; if, however, the Contractor shall be delayed in performance of his work by reason of the street or the adjoining sewers not being in such condition, or by reason of the work or any work or any part thereof being suspended as herein before provided, such allowance of time on account thereof as the President shall deem reasonable will be made.

If the work be suspended or delayed by any act or omission of The City, or for the reason that The City does not own or has not obtained possession of, or the right to enter upon the land upon which the work is to be performed, or because of any act or omission of any employee or agent of The City or any other Contractor performing work for The City, the President, or whoever is directed by this contract, to make the certificate in reference to time, shall make such allowance of time for the completion of the work as the Engineer shall certify that the work has been delayed. No allowance whatever as damages will be made to the Contractor because of any such suspension or delays, and no claim shall be made by the Contractor on account thereof.

Allowance of time for delays.

XIX. No allowances of time for delays under the provisions of this contract nor the delivery and acceptance of any articles or materials called for by this contract, shall be deemed to be a waiver by the President of the right to abrogate this contract for abandonment or delay in the manner hereinafter provided.

LINES AND GRADES FOR TUNNEL LINING.

Tunnel grade.

The design of the shield for the tunnel shall be such that it will be easily controlled so that the semi steel lining of the tunnel shall not exceed two (2) inches off grade at invert or four (4) inches off line at the spring line. The lowest point on the flange of a ring shall be considered in the estimating of the grade. Where the lining is off either in grade or line the amounts specified above, work in the heading shall be stopped immediately on orders of the Engineer and the tunnel lining reset, and the shield if necessary. Drawings of the shield shall be furnished in triplicate if required by the Engineer.

EXHIBIT C-17 (*Continued*):

Right to construct sewers, etc.

Permits for connections.

10 XX. Prior to the commencement of and during the progress of the work under this contract the President shall have the right to undertake, and to grant permits for, any construction, reconstruction, and repairing of any pipes, sewers, basins, subway ducts and railway tracks, and any appurtenances thereof located on and adjoining the line of the work, and for any connections with and additions to such pipes, etc., and for such purposes the President is hereby authorized to suspend work on any part of this contract, in accordance with Section XVII., and the Contractor will not interfere with nor place any obstructions in the way of any person or persons who may be engaged upon such work. The President is hereby authorized to connect, by contract  
20 or otherwise, any sewers and drains with the work built under this contract and to grant permits to any person or persons to make connections therewith at any time before it is completed; and the Contractor will not interfere with nor place obstructions in the way of such persons as may be employed in building such sewers and drains, or in making such connections, and the flow from such sewers, drains and connections will be permitted by the Contractor to discharge into the work built under this contract and the Contractor agrees to make no claim for compensation, damages or delay on account thereof. The issuance of such permits shall not be considered as an acceptance by The City  
30 of that part of the sewer into which such connections empty or flow, nor shall the Contractor on account thereof be relieved from the cleaning of the sewer prior to the final examination of the work. No new connections or drains will be allowed to be made or joined to the work built under this contract unless a permit therefor has been duly issued by the President, which permit shall be shown in all cases to the Inspector of the work.

Flow of sewer and drains, etc.

40 Drains, etc., interrupted.

Sewers, etc., to be kept clean.

XXI. The Contractor will provide at his own cost for the flow of the sewers, drains and water courses interrupted during the progress of the work, and will immediately cart away and remove all offensive matter. The flow throughout the entire length of such sewers and appurtenances as are to be replaced

EXHIBIT C-17 (Continued):

by the work to be done under this contract will be maintained by the Contractor. The Contractor will remove at his own cost and expense all such bulkheads, as may be directed, from the sewers with which the work under this contract will be connected. When the permanent removal of any existing pipe sewers and appurtenances and pipe drains is necessitated by the work to be done under this contract, such of the materials of such structures as  
10 may be directed shall be carefully taken up, piled and left at the disposal of The City, and shall not be used in the work, and the remainder shall be removed from the work and disposed of by the Contractor. Wherever the work to be built under this contract, or the trenches in which it is to be constructed, follow the line, and occupy the place of or intercept the Fire Alarm Telegraph System of The City, or any existing sewers, drains, culverts, basin connections or house connections for which permits may have been granted prior to the opening of the bids for this contract.  
20 the Contractor will make the same good, and will rebuild the Fire Alarm Telegraph System of The City and also said sewers, drains, culverts and connections, or connect the same with the sewer built under this contract, whichever he may be directed to do, at his own cost and expense. All sewers, drains, culverts, basins and basin connections rendered unnecessary by the construction of the work herein contemplated, shall be thoroughly broken up, except as otherwise hereinbefore provided, and satisfactorily filled in by the Contractor at his own cost and expense. as shall also all portions of water courses in, through or across  
30 any street that may be rendered unnecessary by the construction of this work. During the progress of the work, and until the completion and acceptance thereof, the sewers, drains, basins, culverts and connections built under this contract shall be kept thoroughly cleaned throughout, and shall be left clean.

Tunnel drainage.

The Contractor is to furnish an adequate pumping plant and is to provide and maintain drainage in the tunnels and other excavations satisfactory to the Engineer. All water removed  
40 from the tunnels or other excavations, shall be conveyed to a suitable point of discharge, in a manner satisfactory to the Engineer.

Sale of sand or earth.

XXII. The Contractor will not sell, nor permit to be removed from the line of the work, before the trench shall have

EXHIBIT C-17 (*Continued*):

10 been backfilled, any building sand or earth thrown up, except upon written permission, and then only so much as shall remain after reserving a sufficient quantity to backfill the trench and complete the paving; and the Contractor will, in all cases, backfill the trench with the same material thrown out, provided it be suitable, then the same shall be removed from the line of work, and suitable material procured and used for backfilling the trench, and when required sand of proper quality and depth shall be spread on the surface to receive the pavement.

20 The Contractor hereby agrees that all excavated material and materials of construction placed by him or for him upon private property, unless by written permission of the owners or lessees thereof, will be removed by him and all damage to said property remedied by him at his own cost and expense. Unless such materials are removed and such damage remedied by the Contractor within 48 hours after the receipt by him of a written notice so to do, he agrees that the President shall be and is hereby authorized to dispose of such materials, and to remedy such damage and to deduct the expense thereof from the moneys due or to become due under this contract.

Contractor to give personal attention to work.

Not to assign or sublet.

30 XXIII. The Contractor will give his personal attention constantly to the faithful prosecution of the work; he will not assign, transfer, convey, sublet or otherwise dispose of this contract, or his right, title or interest in or to the same, or any part thereof, without the previous consent, in writing, of the President, indorsed hereon or hereto attached; and he will not assign, by power of attorney or otherwise, any of the moneys to become due and payable under this contract, unless by and with the like consent, signified in like manner. If the Contractor shall, without such previous written consent, assign, transfer, convey, sublet or otherwise dispose of this contract, or of his right, title or interest therein, or any of the moneys due or to become due under this contract, to any other person, company or other corporation, this contract may, at the option of the President, be revoked and annulled, and The City shall thereupon be relieved and discharged from any and all liability and obligations growing out of the same to the Contractor, and to his assignee or transferee; provided that nothing herein contained shall be construed to hinder, prevent or affect an assignment by the Contractor for the

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EXHIBIT C-17 (Continued):

benefit of his creditors, made pursuant to the statutes of the State of New York; and no right under this contract, or to any money to become due hereunder, shall be asserted against The City, in law or in equity, by reason of any so-called assignment of this contract, or any part thereof, or of any moneys due or to become due hereunder, unless authorized as aforesaid by the written consent of the President.

10

When Contractor is absent.

Disorderly workmen.

Contractor to provide assistance.

20 XXIV. Whenever the Contractor is not present on any part of the work where it may be necessary to give directions, orders will be given by the Engineer to and shall be received and obeyed by the superintendents and foremen who may have immediate charge of the men employed on the particular work in relation to which the order may be given; and at any time, if a foreman or workman employed by the Contractor shall be declared by the Engineer to be disobedient, incompetent or disrespectful, the Contractor, on receiving written notice to that effect, will forthwith dismiss such person, and will not again employ him on any part of the work. The Contractor will provide all necessary assistance for the Engineer when required, without charge or expense to The City or Engineer.

30

XXIV(a) The Contractor shall furnish and erect where necessary such forms, spikes, nails, troughs for plumb lines and any other appurtenances (except surveying instruments, etc.), as may be required by the Engineer for giving lines and grades, etc. Hoisting and working shall be suspended for such reasonable time as the Engineer shall deem necessary to transfer lines into tunnel excavations, and all work in heading must cease when the Engineers are working in such heading, and the Contractor shall make no claim upon such cessation of work.

40

Contractor to plank and bridge for traffic.

XXV. The Contractor will observe the law and all ordinances of The City in relation to obstructing the streets, keeping open passageways and protecting the same where they are exposed and would be dangerous to the public travel, and such passageways shall, as may be required, be planked or bridged by the Contractor, at his own expense.

EXHIBIT C-17 (*Continued*):

XXV(a) The Contractor shall also furnish such additional appliances and take such additional precautions as the Engineers may deem necessary for the protection of the sewer structures, adjacent property, public utilities, or for other purposes.

Guards and lights.

10 Indemnification of City.

XXVI. During the performance of the work herein set forth the Contractor will place proper guards upon and around the same for the prevention of accidents, and at night will put up and keep suitable and sufficient lights, and he will indemnify and save harmless The City against and from all claims, suits and actions, of every name and description, brought against it, and all costs and damages to which it may be put on account or by reason of any injury or alleged injury to the person or property of another, resulting from the prosecution of the work or from negligence or carelessness in the performance of the work, or in guarding the same, or from any improper materials used in its prosecution, or by or on account of any act or omission of the Contractor or his agents; and the Contractor agrees that the whole or so much of the moneys due to the Contractor under and by virtue of this contract, as shall or may be considered necessary by the Comptroller of The City, may, as its option, be retained by The City until all such suits and claims for damages as aforesaid shall have been settled, and evidence to that effect furnished to the satisfaction of the Comptroller.

30

Contractor to make repairs.

XXVII. In case any injury is done to property along the line of the work, or to any sidewalk, in consequence of any act or omission on the part of the Contractor or his employees or agents in carrying out any of the provisions or requirements of this contract, the Contractor will make such repairs as are necessary in consequence thereof, at his own expense and to the satisfaction of the President, and in case of failure on the part of the Contractor to promptly make such repairs, they may be made by the President, and the expense thereof will be deducted out of the moneys due or to become due to the Contractor under this contract.

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EXHIBIT C-17 (*Continued*):

Contractor to make repairs.

10 XXVII(a). The Contractor shall make repairs to buildings, pavements, sidewalks, curbs, existing sewers or property damaged by settlement either direct or indirect caused by the construction of the tunnel and shall make repairs promptly on notice from the President of the Borough and at his own (Contractor's) expense. Further it is hereby agreed and understood that the Contractor will make no claim through law or otherwise to cover the cost of such repairs.

Loss or damage to be assumed by Contractor.

20 XXVIII. The Contractor agrees to assume, and to make no claim on account of, any and all loss or damages arising out of the nature of the work to be done under this contract, or from any unforeseen obstructions or difficulties which may be encountered in the prosecution of the same, or from the action of the elements, or from incumbrances on or near the line of the work, or from the breaking of water mains, sewer and gas mains on or near the line of the work.

Claims for labor, etc.

30 XXIX. The Contractor will pay promptly, and in cash, for all labor employed upon and all materials furnished and used in the work, and if at any time before or within thirty days after the whole work herein agreed to be performed has been completed and accepted by The City, any person or persons claiming to have performed any labor or furnished any materials toward the performance and completion of the contract, shall file with the President and with the Comptroller of The City any such notice as is described in the Lien Law or any act of the Legislature of the State of New York, then, and in every such case, The City shall retain—anything herein contained to the contrary thereto notwithstanding—from the moneys under its control, and due or to become due under this contract, so much of the moneys as shall be sufficient to pay off, satisfy and discharge the amount in such  
40 notice alleged or claimed to be due to the person or persons filing such notice, together with the reasonable cost of any action or actions brought to enforce such claim or the lien created by the filing of such notice. The money so retained shall be retained by The City until the lien thereon created by the said act and the filing of the said notice shall be discharged, pursuant to the provisions of the said act.



EXHIBIT C-17 (*Continued*):

Contractor will prevent filing of liens, etc.

10 XXX. The Contractor will not, at any time, suffer or permit any lien, attachment, or other incumbrances, under the law of this State or otherwise, by any person or persons whomsoever, to remain on file in the Finance Department or at the office of the City Department having supervision of the work against any money due or to become due for any work done or materials furnished under this contract, or by reason of any other claim or demand against the Contractor; and that any such lien, attachment, or other incumbrance, until it is removed, shall preclude any and all claim or demand for any payment whatsoever under or by virtue of this contract.

Evidence of satisfaction of liens, etc.

20 The Contractor further agrees that he will present to the party of the first part satisfactory evidence that all just liens, claims and demands of his employees, or of parties from whom materials used in the construction of the work may have been purchased or procured are fully satisfied and that the materials furnished and work done under this contract are fully released from all such liens, claims and demands before said party of the second part will demand or shall receive the sums due on final payment under this contract.

Notice to gas companies, etc.

30 Not to hinder other companies.

40 XXXI. The Contractor will give notice in writing to all gas, railroad and other companies owning or controlling any pipe, tracks or other structures which during the progress of the work may be affected by the prosecution of the same so that said companies may protect or remove their structures, and he will not cause any hindrance to, or interference with, any such gas company or other company or companies in protecting their said pipes, tracks or other structures, nor in removing or otherwise protecting and replacing the main and service pipe, lampposts, lamps, tracks or other structures where necessary, but the Contractor will suffer the said company or companies to take all such measures as are requisite for the purpose aforesaid. But if said gas, railroad, or other companies, within five days after receipt of such notice, fail to support, remove or otherwise protect their structures, the Contractor will upon the approval of the President protect or remove the same, it being expressly un-

EXHIBIT C-17 (*Continued*):

derstood that the cost thereof shall not be a charge against The City, but shall be a matter for adjustment between the Contractor and the company or companies concerned.

Pipes, conduits, etc., of private companies.

10 XXXII. It is hereby agreed that The City is not responsible or liable for the support, protection or reconstruction of such gas pipes, conduits, water pipes, tracks or structures owned by private companies enjoying special franchises or occupying any portion of the street or way on or below the surface in its streets or ways, as the Contractor admits that he has carefully examined the location of work, has made special inquiry at the offices of the companies owning, controlling or operating said pipes, conduits, tracks and structures, and he has determined to his satisfaction the character, size, location and length of such pipes, conduits, tracks and structures; that he has inspected the public records of the various City Departments having cognizance and control of pipes, conduits, and other subsurface structures, and of The City's water pipes, conduits and sewers, and he has made such further personal inspection and investigation as he deemed proper to determine the correctness of the information so obtained; and he clearly understands that The City does not insure the accuracy of such reports or information, and agrees that he will not make any claim against The City for damages or extra work caused or occasioned by his relying upon such records, reports or information furnished by any City Department or any companies, either as a whole or in part.

20  
30 Protection and restoration of pipes, etc., of private companies.

40 XXXIII. The Contractor agrees to confer with and to make to or entertain an offer from such private companies as own the said pipes, conduits, tracks or structures; and the Contractor further agrees to enter into an agreement with said companies by what terms and at what prices the support, protection, removal and reconstruction of the pipes, conduits, tracks and structures will be undertaken and accomplished, and in the event of the failure to make such an agreement with said companies, he will not complain nor make any demand on The City for additional compensation or pay for supporting, protecting, or restoring the said pipes, conduits, tracks or other structures. Contractor to notify department of water supply,

EXHIBIT C-17 (*Continued*):

Gas and Electricity.

XXXV. At least twenty-four hours before breaking ground, for the purpose of constructing the work of this contract, the Contractor agrees to give notice thereof in writing to the Department of Water Supply, Gas and Electricity.

10 City's water pipes, etc.

XXXVI. If upon excavating it shall be found that any existing water pipes or appurtenances owned or controlled or operated by The City follow the lines, or occupy the place, of the sewer or sewers and appurtenances to be laid or built as shown on the plan, such existing water pipes and appurtenances will be removed and relaid, or rebuilt, by and at the cost of the Department of Water Supply, Gas and Electricity of The City of New York; if, however, in order to facilitate the work to be done under this contract, it be found desirable to temporarily remove any  
20 water pipes or appurtenances owned or controlled or operated by The City, the removal and replacing in their original positions of such water pipes and appurtenances will be done by the Department of Water Supply, Gas and Electricity for the Contractor at his cost and expense.

Protection of City's water pipes, etc.

XXXVII. The Contractor agrees to protect all water mains and service water pipes owned, controlled or operated by  
30 The City which may be affected in any manner by the work done under this contract, except as hereinbefore provided, and to protect all such water and service pipes from freezing, and if he fails to do so, the Commissioner of Water Supply, Gas and Electricity is hereby authorized to protect such main and service pipes, or in the event of their having suffered injury to replace such pipes, and recalk and repair the same immediately, as the work progresses, and the cost thereof shall be charged to the Contractor; the cost so charged shall be deducted from any sum or sums due or to become due to the Contractor under this contract, and in  
40 case such sum or sums shall be insufficient to cover such cost, the Contractor will be liable for the balance.

Protection of gas and water mains and pipes, etc.

XXXVIII. The Contractor agrees to sustain in their places and protect from injury all water or gas mains, conduits, subways or service pipes, steam pipes and pneumatic pipes, and

EXHIBIT C-17 (Continued):

all sidewalks, curbs, stoops, areas, and all other property in the vicinity of his work, from direct or indirect injury by caving or otherwise, and he hereby assumes all expenses for direct or indirect damage which may be occasioned by injury to any of them, and he agrees to have at all times a sufficient quantity of timber and other necessary materials and appliances on the ground, and will use the same, as required, for bracing and sheeting the sides and ends of excavations, and for sustaining and supporting any and all pipes, conduits, subways, lamp-posts and lamps or other structures that are undermined, weakened, endangered or threatened; and in case any damage or injury shall or may result to said pipes, conduits, subways, lamp-posts and lamps and other works or structures of any gas, electric, railroad or other company whatsoever, or to any private property, through or by reason of any negligence, wilfulness, carelessness or want of skill on the part of the Contractor, his agents or servants, the Contractor hereby agrees to pay such amount as may be sufficient to cover the expense and damages occasioned by such negligence, wilfulness, carelessness or unskillfulness, and that such amount shall be charged against him; and the President is hereby authorized to deduct and retain from any moneys which may be due, or which shall become due, under this Contract, a sum sufficient, in his judgment, to cover the cost of making good any such damages. expense or loss, and to apply said sum so deducted and retained to the requisite repairs or renewals, or to reimburse the parties damaged or injured.

30 Old water and gas pipes.

XXXIX. All iron, water and gas pipes which it becomes necessary to remove shall be considered the property of The City and will be piled by the Contractor in such part or parts of the streets as may be directed, unless notice to the contrary is given him in writing, in which case he will remove the same at his own expense.

Change of grade.

40 XL. In case the grade of the street shall be changed during the progress of the work, the Contractor will conform to the altered grade at the contract prices, as far as they are applicable; and for any work for which there is no contract price, the provisions in relation to work not provided for in this contract shall apply.

EXHIBIT C-17 (*Continued*):

Measurement of work and material.

- 10 XLI. All quantities of work and materials to be paid for will be measured and determined, according to the plan and the working lines that may be given, and the specifications, when the work conforms thereto. No allowance will be made on any part of the work for any excess above the quantities required by such plan, lines and specifications. Should the dimensions of any part of the work, or of the materials, be less than those required by the plan, the actual quantities only will be allowed in measurement.

Payment for Contractor plant and miscellaneous temporary works.

- 20 XLII.(a) For providing plant, tools and equipment, and for furnishing, erecting, maintaining and removing the construction plant, construction roads, all railroads, emergency hospital, temporary water supply, guards, trestles, telephone system, and other temporary works, the Contractor shall receive no direct payment, but compensation for them shall be considered as being covered by all the contract prices for all are items for which there are contract prices.

Payment on acceptance of work.

- 30 XLIII. The Contractor will not be entitled to demand or receive payment for any portion of the work or materials unless the same has been fully completed in the manner set forth in this contract, and such completion duly certified by the Engineer in Charge of Sewers, and until each and every one of the stipulations hereinbefore mentioned is complied with, and the work completed to the satisfaction of the President and accepted by him, and the final certificate of completion and acceptance thereof, signed by the President and said Engineer, filed with the Comptroller. The City will pay to the Contractor on or before the expiration of thirty days from the filing of said final certificate of completion and acceptance in the office of the Comptroller, the whole of the moneys accruing to the Contractor, under this contract, except  
40 such sum or sums of money as shall be retained under any of the provisions herein contained for that purpose, or in any law of the State, or under any ordinance of The City passed prior to the date of this contract and now in force.

EXHIBIT C-17 (*Continued*):

Moneys to be retained for repairs to unpaved streets.

It is hereby further agreed that The City shall be and is hereby authorized to retain out the moneys payable to the Contractor, during a period of six months from the date of the final completion and the acceptance by the President of the work done under this contract, the sum of \$4,000. 00/100. And should the  
10 Contractor fail to make such repairs to the street surface as may become necessary by reason of the work done under this contract within two days of the date of service of notice upon him so to do, then the President may expend such sum or any thereof in making such repairs.

Payment of retained moneys to be made after six months.

It is hereby further agreed that The City, upon the expiration of the said period of six months, will pay to the said party  
20 of the second part the whole or such part of the moneys retained as may remain after the expenses of making said repairs, in the manner aforesaid, shall have been paid therefrom.

Termination of six months' period.

It is hereby further agreed that if the termination of the said period of six months after the completion and acceptance of the work done under this contract shall fall within the months of December, January, February or March, then and in that case  
30 the said months of December, January, February and March, or such part thereof as the President may determine, will not be included in the computation of said period of six months.

Final certificate to control.

XLIII. The action of the Engineer in Charge of Sewers, by which the Contractor is to be bound and concluded according to the terms of this Contract shall be that evidenced by said Engineer's final certificate, all prior certificates upon which eighty-five per centum (85%) payments may have been made being  
40 merely estimates, and subject to the corrections of such final certificate, which may be made without notice to the Contractor thereof, or of the measurements upon which the same is based.

85% payments.

XLIV. In case the amount of this contract, based on the Engineer's estimate and the contract prices, shall be five thousand dollars (\$5,000.00) or over, payment will be made to the Con-

EXHIBIT C-17 (Continued):

tractor by monthly installments of eighty-five Per Cent. (85%) of the estimated value of the work performed, provided the work is being prosecuted in conformity with the provisions of the contract, and in a manner satisfactory to the Engineer, in which case, however, the quantity returned shall be such that the amount paid will be fairly due and in accordance with the provisions and stipulations of this contract; provided, the amount of work done  
10 on each installment shall not be less than fifteen hundred dollars (\$1,500.00); and provided that The City may at all times reserve and retain out of said installments, or any of them, all such sum or sums as by the terms hereof or any act of the Legislature of the State of New York, or of any ordinance of The City of New York, now in force, it is or may be authorized to reserve or retain; and provided that where the Contractor, although the lowest bidder in the gross calculation, is to receive unusual or extraordinary prices for any of the different items of the work when considered  
20 separately, nothing herein contained shall be construed to affect the right of the President to determine the amount that may be due from time to time, not necessarily by the prices agreed upon in this contract, but by causing an estimate to be made of the value of the work done, taking as a basis of the calculations the whole amount of money that will have become due, according to the terms of this contract, when the whole work shall be completed.

If abandoned, etc.

30 Contract may be declared abandoned.

Completion of work to be undertaken by President.

XLV. The Contractor hereby agrees that if the work to be done under this contract shall be abandoned by him, or if this contract shall be assigned or the work sublet by him otherwise than as provided by the terms hereof, or if at any time the Engineer shall be of the opinion, and shall so certify, in writing, to the President that the performance of the contract is unnecessarily or unreasonably delayed, as evidenced by its actual rate  
40 of progress compared with the required progress (See Section XIV); or that the Contractor is wilfully violating any of the conditions or covenants of this contract or the specifications thereof, or is executing the same in bad faith, or not in accordance with the terms thereof, or that the work is not fully completed within the time designated in this contract for its completion, the President may declare this contract or any part thereof

EXHIBIT C-17 (*Continued*):

abandoned and notify the Contractor to discontinue all work or any part thereof under this contract, by a written notice to be served upon the Contractor either personally, or by leaving said notice at his residence, or with his agent in charge of the work, or in the manner provided in Section XLVI., or with any employee found on the work, and the Contractor agrees to thereupon discontinue said work or such part thereof, and he further  
10 agrees that the President shall thereupon have the power to contract for the completion of the contract in the manner prescribed by law, or to place such and so many persons as he may deem advisable, by contract or otherwise, to work at and complete the work declared abandoned, and to use such materials as he may find upon the line of the work, and to procure other materials for the completion of the same, and to charge the expense of said labor and materials to the Contractor; and it is further agreed that the expense so charged shall be deducted and paid by The  
20 City out of such moneys as may be due or may at any time thereafter become due to the Contractor under and by virtue of this contract, or any part thereof. And in case such expense shall exceed the amount which would have been payable under the contract if the same had been completed by the Contractor, he shall and will pay the amount of such excess to The City. Should the Contractor fail to complete the work as stipulated herein, or should the contract be declared abandoned, he agrees to forfeit all money earned, but unpaid whether certified or not at the time of the abandonment of the contract. In case such expense shall  
30 be less than the sum which would have been payable under the Contract if the same had been completed by the Contractor, he agrees to forfeit all claim to the remainder; and when any particular part of the work is being carried on by the President, by contract or otherwise, under the provisions of this clause of the contract, the Contractor agrees to continue the remainder of the work in conformity with the terms of this contract and in such manner as in nowise to hinder or interfere with the persons or workmen employed, as above provided, by the President, by contract or otherwise, to do any part of the work, or to complete the  
40 same under the provisions of this section of the contract.

XLV(a). In the event that this contract is declared abandoned by the President, the Contractor shall leave upon the work all machinery, tools, appliances, structures or materials that he has provided or erected for the prosecution of the work, and Contractors to whom may be awarded contracts for the completion of the work called for by this contract shall have the



EXHIBIT C-17 (*Continued*):

right to use the same in the completion of said work without liability therefor to the Contractor and the City shall have a lien upon such machinery, tools, appliances, structures and materials, for the purpose aforesaid. It is further agreed that if this contract is declared abandoned by the President, his certificate as to the amount of the excess cost, if any, of completing the work called for by this contract shall be binding and conclusive upon the contractor and his sureties.

Notice to Contractor.

XLVI. It is agreed that the residence or place of business, given in the bid upon which this contract is founded, is hereby designated as the place where all notices, letters and other communications shall be served, mailed or delivered. It is further agreed that any notice, letter or other communication addressed to the Contractor and delivered at the above-named place, or deposited in a post-paid wrapper in any post-office box regularly maintained by the post-office, shall be deemed sufficient service thereof upon the Contractor. It is also further agreed that the place named may be changed at any time by an instrument in writing, executed and acknowledged by the Contractor and delivered to the President. It is also further agreed that nothing herein contained shall be deemed to preclude or render inoperative the service of any notice, letter or other communication upon the Contractor personally.

Labor law.

XLVII. The Contractor agrees that he will comply with the provisions of "The Labor Law." He further agrees that no laborer, workman or mechanic in the employ of the Contractor, sub-contractor or other person doing or contracting to do the whole or a part of the work contemplated by the contract, shall be permitted or required to work more than eight hours in any one calendar day, except in cases of extraordinary emergency, caused by fire, flood or danger to life or property; that the wages to be paid for a legal day's work to all classes of such laborers, workmen or mechanics upon public work or upon any material to be used thereon shall not be less than the prevailing rate for a day's work in the same trade or occupation in the locality where such public work is being constructed. Each such laborer, workman or mechanic shall receive the prevailing rate of wages. This contract shall be void and of no effect, unless the person or cor-

EXHIBIT C-17 (*Continued*):

poration, making or performing the same shall comply with the provisions of section 14 of the Labor Law.

Chap. 478, Laws 1916.

10 This contract shall be void and of no effect unless the person or corporation making or performing the same shall secure compensation for the benefit of, and keep insured during the life of this contract, the employees engaged thereon, in compliance with the provisions of Chapter 41 of the laws of 1914, known as the Workmen's Compensation Law, and acts amendatory thereof.

No estoppel.

20 XLVIII. The City shall not, nor shall any Department or officer thereof be precluded or estopped by any return or certificate made or given by the President, any Engineer or other officer, agent or appointee of The City under any provision of this contract from at any time (either before or after the final completion and acceptance of the work and payment therefor pursuant to any such return or certificate) showing the true and correct amount, quality and character of the work done and materials furnished by the Contractor, or any other person under this contract, or from showing at any time that any such return or certificate is untrue and incorrect or improperly made in any particular, or that the work and materials, or any part thereof do not in fact conform to the contract; and The City shall not be  
30 precluded or estopped, notwithstanding any such return or certificate or payment in accordance therewith, from demanding and recovering from the Contractor such damages as it may sustain by reason of his failure to comply with the contract.

Understanding of plans and specifications.

40 XLIX. The Contractor hereby distinctly and expressly declares and acknowledges that, before the signing of this contract, he has carefully read the same, and the whole thereof, together with and in connection with the plan and specifications, and that he has made such examination of this contract and of said plan and specifications, and the location where said work is to be done, and such investigation of the work required to be done, and in regard to the material required to be furnished, as to enable him to thoroughly understand the intention of the same, and the requirements, covenants, agreements, stipulations and restrictions contained in this contract and in said plan and speci-

EXHIBIT C-17 (*Continued*):

10 fications; and distinctly agrees that he will not hereafter make any claim or demand upon The City, based upon or arising out of any alleged misunderstanding or misconception on his part of the said requirements, covenants, stipulations and restrictions: and that any information given to the Contractor by the Engineer or others as to the quantities in the work, prior to, or during the progress of the work, shall have no bearing or effect  
10 whatsoever, upon the total amount of work to be paid for, in the final settlement.

Substitution of sureties.

L. Should the Comptroller at any time deem the sureties under the contract to be unsatisfactory he shall notify the Contractor to that effect and the Contractor shall when so notified forthwith submit in substitution new sureties acceptable to the Comptroller. No further payment shall be deemed due or shall  
20 be made until the new sureties shall qualify and be accepted by the Comptroller.

30 IN WITNESS WHEREOF, The President of the Borough of Queens has hereunto set his hand for and on behalf of The City of New York, and the Contractor has also hereunto set his or its hand the day and year herein first above written; and the President and Contractor have executed this agreement in triplicate; one part of which is to remain with the President, one other to be filed with the Comptroller of The City of New York, and the third to be delivered to the Contractor.

FRANK X. SULLIVAN,  
Acting President of the Borough of Queens.

O'ROURKE ENGINEERING  
CONSTRUCTION COMPANY

By John F. O'Rourke,  
President.  
(Contractor (s)).

40 Attest : Innis O'Rourke,  
Secretary.

EXHIBIT C-17 (*Continued*):

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

On this 23rd day of January, 1920, before me personally came FRANK X. SULLIVAN, to me known and known to me to be the Acting President of the Borough of Queens, of The City of New York, the person described as such in and who as such executed the foregoing instrument and he acknowledged to me that he executed the same as said Acting President for the purposes therein mentioned.

WILLIAM P. BUCKLEY,  
Commissioner of Deeds, New York City.

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

On this 19th day of January 1920, before me personally came JOHN F. O'ROURKE to me known and known to me to be the President of the O'Rourke Engineering Construction Co. who being by me duly sworn, did depose and say for himself that he resides in City of New York; that he is the President of the O'Rourke Engineering Construction Co., the corporation described in and which executed the above instrument; that he knew the corporate seal of said corporation; that the seal affixed to the said instrument is such corporate seal; that it was so affixed by order of the Board of Directors of said O'Rourke Engineering Construction Co. and that, by like order, he thereunto signed his name and official designation.

WILLIAM P. BUCKLEY,  
Commissioner of Deeds, New York City.

KNOW ALL MEN BY THESE PRESENTS, That we O'Rourke Engineering Construction Co. as principal, and the National Surety Co., The United States Fidelity & Guarantee Co., Massachusetts Bonding & Insurance Co., and the Globe Indemnity Company, as sureties are held and firmly bound unto the City of New York, in the sum of THREE HUNDRED THOUSAND DOLLARS (\$300,000.00), lawful money of the United States of America, to be paid unto THE CITY OF NEW YORK, or to its certain attorneys, successors or assigns; for which payment, well and truly to be made, we and each of us do bind ourselves, and our several and respective heirs, executors, adminis-

EXHIBIT C-17 (*Continued*):

trators and assigns, jointly and severally, firmly by these presents.

Signed, sealed and dated this 19th day of January, 1920.

10 WHEREAS, The above bounded O'Rourke Engineering Construction Co., by an instrument in writing, under their hands, and hearing even date with these presents, one part whereof is hereto annexed, have contracted with the City of New York, by the President of Borough of Queens, to furnish all the labor and materials, and to excavate for, build, construct and in all respects complete sewer, etc., in Linden Street from 32nd Avenue to 35th Avenue, etc., Third Ward, together with all the work incidental thereto, as is fully and at large set forth and described in the contract aforesaid.

20 NOW, THEREFORE, The condition of the above obligation is such that if the said above bounden O'Rourke Engineering Construction Co. and its, his or their heirs, executors, administrators and assigns, or any or either of them, shall well and truly, and in good, sufficient and workmanlike manner, perform or cause to be performed the said contract, and each and every of the covenants, promises, agreements and provisions therein contained on their part to be performed, and complete the same within the period therein stipulated, and in each and every respect comply with the conditions therein contained, then this obligation to be void; otherwise, to remain in full force and virtue.

30 O'Rourke Engineering Construction Co.,  
By JOHN F. O'ROURKE, [L. S.]  
President [L. S.]  
Attest : INNIS O'ROURKE,  
Secretary.

We qualify to the extent of Seventy five thousand dollars (\$75,000.00) hereof and no more.

40 United States Fidelity and Guaranty Co.,  
By ALONZO GORE OAKLEY,  
Attorney-in-fact.  
Attest: C. D. MARSAC,  
Attorney-in-fact.

EXHIBIT C-17 (*Continued*):

We qualify to the extent of Seventy five thousand dollars (\$75,000.00) hereof and no more.

Massachusetts Bonding & Insurance Co.,

By GEORGE G. HAYES,  
Assistant Manager.

10

Attest : ISAAC C. OGDEN,  
Attorney-in-fact.

We qualify to the extent of Seventy five thousand dollars (\$75,000.00) hereof and no more.

Globe Indemnity Company,

By GEO. W. YUENGLING,  
Res. Vice President.

20

Attest: JOHN C. HARDY,  
Res. Ass't Secretary.

We qualify to the extent of Seventy five thousand dollars (\$75,000.00) hereof and no more.

National Surety Company,

By L. W. FITZGERALD,  
Res. Vice President.

30

Attest: F. J. DANAHY,  
Res. Ass't Secretary

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

40

On this 19th day of January 1920, before me personally came JOHN F. O'ROURKE, to me known and known to me to be the President of the O'Rourke Engineering Construction Co., who, being by me duly sworn, did depose and say for himself that he resides in City of New York; that he is the President of the O'Rourke Engineering Construction Co., the corporation described in, and which executed the above instrument, that he knew the corporate seal of said corporation; that the seal affixed to the said instrument is such corporate seal; that it was so affixed by order of the Board of Directors of said O'Rourke

EXHIBIT C-17 (*Continued*):

Engineering Construction Co. and that by like order he thereto signed his name and official designation.

WILLIAM P. BUCKLEY,  
Commissioner of Deeds, New York City.

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FUNDS

PRESIDENT'S CERTIFICATE

It is hereby certified that the estimated cost of the work and materials required by the within contract is EIGHT HUNDRED SEVENTY SIX THOUSAND SIXTY ONE 80/100 DOLLARS (\$876,061.80), and is chargeable to the Street Improvement Fund of the City of New York.

20

FRANK X. SULLIVAN,  
Acting President of the Borough of Queens.

The City of New York, January 23rd, 1920.

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SPECIFICATIONS

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TRENCHES

Length of trench.

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1. Unless otherwise directed or permitted not more than 200 feet of any trench in advance of the end of the built sewer shall be open at any time, and unless written permission to the contrary is given, the trench shall be excavated to its full depth for a distance of at least 20 feet more than the minimum length of sewer permitted to be laid in it. (See paragraphs 159 and 182.) Trenches for house connection drains shall not be open on both sides of the street at the same time, unless permission has previously been given to close the street. Unless otherwise directed each trench for basin connections and house connection drains shall be fully excavated for its entire length before any pipes are laid therein.

EXHIBIT C-17 (Continued):

Sheeting and bracing.

2. Where necessary the sides of the trenches and excavations shall be supported by adequate sheeting and bracing. Steel sheeting may be used only where directed. Sheeting and bracing will be paid for only when left in place by written order, in which event the amount left in place will be paid for at the contract price for such material. Unless specially permitted sheeting against which concrete is placed shall not be removed and will not be paid for. The Contractor will be held accountable and responsible for the sufficiency of all sheeting and bracing used, and for all damage to persons or property resulting from the improper quality, strength, placing, maintaining or removing of the same.

Sheeting in soft material.

3. Where the material to be excavated is of such a character as to render it necessary, the sheeting shall be closely driven and to such depth below the bottom of the sewer as may be directed.

Tunneling.

4. All work shall be done in open trenches or excavations; no tunneling shall be done except with the consent of the Engineer, or as specified.

Trees and stumps.

5. The Contractor shall grub and clear the surface over the trenches and excavations of all trees and stumps and remove the same from the work.

Material to be disinfected.

6. If required, any or all of the excavated material shall be satisfactorily disinfected or deodorized or immediately removed from the work.

Roadway, sidewalks, etc., to be kept clear.

7. The excavated material and materials of construction shall be so deposited, and the work shall be so conducted as to leave open and free for traffic all crosswalks, a space on each sidewalk not less than one-third the width of such sidewalk and unless permission is given to the contrary a roadway not less than 8 feet wide for the free passage of vehicles. Street hydrants,



EXHIBIT C-17 (*Continued*):

water gates, fire alarm boxes and letter boxes shall be kept accessible for use. Not more than 300 feet of sidewalk shall be used at any time for storage of materials of construction or material excavated from any one trench. During the progress of the work the Contractor shall maintain such crosswalks, sidewalks and roadways in satisfactory condition, and the work shall at all times be so conducted as to cause a minimum inconvenience to public travel, and permit of safe and convenient access to private and public property along the line of the work.

Surplus material.

8. If all of the excavated material cannot be stored on the street in such a manner as to maintain the traffic conditions hereinbefore specified, the surplus shall be removed from the work and stored. After the construction of the sewer, so much of this material as is of satisfactory quality and necessary for the purpose shall be brought back and used for backfilling the trench.

Material from first 100 feet to be carted away.

9. Where directed, in built-up districts and in streets where traffic conditions render it necessary, the material excavated from the first 100 feet of trench shall be carted away by the Contractor as soon as excavated, and the material subsequently excavated, if suitable for the purpose, shall be used to backfill the trench in which the sewer has been built, and neither the excavated material nor materials of construction shall be stored on the roadway or sidewalks.

Fence.

10. Where necessary a suitable fence shall be placed along the sides of the trench to keep the street safe for traffic.

Temporary bridges.

11. Where any crosswalk is intersected by the trench, it shall be temporarily replaced by a substantial timber bridge not less than 3 feet wide, with side railings. Where required, suitable temporary bridges for vehicles shall be provided and maintained across the trench.

Disposal of water from trenches.

12. The Contractor shall at all times during the progress of the work keep the trenches and excavations free from water.

EXHIBIT C-17 (*Continued*):

The water from the trenches and excavations shall be disposed of in such a manner as will not cause injury to the public health, nor to public or private property, nor to the work completed or in progress, nor to the surface of the streets, nor cause any interference with the use of the same by the public.

Cost to be covered.

- 10           13. The cost of all labor required to be done and all materials required to be furnished in the performance of all the work specified in paragraphs 1 to 12 inclusive, except as otherwise provided, shall be covered by all the contract prices for all the items for which there are contract prices.

EARTH EXCAVATION.

- 20           14. Earth excavation shall include the removal of all material other than rock as hereinafter defined.

The restoration of trees.

Construction of curbing.

- 30           14-a The Contractor shall deposit with the PARK DEPARTMENT of the Borough of Queens the sum of ONE THOUSAND, ONE HUNDRED AND TWENTY-FIVE DOLLARS (\$1,125.00) to cover the cost of replacing twenty (20) existing trees with new pin oak trees of from 5" to 6" in diameter, together with the construction of curbing around twenty five (25) existing trees so that they will not be destroyed by the construction of the sewer. The cost of this work shall be included in the price bid for Double Barrel 8'-0" Sewer.

Width of trench for sewers, etc.

- 40           15. The minimum widths of trenches in earth, for pipe sewers, basin connections, house connection and other drains not over 18 inches in diameter, shall be such as to give a clearance inside the sheeting of 8 inches on each side of the pipe exclusive of spur and hubs. The minimum widths of trenches in earth, inside the sheeting for other sewers shall be the greatest external width of the structures, including the necessary forms, to be built therein.

15-a. The shafts, tunnel and other excavations in which the sewer and appurtenances are to be constructed shall be excavated in all cases in such manner and to such depths and widths

EXHIBIT C-17 (*Continued*):

as will give suitable room for building the structures they are to contain, and for bracing and supporting, pumping and draining.

16. Where a riser, manhole or other appurtenance or the foundation therefor extends beyond the exterior lines of the sewer or its foundation, the minimum excavation in earth, required for the same shall be that contained in a prism with vertical sides and a horizontal section equal to the smallest rectangle which will enclose such appurtenance and its foundation.

Excavation for Basin manholes, etc.

17. The minimum dimensions of the excavation in earth, for brick basin manholes and inlets, shall be such as to give a clearance inside the sheeting of 1 foot on all sides, above the foundation, but in all such cases the excavation shall be large enough to include for foundations for such structures shown on the plan. The excavation for basin manholes and inlets shall be of such dimensions as to permit the proper placing and removal of the necessary forms.

Depth of trenches.

18. The trenches shall be excavated to the depths required for the foundations of the sewers and appurtenances shown on the plan, and where the conditions are such as to make it necessary, to such additional depths as may be directed. Where pipe is laid without a cradle the bottom of the trenches shall be excavated to fit the lower third of the pipe, and excavations shall be made to receive the hubs. All irregularities in the bottoms of the trenches shall be filled up to the required grade with suitable material.

Cost to be covered.

19. The cost of all labor required to be done and all materials required to be furnished in the performance of all the work specified in paragraphs 15 to 18 inclusive, except as otherwise provided, shall be covered by all the contract prices for all the items for which there are contract prices.

**ROCK EXCAVATION.**

20. Rock excavation shall include the excavation and removal of the following materials:

EXHIBIT C-17 (Continued):

(a) Rock which shall be determined to be of such a character as to warrant its removal by blasting, in order to insure the prompt and proper prosecution of the work.

(b) Boulders and pieces of rock, masonry in mortar and concrete, each of which contains 1 cubic yard or more, except the masonry and concrete of old sewers and their appurtenances.

10        21. Pieces of rock, masonry, concrete or boulders, which fall or slide into the trench from beyond the lines thereof, as herein defined, will not be measured, and the cost of the removal of the same shall be covered by all the contract prices for all the items for which there are contract prices.

Width of trench.

Rock excavation for basin manholes and inlets.

20        22. The required width of trench in rock for pipe sewers, basin connections, house connection and other pipe drains will be such as to give a clearance of 1 foot on each side of the pipe, exclusive of spurs and hubs; the required width of trench in rock, for other sewers and drains, will be such as to give a clearance of 1 foot on each side of the structure to be built therein at its greatest external width. Where a riser, manhole or other appurtenance, or the foundation therefor, extends beyond the exterior lines of the sewer or its foundation, the excavation in rock required for the same will be that contained in a prism with  
30        vertical sides and a horizontal section 1 foot wider on each side than the smallest rectangle which will enclose such appurtenance and its foundation. The required dimensions of the excavation in rock, for basin manholes and inlets will be such as to give a clearance of 1 foot on all sides above their foundation.

Depth of trench.

40        23. The rock shall be excavated to the depths required for the cradles and foundations of the structures as shown on the plan.

Measurement.

24. The volume of rock to be paid for will be that contained in prisms with vertical sides and of such dimensions as to give the widths and clearances hereinbefore specified from the bottoms of the trenches, as specified, to the surface of the rock.

EXHIBIT C-17 (*Continued*):

Rock stripped.

25. Rock shall be stripped in sections, which, unless otherwise permitted, shall be not less than 50 feet in length, boulders shall be piled in such manner as to provide ready measurement by the Engineer, and the Engineer shall then be notified in order that he may measure the same. Rock excavated or blasted before  
10 such measurement is made will not be paid for.

Excavation for branches.

26. Wherever a branch for a proposed sewer or extension of a sewer is built in rock, the required trench shall be excavated for a distance of not less than 5 feet beyond the end of such branch, in the direction of the proposed sewer or extension.

Blasting.

27. All blasting operations shall be conducted in strict  
20 accordance with the City ordinances and regulations relative to rock blasting and the storage and use of explosives. Any rock excavation within 5 feet of water main less than 36 inches in diameter, and within 10 feet of a water main 36 inches or more in diameter, shall be done with very light charges of explosive, or if directed, without blasting, and the utmost care shall be used to avoid breaking or disturbing the main.

Exposed structures to be protected.

28. All exposed sewers, manholes receiving basins and  
30 other structures shall be carefully protected from the effects of blasts. Any damage done to such structures shall be promptly repaired by the Contractor at his own expense.

Price to cover.

29. The contract price for rock excavation shall cover the  
40 cost of all labor and materials required to excavate and remove all rock as specified, and without regard to its subsequent use.

BACKFILLING.

Backfilling around sewers, etc.

30. Unless otherwise specified or directed, all trenches and excavations shall be backfilled immediately after the structures are built therein. For a depth of at least 2 feet over the top

EXHIBIT C-17 (*Continued*):

of the sewer, basin connection, house connection or other drain, the material for backfilling trenches as excavated, shall be clean earth, sand or rock dust. It shall be carefully deposited in uniform layers not exceeding 6 inches in depth, and unless otherwise permitted, each layer shall be carefully and solidly tamped with appropriate tools in such a manner as to avoid injuring or disturbing the completed work.

10 Backfilling for remainder of trench.

31. Backfilling for the remainder of the trenches as excavated, shall be approved material free from organic matter and containing no stone over 10 inches in their largest dimensions. Any stones shall be so distributed through the mass that all interstices are filled with the fine material. This backfilling shall be deposited as directed, and unless otherwise permitted, shall be spread in layers and solidly tamped.

20 Backfilling around manholes, basin manholes and inlets.

32. Backfilling within 2 feet of manholes, house connection drains, basin manholes and inlets and other structures shall be of the same quality as that specified in paragraph 30. It shall be uniformly deposited on all sides and unless otherwise permitted, solidly tamped in such a manner as to avoid injuring the structures or producing unequal pressures thereon.

puddling.

30 33. Backfilling shall, if required, be flooded or puddled with water as the work progresses, instead of being tamped.

34. When sheeting is drawn, all cavities remaining in or adjoining the trench shall be solidly filled. When sheeting is left in place all cavities behind such sheeting shall be solidly filled as directed.

Deficiency of filling.

40 35. Unless otherwise shown on the plan, the trenches shall be backfilled to the height of the surface of the ground as it existed at the commencement of the work. Should there be a deficiency of proper material for the purpose, the Contractor shall furnish and place such additional material as may be required.

EXHIBIT C-17 (*Continued*):

Temporary bulkheads.

36. For retaining the backfilling only temporary bulkheads will be allowed over sewers, basin connections and drains. Such bulkheads shall not be of stone, and they shall be removed as the trenches are backfilled.

10 Curves, branches, etc., not to be covered.

37. Sewers built on curves, also drains, basin connections, house and sewer connections and intersections, ends of sewers and branches shall not be covered until the Engineer shall have inspected, measured and located the same, and given permission to backfill the trenches over them.

Removal of surplus material.

20 38. As the trenches are backfilled, the Contractor shall remove all surplus material and regrade and leave free, clear and in good order all roadways and sidewalks to within 100 feet of the end of the completed work. During the progress of and until the final acceptance of the work, he shall maintain in good and safe condition the surface of the street over all the trenches, and promptly fill all depressions over and adjoining the trenches caused by settlement of the backfilling. In case of failure or neglect on the part of the Contractor to comply with the requirements of this paragraph within 24 hours after the service upon him of a written notice so to do, the President may 30 furnish all materials and do all work required, and the cost thereof will be charged to the Contractor and deducted from any moneys due or to become due him under this contract. All surplus material or any part thereof shall, if required, be deposited as directed on the streets and avenues within the limits of this contract where the same are below grade, and in such a manner as to leave the surfaces of the filled material even.

Disposal of surplus material from sewers and tunnel.

40 38-a. Material displaced by the sewers or tunnel not required for the fill in Linden Street shown on plan shall be hauled to a dump situated about 3,600 feet from the shaft at Amity Street and Lawrence Street and deposited according to and in a manner satisfactory to the Department of Highway and in the line of Saul Street north of the line of the old Stewart railroad embankment.

EXHIBIT C-17 (Continued):

The cost of the above work shall be included in the price bid per linear foot for the sewers and tunnel from which the material is obtained.

Cost covered.

10 39. The cost of all labor required to be done and all materials required to be furnished in the performance of all the work specified in paragraphs 30 to 38, inclusive, shall be covered by all the contract prices for all the items for which there are contract prices.

CEMENT.

20 40. All cement used in the work shall be a high grade Portland cement of a well-established and approved brand. It shall be the product obtained by finely pulverizing clinker produced by calcining to incipient fusion, an intimate mixture of properly proportioned argillaceous and calcareous substances, with only such additions subsequent to calcining as may be necessary to control certain properties. Such additions shall not exceed 3 per cent. by weight, of the calcined product.

Specific gravity; weight.

30 41. The cement shall have a specific gravity of not less than 3.10 after being thoroughly dried at 212°F. It shall weigh not less than 380 pounds net, to the barrel, 4 bags of 95 pounds each being considered equivalent to a barrel.

Fineness.

42. The cement shall be dry, finely ground, of uniform color and free for lumps. It shall leave a residue of not more than 8 per cent. by weight, when passed through a No. 100 sieve, and not more than 25 per cent. when passed through a No. 200 sieve.

40 Tensile strength.

43. Standard briquettes shall develop within the periods specified, tensile strength not less than that shown in the following table.



EXHIBIT C-17 (Continued):

Neat Cement:

24 hours .....	175 pounds per sq. in.
7 days (1 day in moist air, 6 days in water) .....	500 pounds per sq. in.
28 days (1 day in moist air, 27 days in water) .....	600 pounds per sq. in.

10 Mortar consisting of 1 part cement and 3 parts of Standard Ottawa Sand, by weight:

7 days (1 day in moist air, 6 days in water) .....	180 pounds per sq. in.
28 days (1 day in moist air, 27 days in water) .....	225 pounds per sq. in.

20 The average of the tensile strengths developed at each age by the briquettes in any set made from one sample will be considered the strength of the sample at that age, excluding any results that are manifestly faulty. The average strength of briquettes at 28 days shall be greater than the average strength at 7 days, and if tests are made after 28 days the strength shall be not less than that at 28 days.

Soundness.

30 44. Pats of neat cement when tested for constancy of volume or soundness shall remain firm and hard and show no sign of checking, cracking, distortion or desintegration.

Setting.

45. Unless otherwise required, the cement shall not develop initial set in less than 30 minutes, and shall develop final set in not less than 1 hour nor more than 10 hours. Quick-setting cement of an approved brand shall, if required, be kept on the work in sufficient quantity to provide for any contingency requiring the use of the same.

40 Testing.

46. The cement will be subjected to such tests as the Engineer may deem necessary, and such tests will be made in accordance with the methods recommended by the Committee on Uniform Tests of Cement of the American Society of Civil Engineers, except that the time of setting will usually be determined by means of the Gillmore needles. In case of dispute as to the

EXHIBIT C-17 (*Continued*):

time of setting, this test will be made by means of the Vicat needle.

**Retesting.**

47. Any cement which shall have been kept in storage after testing for a sufficient time to warrant it, shall be retested. Any prior acceptance shall be considered void and the acceptance or rejection of the cement shall depend upon the results of the latest tests.

Approval of brand may be rescinded.

48. The Engineer may at any time rescind the approval of any brand of cement that develops objectionable qualities.

**Samples.**

49. The Contractor shall notify the Engineer of the arrival of cement on the work, and furnish such facilities as may be required for obtaining samples for testing. Samples will be taken so as to fairly represent the material. The number of packages sampled and the quantity to be taken from each will depend upon the importance of the work and the number of tests to be made.

**Delivery and storing.**

50. Cement shall be delivered on the work in barrels or approved bags of uniform size, with the brand and the name of the manufacturer plainly marked thereon; it shall be immediately stored in a dry place and carefully protected from the weather. A sufficient stock of cement shall be kept on the work in advance of the necessity for its use to permit of the making of the required seven day tests. Except by written permission, no cement shall be used before it has been tested and accepted, and any concrete or masonry which may have been made under such permission with cement that is subsequently rejected, shall be removed and replaced by the Contractor, at his own expense, with concrete or masonry made of accepted cement.

**Cost to be covered.**

51. The cost of furnishing, storing and incorporating cement in the work, and the cost of samples required for testing, shall be covered by the contract prices for the structures or classes of work in connection with which the cement is used.

EXHIBIT C-17 (*Continued*):

MORTAR.

52. All mortar used in the work, unless otherwise specified, shall be composed of 1 volume of cement, as in the original package, and  $2\frac{1}{2}$  volumes of sand. Where required, mortar of cement and sand in other proportions or mortar of neat cement shall be used as directed.

10 Sand.

53. Sand shall be composed of grains of clean sharp quartz, not softer than hard limestones. It shall be moderately coarse and preferably made up of grains of varying size not exceeding one-quarter ( $\frac{1}{4}$ ) inch producing a mass with low percentage of voids. It shall not contain, in all, more than five (5%) per cent, by volume of clay, loam, mica, scales, silt, or other objectionable inorganic matter, nor more than one (1%) per cent. of organic matter.

20

Tests may also be made of the cement and sand used in the proportions of one (1) part cement to three (3) parts sand, and these tests must show at least 70 per cent. of the strength of the mortar made with the cement and standard sand, or the sand may be rejected.

Mixing.

54. Mortar shall be mixed in a suitable box or on a tight platform, and never upon the pavement or ground. The cement and sand shall be thoroughly mixed dry, until the mixture has a uniform color. Clean, fresh water shall then be added and the mass worked until a mortar, which is uniform and of the required consistency is produced. The mortar shall be mixed in no greater quantity than is required for the work in hand, and any that has set sufficiently to require retempering shall not be used.

30

Freezing weather.

55. The mixing and use of mortar in freezing weather shall be subject to the same requirements as hereinafter specified for mixing and placing concrete under similar conditions.

40

Cost covered.

56. The cost of all labor and materials required to furnish and place the mortar in the work, as specified, shall be

EXHIBIT C-17 (Continued):

covered by the contract price for the structure or class of work in connection with which the mortar is used.

CONCRETE.

Class A concrete.

57. Class A concrete shall be made of 1 part of cement,  
10 2 parts of sand and 4 parts of broken stone or gravel.

58. Broken stone for Class A concrete shall be approved  
trap rock, dense fine-grained blue limestone or granite broken  
into roughly cubical or pyramidal fragments. Broken stone  
which contains dust, loam, clay, organic matter or other im-  
proper substances shall not be used. Broken stone for Class A  
concrete shall be the run of the crusher that will pass through a  
screen with circular openings  $1\frac{1}{4}$  inches in diameter and shall be  
20 retained on a screen with openings  $\frac{1}{8}$ -inch in diameter. Gravel  
shall be equal in quality to North Shore Long Island gravel,  
shall be clean and sound, and shall be of the sizes herein specified  
for broken stone.

SHIELD DRIVEN CONCRETE TUNNEL

The Precast Monolithic Tunnel shall be composed of 1-2-4  
concrete and 1-1 $\frac{1}{2}$  grout mixed in accordance with the specifica-  
tions.

30 The blocks shall be smoothly cast in metal forms to exact  
dimensions and the spacing of the projections and recesses when  
erected shall not vary more than  $\frac{1}{4}$ " circumferentially or  $\frac{1}{8}$ "  
radially from their true position where they interlock. The side  
of the recesses at the top shall be spaced not less than  $\frac{1}{8}$ " from  
projections to admit grout between them. The blocks in each  
ring shall break joints with the blocks of the adjoining rings.

40 Three concrete blocks in each ring shall have grout holes  
molded in them, opening about 2" away from the joints on the  
inner face of the tunnel and terminating in the middle of the joint  
between adjoining blocks. The grout holes shall have suitable  
screw threads for connection to grout pipes.

There shall also be provided in at least three blocks of each  
ring a passage way through which grits can be blown by com-  
pressed air into the space outside the lining left by the shield as  
it moves forward. These holes shall have a screw thread similar

EXHIBIT C-17 (*Continued*):

in size to those provided in the grout holes for connection to the grit pipe.

10 Suitable apparatus shall be provided for placing the grit packing into the space outside the concrete lining as soon as the shield commences to move forward. This packing shall be begun after each shove is commenced and completed before the shield is shoved again, so that at no time will the ground surrounding the tunnel be left unsupported for a greater length than the width of one ring.

All the joints of each ring shall be pointed as soon as practicable after its erection, and after the pointing has set sufficiently, grout is to be forced through the grout holes completely filling all the joints and interlocks between the blocks and any cavities outside the blocks that may exist in the grit packing or the surrounding ground.

20 The transverse joints between the rings shall be uniformly maintained  $\frac{1}{4}$ " in width by having the projections of the blocks  $\frac{1}{4}$ " longer than the depth of the recesses into which they fit.

30 The longitudinal joints between the blocks shall average  $\frac{1}{4}$ " in width steel wedge spacers shall be used in these joints to hold the blocks apart and maintain the arch until the ring has been pointed and grouted, after which they shall be removed and the openings in the joints left by them shall be completely filled with mortar.

No concrete blocks shall be erected until at least thirty days after they have been molded, and any block which is not perfectly sound when inspected outside the tunnel, shall be rejected and removed from the site of the work, also any block showing cracks or any other signs of failure from the strain imposed by the jacks in shoving the shield, shall be immediately removed from the ring and replaced by one that is acceptable.

TUNNEL SHIELD

40 The tunnel shield shall be built in accordance with the best practice and be of sufficient strength to properly carry the superimposed ground and take the thrust of the jacks while the shield is being shoved. The tail of the shield shall be 4" larger inside than the tunnel.

EXHIBIT C-17 (*Continued*):

The erector shall be of sufficient strength and power and have a suitable grip for the lifting and setting the concrete blocks in position. The grip for holding the blocks shall be of approved design and the grip holes of the blocks shall be of sufficient depth and size to enable the blocks to be handled with safety.

10 A platform shall be provided having two steel arches with two adjustable H bars for each concrete block above the springing line of a length sufficient to bear against four rings. Each block as soon as erected shall be supported on these bars until the whole ring is erected and wedged in the longitudinal joints when the bars are released while the shield and platform are shoved forward. After the shove the bars shall again be jacked to continuous contact with the blocks, the rings being kept in a true circle until fixed in position by the grit packing.

20 The price bid per linear foot of Precast Tunnel shall include excavation, blocks and their erection, grit necessary to fill the space between the outside of the tunnel and the outside of the shield.

Grit outside of the theoretical amount mentioned above shall be paid for as excess grit.

30 The grit holes shall be filled by setting a suitable concrete plug of approved form in cement mortar flush with the face of the tunnel. The lining of the tunnel on completion shall be painted with grout the cost to be included in price bid per linear foot tunnel.

Measuring ingredients.

67. For the purpose of determining the proportions of the materials for concrete, each bag of cement will be considered as containing 9/10 cubic foot, and the other ingredients shall be measured by an approved method.

Water.

40 68. Only clean fresh water shall be used for concrete.

Mixing.

69. Unless permitted to be mixed by hand, concrete shall be mixed in approved mechanical batch mixers, so constructed and operated that the ingredients of the concrete may be accurately measured and thoroughly mixed. Enough water shall be added

EXHIBIT C-17 (*Continued*):

10 during the mixing to bring the concrete to the required consistency, which generally shall be such that the concrete may be poured into place without causing the separation of the stones from the mortar. When concrete is mixed by hand the broken stone or gravel shall be spread on a tight platform in a bed about 4 inches deep and shall be thoroughly wetted. The cement and sand shall be mixed dry on a suitable platform, until the mixture has a uniform color. This mixture shall be spread evenly on the bed of wet stone, water added, and the entire mass turned until each piece of stone is entirely coated with mortar and a concrete produced which is uniform and of the consistency herein specified for machine mixed concrete. When a comparatively dry concrete is required it shall be mixed to such consistency as may be directed.

Placing concrete.

20 70. Concrete shall be mixed only in such quantity as is required for the work in hand, and any that has set sufficiently to require retempering shall not be used. Any concrete in which the water has separated from the solid matter shall be satisfactorily remixed before being placed. The concrete shall be so deposited in the work as to prevent the separation of the stone from the mortar. It shall be deposited in as nearly a continuous operation as practicable and shall be tamped or spaded with suitable tools to expel air bubbles and produce a dense and compact mass. When the operation of placing concrete is interrupted  
30 the concrete in the work, shall, if required, be confined by suitable temporary forms or bulkheads. When concrete is to surround reinforcing metal, structural steel, or wire netting, it shall be so deposited as to work closely around such material. When a comparatively dry concrete is used it shall be deposited in horizontal layers not exceeding 6 inches in depth and solidly tamped.

Joining old and new concrete.

40 71. When fresh concrete is to be laid on or adjoining concrete already set, the surface of the latter shall be thoroughly cleaned, washed, and roughened, and coated with a grout of neat cement before the fresh concrete is deposited.

Forms and centres.

72. The Contractor shall provide all necessary forms and centres for shaping concrete wherever used. They shall be true

**EXHIBIT C-17 (Continued):**

10 to the required shapes and sizes, strong enough and so secured in place as to withstand all operations incidental to placing the concrete, and watertight, and the faces against which the concrete is to be placed shall be satisfactorily smooth and clean. Timber used in forms and centres for exposed faces of concrete shall be seasoned stock. Unless otherwise permitted, those surfaces of forms and centres which will be in contact with concrete shall be coated as directed with an approval lubricant; when no lubricant is required such surfaces shall be thoroughly wetted just before the concrete is placed.

**Removal of forms and centres.**

20 73. The forms and centres shall be left in place until the concrete has set sufficiently to permit their removal without danger to the structure, and until so much of the backfilling or embankment as may be directed has been put in place. No forms or centres shall be struck or removed until permission to do so has been given.

**Exposed surfaces.**

30 74. Special care shall be used to secure a smooth and uniform finish to the surfaces of concrete which will be exposed in the completed structure. Immediately after the removal of the forms such surfaces, if uneven, shall be rubbed smooth to a uniform and satisfactory finish, all exposed edges of concrete shall be neatly rounded as directed, and if any voids, projections or other imperfections be found, such defects shall at once be corrected by tooling, cutting out and filling with mortar, or otherwise, as directed.

**Expansion joints.**

75. Expansion joints shall be provided in such manner and at such places as are shown on the plan or as may be directed. All unavoidable joints shall be made as shown on the plan or as directed.

40 **Depositing concrete under water.**

76. Whenever it becomes necessary to place concrete under water, it shall be deposited by means of drop-bottom buckets or other approved method. Concrete so deposited shall be carefully spread without tamping.



EXHIBIT C-17 (*Continued*):

Freezing weather.

77. In freezing weather, until the temperature falls to 24 degrees Fahrenheit the water used for concrete shall, if directed, be heated to an approved temperature, and if directed, one per cent. by weight of salt shall be added to the water for each degree Fahrenheit that the temperature of the air is below 32 degrees Fahrenheit. The other materials for the concrete shall be heated sufficiently to remove all frost and ice. No concrete shall be laid when the temperature of the air is below 24 degrees Fahrenheit.

Protection.

78. Concrete shall be allowed to set for such time as may be directed before being worked or walked upon, or before filling, backfilling or other material is placed upon or against it. It shall not be flooded with water until it has sufficiently set. Concrete shall be carefully protected from injury, from freezing and from the drying effects of the sun and wind by covering it with canvas, bagging, hay or other suitable and approved materials. Such protection shall be placed as soon as the concrete is in condition to receive it, and except in freezing weather, the covering as well as the concrete shall be kept wet for such time as may be directed.

Measurement.

79. The amount of concrete to be paid for as such will be all concrete put in place as shown on the plan or as directed, except such concrete shown on the plan as being part of structures for which there are contract prices and the cost of which is hereinafter specified to be covered by the contract prices for such structures. No deduction will be made on account of the space occupied by spurs for house connections, reinforcing metal, structural steel or waterproofing, but deduction will be made on account of space occupied by pile heads, timber, sewers, basin connections and drain pipes.

Prices to cover.

80. The contract prices for the various classes of concrete shall cover the cost of all labor and materials required to furnish, place and remove all necessary forms and centres, and to furnish, make, place, finish and protect the concrete as specified.

EXHIBIT C-17 (Continued):

BRICK MASONRY.

Quality of bricks.

81. All bricks used in the work shall be sound and hard burned throughout, and of uniform size and quality. If required the bricks shall be culled immediately after they are brought on the work and all bricks which are warped, cracked or of improper quality shall be at once removed. The proportion of bats permitted will be determined according to the character and location of the work in which they are to be used.

GRIT AND GROUT.

Grit.

Immediately after the complete erection of a ring and before the shield is moved forward, grit shall be pumped in behind the lining. The grouting shall follow as close behind the shield as practicable. Whenever required by the Engineer, turnbuckles shall be furnished and placed by the Contractor at his own expense to prevent excessive deformation.

Grout.

On all portions of the tunnel work the Contractor shall furnish and place through the cast iron segments, grout pipes of an approved number and sort. The Contractor shall furnish and inject Portland cement grout in the proportion of one (1) bag of cement to one and one-half ( $1\frac{1}{2}$ ) cubic feet of sand. The materials shall be thoroughly mixed dry and water then added while the mixing proceeds, until the grout is of the required consistency. The mixing shall be continued vigorously, preventing the separation of sand, until the entire amount mixed is used. For the purposes of measurement, one (1) bag of cement and one and one-half ( $1\frac{1}{2}$ ) cubic feet of sand, will be considered to make 1.75 cubic feet of grout in place.

Amount of grout.

The amount of grout to be injected (equally distributed around the circumference) for the 7'-3" tunnel sewer shall be ten (10) cubic feet of grout per one foot length of sewer.

The machinery and pumps used to mix and pump the grout must be acceptable to the Engineer.

The cost of furnishing and injecting Portland cement grout to the amount hereinbefore specified shall be covered by

EXHIBIT C-17 (*Continued*):

the contract price for the tunnel sewers in connection with which it is to be used.

Whenever the Engineer shall direct that Portland cement grout in excess of the amounts hereinbefore specified shall be furnished and injected around the circumferences of the tunnel sewers, or in other parts of the work, such grout shall be paid  
10 for at the contract price bid for the same.

How laid.

83. Bricks shall be satisfactorily wet when being laid and each brick shall be laid in mortar so as to form full bed, end and side joints in one operation. The joints shall be not wider than  $\frac{3}{8}$  inch, except when the bricks are laid radially, in which case the narrowest part of the joint shall not exceed  $\frac{1}{4}$  inch. The bricks shall be laid in a workmanlike manner, true to line, and  
20 wherever practicable the joint shall be carefully struck and pointed on the inside. Brickwork shall be laid with a satisfactory bond, and as it progresses shall be racked back in courses, unless otherwise permitted.

Protection.

84. All fresh brickwork shall be carefully protected from freezing and from the drying effects of the sun and wind, and if required, it shall be sprinkled with water at such intervals and for such a time as may be directed. Brickwork shall be protected  
30 from injuries of all sorts, and all portions which may become damaged or may be found defective shall be repaired, or if directed, be removed and rebuilt.

Freezing weather.

85. In freezing weather bricks shall be heated sufficiently to remove all ice and frost.

86. The cost of all brick masonry and the requirements specified in connection therewith shall be covered by the contract  
40 price for the structure in connection with which it is used.

CUT STONES.

Materials.

88. Where shown on the plan, cut stones of the required kind, form, dimensions and finish shall be furnished and accur-

**EXHIBIT C-17 (Continued):**

ately set in full beds of mortar. The stones shall be sound, durable, fine grained and free from rifts, seams and laminations.

Cost covered.

89. The cost of all labor and materials required to furnish and set cut stones as specified shall be covered by the contract price for the structure or class of work in connection with which they are used.

**STRUCTURAL STEEL.**

**Quality.**

98. Structural steel shall be medium steel and rivet steel made by the open hearth process and shall conform to the latest revised Standard Specifications for Structural Steel for Buildings adopted by the American Society for Testing Materials, and such tests as may be required shall be made in accordance therewith and at the places hereinafter specified. The chemical and physical properties of the steel shall be as follows:

Properties Considered	Medium Steel	Rivet Steel
Phosphorus (maximum) . . . . .	0.06 per cent.	0.06 per cent.
Ultimate strength, lbs. per sq. in. . . . .	55,000-65,000	48,000-58,000
30 Yield point (minimum), lbs. per sq. in. . . . .	½ ult. tens. str.	½ ult. tens. str.
Elongation, per cent. in 8 in.  (minimum) . . . . .	1,400,000 <hr/> ult. tens. str.	1,400,000 <hr/> ult. tens. str.
Character of fracture . . . . .	Silky	Silky
40 Cold bend without fracture . . .	180° to diam. of 1 thickness	180° flat

**Finish.**

99. All finished material shall be free from injurious seams, flaws and cracks, and have a workmanlike finish.

EXHIBIT C-17 (*Continued*):

Variation in weight.

100. When steel is inspected at the mill or shop all pieces (except plates), which vary in weight more than  $2\frac{1}{2}$  per cent. from that specified shall be rejected; when steel is not inspected until it is delivered on the work such variation in weight will be sufficient cause for rejection when, in the judgment of the Engineer, the safety of the work will be impaired thereby.

Workmanship.

101. All structural steel shall be in accordance with the plan and approved shop drawings. All details not shown on the plan, and all workmanship and finish shall be equal to the best current practice in similar work for buildings.

Anchor bolts.

20 102. Anchor bolts and expansion bolts shall be furnished where required and set in place as directed. When holes are drilled in masonry or concrete for such bolts, the holes shall be washed clean and the bolts shall be firmly embedded in a mortar composed of equal parts of cement and sand, unless other material is shown on the plan.

Melt numbers.

30 103. Test specimens and every finished piece of steel shall be stamped with melt or blow number, except that small pieces may be shipped in bundles securely wired together, with the melt or blow number on a metal tag attached.

Tests and inspections.

40 104. The required tests and inspections of structural steel shall, if directed, be made at the mills and shops by the City's authorized inspector. The Contractor shall notify the City as to the mills and shops which are to supply the steel sufficiently in advance to enable the City to arrange for such tests and inspections and the mills and shops shall afford every facility for making the same.

Mill certificates.

105. If it is decided not to make the City's tests and inspections at the mills, then mill certificates showing the properties of each melt of which the steel is made will be accepted for consideration.

EXHIBIT C-17 (*Continued*):

Shipping invoices.

106. The Contractor will be required to furnish complete copies of shipping invoices with each shipment of steel.

Certificates, etc., for information only.

107. Steel will not be accepted until the required inspector's reports or mill certificates are received. All tests, inspections, reports and certificates are for the information of the Engineer, and he shall not be precluded on account thereof from requiring or making any further tests which he may deem necessary.

Shop drawings.

108. The Contractor shall prepare complete and accurate shop drawings of all steel work, and no shop work shall be done until such drawings shall have been approved. The Contractor shall furnish the Engineer with 3 complete sets of prints of the approved shop drawings.

Painting.

109. All steel shall be thoroughly cleaned of scale, rust, oil and dirt, and unless otherwise directed, those parts which are not to be bedded in concrete shall be painted with a priming coat of the best red lead and linseed oil or such other paint of equivalent value as may be directed. After erection the metal which will be exposed in the finished work shall be evenly painted with 2 coats of approved paint. No painting shall be done on wet surfaces.

Measurement.

110. The amount of structural steel paid for as such will be all structural steel placed in the work in accordance with the plan or directions, except any excess greater than 2½ per cent. above the weight required, and except such structural steel shown on the plan as being part of structures for which there are contract prices, and the cost of which is hereinafter specified to be covered by the contract prices for such structures. This paragraph does not apply to structural steel in screen house.

Price to cover.

111. The contract price for structural steel shall cover the cost of all labor and materials required to furnish, fabricate,

EXHIBIT C-17 (*Continued*):

erect and paint the same, to furnish all test pieces, to prepare and furnish prints of shop drawings, and to drill holes for and set anchor and expansion bolts, where required, all as specified.

STEEL REINFORCEMENT BARS.

Shape.

- 10            112. Steel bars for reinforcing concrete shall be of such shape as to afford an approved mechanical bond with the concrete at frequent intervals and to insure intimate contact between the steel and concrete. Plain bars may be used only when shown on the plan.

Samples.

- 20            113. The Contractor shall indicate the type of bars proposed to be used, and if required shall furnish samples thereof, and he is cautioned not to place the order for the bars until the type has been approved.

Size.

114. Each bar shall have a net cross sectional area equivalent to that designated on the plan or required, or it shall be the commercial size of the approved type of bar having a net cross sectional area next larger than that designated or required.

Variation in weight.

- 30            115. Reinforcement bars will be rejected if their actual weight varies more than 5 per cent. from their theoretical weight as shown by the manufacturer's tables. For weighing reinforcement bars the Contractor shall, whenever required, provide an accurate scale of an approved type, with a capacity of not less than 500 pounds.

Quality.

- 40            116. All steel for reinforcement bars shall be made by the open hearth process and shall conform to the latest revised Standard Specifications for Steel Reinforcement Bars adopted by the American Society for Testing Materials, and such tests as may be required, shall be made in accordance therewith, and at the places hereinafter specified. The chemical and physical properties of the steel shall be as follows:

EXHIBIT C-17 (Continued) :

Properties Considered	Structural Steel Grade		Hard Grade*		Cold Twisted Bars
	Plain Bars	Deformed Bars	Plain Bars	Deformed Bars	
Phosphorus, max.					
Bessemer .....	0.10	0.10	0.10	0.10	0.10
Open Hearth .....	0.05	0.05	0.05	0.05	0.05
Ultimate Tensile Strength, pounds per sq. in. ....	55,000-70,000	55,000-70,000	80,000 min.	80,000 min.	Recorded only
Yield Point, minimum pounds per sq. in. ....	33,000	33,000	50,000	50,000	55,000
Elongation, minimum per cent. in 8 inches .....	1,400,000	1,250,000	1,200,000	1,000,000	5 per cent.
	tens. str.	tens. str.	tens. str.	tens. str.	
Cold bend without fracture:					
Bars under ¾ in. in diam. or thickness .....	180° to diam. of 1t.	180° to diam. of 1t.	180° to diam. of 3t.	180° to diam. of 4t.	180° to diam. of 2t.
Bars ¾ in. in diam. or thickness and over ...	180° to diam. of 1t.	180° to diam. of 2t.	90° to diam. of 3t.	90° to diam. of 4t.	180° to diam. of 3t.

t. Nominal thickness or diameter of bar. \* The hard grade will be used only when specified.

20           117. Reinforcement bars shall be rolled from billets of new steel; they shall be straight and free from seams, flaws, cracks and imperfections of all kinds.

Tests and inspections.

118. The provisions of paragraphs 104, 105 and 107 relating to tests and inspections of structural steel shall also apply to tests and inspections of steel reinforcement bars.

30           119. Test pieces 18 inches long may be cut from any of the bars delivered on the work, and the failure of any test piece to meet the specified requirements, or the failure of any bar when being bent will be sufficient cause for the rejection of all steel from the melt from which the test piece or bar was made.

Bending sheets.

120. Bending sheets for steel reinforcement shall be furnished if required, in which case the reinforcement bars shall not be bent until such bending sheets have been approved.

40           Delivery and protection.

121. Bars shall be delivered in bundles, to each of which shall be securely wired a metal tag with the number of the melt from which the bars were made stamped thereon. The bars shall be protected at all times from mechanical injury and from the weather and when placed in the work they shall be free from



EXHIBIT C-17 (Continued):

dirt, scale-rust, paint and oil. Bars which are not to be embedded in concrete within a short time after being placed in the work shall, if directed, be immediately coated with a thin grout of equal parts of cement and sand.

Cutting and bending.

- 10        122. The bars shall be bent to the shapes shown on the plan and in conformity with approved templates. When bars are cut and bent on the work, the Contractor shall employ competent men and shall provide the necessary appliances for the purpose.

Placing.

123. All bars shall be as long as can be conveniently used, accurately bent, placed, spaced and jointed as shown or directed, and they shall be securely held in their required positions by approved devices until the concrete has been placed around them.

- 20        Joints.

124. Where more than one bar is necessary to complete the required length the joints shall be made by means of approved clamps which will develop the full strength of the bars or by looping the ends of the bars around each other in such a manner as to produce and maintain tension on the joint during construction or by lapping the ends of the bars, as directed, and wiring them together in an approved manner, or by lapping the ends of the bars for a distance of 30 times their nominal diameters for deformed bars, and 40 times their nominal diameters for plain bars, and with a space not less than 2 inches between them. Laps of longitudinal bars below the standard sewer sections shall be 6 inches in length unless otherwise shown on the plan or directed. Joints in longitudinal bars shall be staggered as directed.

Measurement.

- 40        125. The amount of steel reinforcement bars paid for as such will be the weight computed from the lengths and theoretical net sections of the steel reinforcement bars placed in the work in accordance with the plan or directions, except such steel reinforcement bars shown on the plan, as being part of structures for which there are contract prices, and the cost of which is hereinafter specified to be covered by the contract prices for such structures. The amount paid for will not include any waste metal cut from bars nor the lengths of bars used for laps, nor wires,

EXHIBIT C-17 (*Continued*):

clamps and other devices used for spacing, joining and securing the bars in place, nor lugs, corrugations and irregularities which increase the weight of the bars above the weight of plain steel bars of the same net cross sectional areas, the cost of all of which shall be covered by the contract price for steel reinforcement bars. In computing the weight 1 cubic foot of steel will be considered as weighing 489.6 pounds.

10

Price to cover.

126. The contract price for steel reinforcement bars shall cover the cost of all labor and materials required to furnish, clean, cut, bend, place, join, secure and protect the same, to furnish all test pieces and samples, and to prepare and furnish prints of bending sheets, all as specified.

EXPANDED METAL.

20 Type, quality, etc.

129. Expanded metal of approved type and quality and of the weight and size of mesh shown on the plan shall be furnished and placed where shown or directed. When placed in the work, it shall be free from dirt, scale-rust, paint and oil. It shall be placed in position with adjoining sheets lapped 1 mesh, and secured by an approved method until the concrete has been placed around it.

Measurement.

30

130. The amount of expanded metal paid for as such will be all expanded metal placed in the work in accordance with the plan or directions, except such expanded metal shown on the plan as being part of structures for which there are contract prices, and the cost of which is hereinafter specified to be covered by the contract prices for such structures. The amount paid for will not include waste material cut from sheets, nor the material used for laps, nor wires, clamps and other devices used in joining and securing the expanded metal in place, the cost of all of which shall be covered by the contract price for expanded metal.

40

Price to cover.

131. The contract price for expanded metal shall cover the cost of all labor and materials required to furnish clean, cut, bend, place, join and secure the same as specified.

EXHIBIT C-17 (*Continued*):

CAST IRON FLANGE PIPE AND MATERIALS

Quality of iron.

- 10 All flange pipes and special castings shall be made of cast iron of good quality, and of such character as shall make the metal of the castings strong, tough and even grain; and soft enough to satisfactorily admit of drilling and cutting. The metal shall be made without any admixture of cinder iron or other inferior metal, and shall be remelted in a cupola or air furnace.

Quality of castings.

The pipes and special castings shall be smooth, free from scales, lumps, blisters, sand holes and defects of every nature which unfit them for the use for which they are intended. No plugging or filling will be allowed.

- 20 Cleaning and inspection.

All pipes and special castings shall be thoroughly cleaned and subjected to a careful hammer inspection. No castings shall be coated unless entirely clean and free from rust and approved in these respects by the Engineer immediately before being dipped.

Coating.

- 30 The specifications relating to the casting of segment tunnel lining shall also apply to cast iron flange pipe and specials.

Blue prints.

The Contractor shall submit triplicate blue prints of the different pipe layouts to the Engineer for approval.

Cost Covered.

- 40 The cost of all labor and materials required to furnish, cost and place the cast iron flange pipe and specials as specified, shall be covered by the contract price for the structure of class of work in connection with which they are used.

WROUGHT IRON.

Quality.

132. Wrought iron shall be double rolled, tough, fibrous and uniform in quality. It shall be thoroughly welded in rolling and be free from surface defects. It shall have an ultimate tensile

EXHIBIT C-17 (Continued):

strength of at least 48,000 pounds per square inch, an elongation of at least 20 per cent. in 8 inches, and a fracture wholly fibrous. Specimens shall bend cold, with the fiber, through 180 degrees around a diameter equal to the thickness of the piece tested. When nicked and bent the fracture shall be at least 90 per cent. fibrous.

10 SEMI STEEL FOR TUNNEL SEGMENTS.

Composition.

The composition of the tunnel castings shall be as follows:

	Pig iron .....	30%
	No. 1 Machinery Scrap .....	38%
	Stove Plate .....	25%
	Steel .....	7%
20		<hr/>
		100%

The guaranteed tensile strength shall be 29,000 lbs. per square inch and cover.

Tests.

Transverse test.

30 Test bars one inch square and 15 inches long shall be cast and tested in their rough state. Four may be required from each ladle in the Engineer considers it necessary, but if the operation of molting is carried on continuously, not more than ten sets of four each will be required from any cupola during a day of 24 hours. Three bars of each set will be broken by transverse test in a suitable testing machine approved by the Engineer, the load being applied slowly; the bars being sustained on Knife edges 12 inches apart and load being applied by knife edge midway between the supports. The average breaking load of two out of three bars must exceed 2,500 pounds. If the first two bars tested  
40 show that metal possess this test, the third need not be broken. The fourth bar, when resting on solid supports one foot apart, must sustain four blows from a ten pound weight, striking midway between supports, that first blow falling from a height of 12 inches and subsequent ones from heights of 13, 14 and 15 inches successively. If the bars fail to pass any of these tests, the castings represented will be rejected and it will be understood that

EXHIBIT C-17 (*Continued*):

the castings represented include all made between the successful tests immediately preceding and following.

Tensile test.

10 If required, tensile tests shall be made and the bars used for such tests shall conform with the "Arbitration Test Bar" as adopted by the latest revised standard specifications of the American Society for Testing Materials.

Surface finish and Soundness.

20 Castings must have clean, smooth surfaces, free from fins and surface imperfections. They must be neatly chisled and wire-brush dressed before leaving the foundry. They must be sound and free from blow holes, cold shuts and flaws. Castings having blow holes plugged or puttied, and those which do not accurately conform in form and dimensions to the plans will be rejected. Each casting shall have its distinguishing letter or number cast on at the place indicated on the plans and the weight of each casting shall be conspicuously painted by the manufacturer with white oil paint on the same.

Inspection.

30 The Contractor shall notify the Engineer at what foundry he will obtain castings and shall give at least three (3) days notice in writing before any castings are manufactured in order to enable Inspectors to be present. No castings will be accepted which have been shipped either without such notification having been given or without having been marked by the Inspector.

No castings will be permitted to be used in the work which have been damaged in any way in transit of handling.

Weights.

40 The actual weight of any casting shall not differ more than  $2\frac{1}{2}$  per cent from the Engineers calculated weight. In calculating weights, the weight of one cubic foot will be taken at 450 pounds.

Pitch coating.

After being cleaned up and while still hot, at a temperature of about 300 degrees F castings shall be dipped in a bath of pitch. The pitch shall be made from coal tar, distilled until the naphtha is entirely removed and the material deodorized with a

EXHIBIT C-17 (Continued):

10 mixture of five (5) or six (6) per cent of linseed oil. Pitch which becomes hard and brittle when cold will not answer for this use. The pitch must be carefully reated in a suitable vessel to a temperature of 300 degrees F and must be maintained at this temperature during the process of dipping. The material will thicken and deteriorate as castings are dipped into it and fresh pitch must therefore be added frequently, and occasionally the vessel must be emptied and refilled with fresh pitch.

If in any case it should be impracticable to dip the castings in pitch before cooling, they shall be completely coated inside and out, immediately after cleaning, with linseed oil to prevent rusting until dipped. No casting shall be dipped after rust has set in. When dipped, the casting shall remain in the pitch bath until they have attained a temperature of 300 degrees Fahrenheit.

20 After being dipped the castings shall be removed slowly from the bath and laid on skids to drip and cool before being machined.

Clearing castings.

The machined surfaces of castings shall be thoroughly cleaned and any abrasions of the pitch covering made good immediately before erecting the segments in the tunnel.

Thrust from shield.

30 In driving shields no pressure shall be brought on the flanges of the castings.

Cast iron segments which are broken while being put in place are to be immediately removed and new segments substituted. Segments broken or cracked after erection shall be removed only when directed by the Engineer. Such broken segments when left in place must be reinforced as directed and to the satisfaction of the Engineer.

40 Calking joints of lining.

The calking recesses between the flanges of the cast iron linings shall be thoroughly cleaned with a sand blush, and then calked with a cement consisting of iron borings and sal-ammoniac, mixed in proportions of 400 of the former to one of the latter, by weight. The joints shall be made absolutely watertight.

EXHIBIT C-17 (*Continued*):

Bolts, washers and grummets.

- 10 Bolts and nuts for the joints of the cast iron lining shall be of soft steel, forged from the solid, without welding, and the bolts shall project at least  $\frac{1}{8}$  inch outside the nut when screwed up in place in the tunnel. Heads and shanks must be correctly formed, smooth and free from fins. Heads must be square with the bolts. Screw threads shall be U. S. Standard and rolled or pressed to full threads. Bolts shall be capable of bending 180 degrees flat on themselves without crack or flaw. Each bolt shall have a cross fitting wrought iron washer under the head and nut; grummets shall be used only when directed by the engineer. When the bolts are firmly screwed up the bolt haies must be absolutely water-tight.

Cleaning, cast iron linings.

- 20 Immediately before placing concrete the exposed faces of the cast iron tunnel lining shall be cleaned from mud and dirt.

Galvanizing painting.

133. Exposed wrought iron shall be thoroughly and uniformly galvanized.

Price to cover.

- 30 134. The cost of all wrought iron and the requirements specified in connection therewith shall be covered by the contract price for the structure in connection with which it is used.

IRON CASTINGS.

Quality.

- 40 136. Iron castings shall be of the best foundry pig iron, gray, tough and free from cold shuts, blow holes and other imperfections. The weight shall be conspicuously painted by the manufacturer with white oil paint on each casting. The castings shall be sound, clean and neatly finished. Where required, castings shall be thoroughly coated with coal tar pitch varnish.

Cost covered.

137. The cost of all labor and materials required to furnish coat and place the castings as specified, shall be covered by the contract price for the structure or class of work in connection with which they are used.

EXHIBIT C-17 (*Continued*):

TIMBER.

Quality.

138. All timber shall be merchantable pine or spruce, unless otherwise specified, and shall be sound and free from shakes, cracks, large or loose knots, and other defects impairing its strength or durability. It shall be squared to the required dimensions throughout its entire length.

Placing.

139. Timber shall be placed where shown on the plan or directed, and where necessary shall be firmly spiked or bolted with approved nails, spikes or bolts of such sizes and lengths, and at such places and in such numbers as shown on the plan or as directed.

Measurement.

20 140. The amount of timber to be paid for as such will be all timber placed in the work in accordance with the plan or directions, except piles and timber sheeting, and except such timber shown on the plan as being part of structures for which there are contract prices, and the cost of which is hereinafter specified to be covered by the contract prices for such structures. The amount paid for will not include timber used for forms, templets, centres, scaffolds, bridges (unless otherwise specified), fences, guard rails or other temporary structures, the cost of all of which shall be covered by all the contract prices for all the items for which there are contract prices. No deduction will be made in the measurement of timber flooring on account of the spaces occupied by the piles.

Price to cover.

141. The contract price for timber shall cover the cost of all labor and materials required to furnish, work, place and secure the same as specified.

40 TIMBER SHEETING.

Quality, placing, etc.

142. Timber sheeting and the rangers and braces for the same shall be of a satisfactory quality of timber and of sufficient size and strength to adequately support the sides of the trenches and excavations. Sheeting shall be driven in such a manner as



EXHIBIT C-17 (*Continued*):

to avoid cracking and splitting, and if required for the proper prosecution of the work, shall be tongued and grooved.

When paid for.

10 143. Timber sheeting will be paid for as such only when left in place by written order. When sheeting is left in, so much of it below the surface of the ground as may be directed shall be cut off.

Measurement.

20 144. The amount of timber sheeting to be paid for as such will be all timber sheeting, rangers and braces left in place by written order, and will not include sheeting, dangers and braces left in place without such order, not sheeting left in place because concrete is placed against it, nor that part of the sheeting that extended above the ground after having been driven, the cost of all of which shall be covered by all the contract prices for all the items for which there are contract prices. Inclined piling or planking at the bottom of a trench, if used to prevent the caving in of the excavation and in such a position that it cannot be drawn, shall be paid for at the price bid for sheet piling.

Price to cover.

30 145. The contract price for timber sheeting shall cover the cost of all labor and materials required to furnish, place and cut off the sheeting, rangers and braces as specified, and shall also cover the cost of all excavation necessary to place the same.

PILES.

Quality.

40 146. Piles shall be of white oak, spruce or yellow pine, sound and free from splits, shakes and other imperfections impairing their strength or durability. They shall be straight, taper uniformly from butt to point and if required shall be barked. Unless otherwise shown on the plan, they shall conform to the following dimensions:

EXHIBIT C-17 (Continued):

Dimensions.

	Length Below Cutoff	Minimum Diameter at Point	Minimum Diameter at Cutoff
	Less than 20 feet .....	6 inches	10 inches
	20 feet to 25 feet .....	6 inches	11 inches
10	26 feet to 35 feet .....	6 inches	12 inches
	36 feet to 45 feet .....	6 inches	13 inches
	46 feet and over .....	6 inches	14 inches

147. To determine the necessary length of piles to be used in the work, the Contractor may be required to drive test piles.

148. Each pile less than 60 feet long shall be in one piece; piles longer than 60 feet may be spliced in an approved manner. The small ends of piles shall be pointed, and, if required, shall be shod with approved iron shoes. The butt ends of piles shall be cut off square and protected with approved iron bands while driving.

How driven.

149. Piles shall be driven without the use of a follower, unless specially permitted. Pile heads that become split or broomed shall be cut off and the driving continued. Any pile which splits, breaks or drives unsatisfactorily will not be paid for, and it shall be withdrawn or abandoned and another driven in place of it. After being driven piles shall be accurately cut off at the required elevation.

Bearing pile.

150. Bearing piles shall be driven vertically and shall be spaced as shown on the plan or as directed. They shall be driven to a satisfactory refusal by a hammer having a concave face and weighing not less than 2,000 pounds nor more than 2,500 pounds. Refusal in general will be indicated by a penetration not exceeding 1 inch per blow under the last 6 blows of the hammer falling 15 feet. If steam hammer pile drivers are used, the piles shall be driven so that their bearing power shall be not less than that of piles driven as herein specified. When it is shown on the plan or specified that piles are to be driven to a certain required depth, they shall be driven if necessary, by the use of a water jet or by any other approved method.

EXHIBIT C-17 (*Continued*):

Brace piles.

151. Where shown on the plan, brace, batter or spur piles shall be driven at the inclination shown or directed, to a satisfactory refusal, and the tops shall be framed, bolted or strapped to adjoining piles or to each other as shown on the plan, or directed.

10 Measurement.

152. The amount of piles to be paid for will be the total length below cutoff of all piles remaining in the work in accordance with the plan or directions, and the total length of all piles used only as test piles. Piles driven for temporary use will not be paid for.

Price to cover.

20 153. The contract price for piles shall cover the cost of all labor and materials required to furnish, drive and cut off the same as specified, of fastening brace piles, and of furnishing and placing all shoes, bands, bars, straps, bolts and other fastenings required.

CONCRETE SEWERS.

Inverts.

Brick lining.

30 154. Inverts of concrete sewers shall be formed between transverse templets and shall be screeded. The templets shall be placed at such intervals as to divide the invert into sections of suitable size for convenient construction, and unless otherwise permitted, the concrete shall be deposited in alternate sections and allowed to set before the remaining sections are built. Unless otherwise shown on the plan, a layer of mortar not less than  $\frac{1}{2}$ -inch thick shall be spread evenly and to a smoothly finished surface upon the concrete of the invert as soon as such concrete is in place. Where the radii of inverts are too short to permit  
40 screeding between templets, the inverts shall be shaped by means of suitable forms, which shall be removed as soon as the concrete has a sufficient set, and if required, the surfaces of inverts shall be floated or troweled to a smooth finish. The concrete for inverts shall be deposited continuously for their entire cross sections and for such longitudinal distances as may be convenient. Inverts shall be carefully protected from all injury during progress of the work.

EXHIBIT C-17 (*Continued*):

154a. Reinforced cement concrete pipe used shall be circular in section with or without flat base and shall conform in dimensions as shown in table.

Side walls.

10 155. Concrete in the side walls of sewers shall be deposited continuously to the height directed and for such longitudinal distances as may be convenient.

Roof.

20 156. Concrete in the roofs of sewers shall be deposited continuously for the full depths and widths of the roofs and for such longitudinal distances as may be convenient. The outer surfaces of roofs shall be finished with an excess of mortar and left true and smooth. They shall be covered and protected as specified in paragraph 78, and such covering shall remain thereon until the backfilling or embankment is placed.

Bulkheads.

30 157. While being deposited the concrete for sewers shall be confined by temporary, vertical bulkheads placed at such intervals longitudinally as may be required for convenient working. The bulkheads shall be so designed as to give an approved shape to the end of the section of concrete under construction, shall be satisfactorily secured in place before the concrete is deposited, and shall remain in place until the concrete has set sufficiently to hold its shape.

Reinforcement.

158. Where shown on the plan concrete sewers shall be reinforced with metal of the dimensions and shapes shown, and of the quality and in the manner hereinbefore specified.

Minimum length of invert.

40 159. Unless otherwise permitted or ordered, not less than 16 feet of foundation or invert for concrete sewer shall be built at one operation.

Connections.

160. Connections and branches for lateral sewers and receiving basins shall be built in where shown on the plan or where directed. Such connections and branches shall be closed with

EXHIBIT C-17 (*Continued*):

bulkheads of brick masonry 8 inches thick unless otherwise shown on the plan. All necessary openings and bulkheads for branch sewers shall be built in concrete sewers where shown on the plan or where directed.

Measurements.

- 10        161. The lengths of concrete sewers will be determined by horizontal measurements, along their centre lines. No deductions will be made on account of openings at branches and man-holes. The measurement of a branch concrete sewer will be made from the inner surface of the wall of the main sewer through which it enters. A reducer will be paid for at the contract price for the sewer at the larger end thereof.

Prices to cover.

- 20        162. The contract prices for concrete sewers shall cover the cost of all necessary excavation (except rock); of furnishing, maintaining and removing all forms, centres, templets and temporary bulkheads; of all openings and bulkheads; of all back-filling; and of all labor and materials required to construct concrete sewers as shown by the normal sections on the plan and as specified.

VITRIFIED PIPE SEWERS.

Vitrified pipe.

- 30        168. Vitrified pipe sewers shall be built of shale or clay hub and spigot pipes with deep and wide sockets. They shall be thoroughly and perfectly burned, without warps, cracks or other imperfections, and shall be fully and smoothly salt-glazed over the entire inner and outer surfaces, except that the inside of the hub and the outside of the spigot may be unglazed for two-thirds the depth of the hub. On all other portions of the pipe the glazing shall completely cover and form an integral part of the pipe body. If not left unglazed the inside of the hub and the outside of the spigot shall be scored in 3 parallel lines extending completely  
40        around the circumference. When it is broken, vitrified pipe shall show dense and solid material, without serious cracks or laminations; it shall be of such toughness that it can be worked with a chisel and hammer, and when struck with a hammer, it shall have a metallic ring.

EXHIBIT C-17 (Continued):

Identification marks.

169. Each pipe shall have clearly impressed on its outer surface the name of the manufacturer and of the factory in which it was made.

Shape and dimensions.

10            170. The sizes of the pipes are designated by their interior diameters. Each pipe shall be a cylinder with a circular section, and shall have a uniform thickness. The minimum lengths, thicknesses, depths of hubs and annular spaces for the respective sizes of pipe shall be as follows:

	Size	Length	Thickness	Depth of Socket	Annular Space
	6.....	2 feet	5/8 inch	2 1/2 inches	5/8 inch
20	8.....	3 "	3/4 "	2 3/4 "	5/8 "
	10.....	3 "	7/8 "	2 3/4 "	5/8 "
	12.....	3 "	1 "	3 "	5/8 "
	15.....	3 "	1 1/4 "	3 "	5/8 "
	18.....	3 "	1 1/2 "	3 1/4 "	5/8 "
	20.....	3 "	1 2/3 "	3 1/2 "	5/8 "
	22.....	3 "	1 5/6 "	3 3/4 "	5/8 "
	24.....	3 "	2 inches	4 "	5/8 "
	27.....	2 1/2 "	2 1/4 "	4 "	3/4 "
	30.....	2 1/2 "	2 1/2 "	4 "	3/4 "
30	33.....	2 1/2 "	2 5/8 "	5 "	1 1/4 "
	36.....	2 1/2 "	2 3/4 "	5 "	1 1/4 "
	42.....	2 1/2 "	3 1/2 "	5 "	1 1/4 "

Curves, bends, etc.

171. Where curved pipes are required they shall be furnished in either one-eighth or one-quarter bends of their respective sizes. Curved pipe, bends, siphons, and special pipe of the sizes and forms shown on the plan shall be furnished and laid, and unless otherwise provided they will be paid for at the contract prices for the corresponding sizes of vitrified pipe sewers.

Samples for testing.

172. Any or all of the following tests may be applied to samples selected from the pipe delivered on the work. For the purposes of making such tests as may be required the Contractor

EXHIBIT C-17 (Continued):

shall furnish and deliver when and where directed one length of pipe for each 200 feet of pipe sewer to be laid.

Crushing tests.

10 173. When supported at the bottom upon a knife edge one inch in width in such manner that an even bearing is provided throughout the whole length, exclusive of the bell, and pressure is applied at the crown uniformly through a similar knife edge, the various sizes of pipe shall withstand the following pressures:

	Diameter	Pressure
	6 inches .....	900 lbs. per lin. ft.
	8 " .....	900 " " " "
	10 " .....	1,000 " " " "
	12 " .....	1,050 " " " "
	15 " .....	1,250 " " " "
20	18 " .....	1,400 " " " "
	20 " .....	1,550 " " " "
	22 " .....	1,750 " " " "
	24 " .....	1,950 " " " "
	27 " .....	2,150 " " " "
	30 " .....	2,350 " " " "
	33 " .....	2,500 " " " "
	36 " .....	2,800 " " " "
	42 " .....	3,200 " " " "

30 Drop weight test.

174. When supported on a dry sand bed 2 inches deep, all pipe shall withstand without cracking the impact from 2 blows of a cast iron ball weighing 8 pounds falling 18 inches. Spurs shall resist without fracture the impact from 2 blows of such a ball falling 6 inches and striking on the extreme end of the hub of the spur.

Hydrostatic test.

40 175. When subjected to an internal hydrostatic pressure of 8 pounds per square inch, vitrified pipe shall show no percolation.

Absorption test.

176. After having been thoroughly dried and then immersed in water for 24 hours, sample pieces of pipe with all broken

EXHIBIT C-17 (Continued):

edges shall not absorb more than 4 per cent. of their weight of water.

Factory rejection.

10 177. The entire product of any pipe factory may be rejected when, in the judgment of the Engineer, the methods of manufacture fail to guarantee uniform results, or where the materials used are such as produce inferior pipe, as indicated by repeated failure to comply with the tests herein specified.

Without cradle.

20 179. When the sewer is to be laid without a cradle the trench shall be excavated as specified in paragraph 18 and the earth forming the bed carefully freed of stones. The pipe shall then be evenly bedded therein and the backfilling placed and firmly tamped in such a manner as to avoid disturbing the sewer.

How laid.

30 182. All pipes shall be laid with ends abutting and true to line and grade. The pipes shall be fitted together and matched so that when laid in the work they will form a sewer with a smooth and uniform invert. Unless otherwise permitted or directed, not less than 12 feet of pipe sewer shall be laid in one operation.

183. Unless otherwise shown on the plan, the joints of vitrified pipe sewers shall be made as hereinafter specified in paragraph 185.

Gasket and mortar joints.

40 185. Gasket and mortar joints shall be made in the following manner: A closely twisted hemp or oakum gasket of suitable diameter, in no case less than  $\frac{3}{4}$ -inch, and in one piece of sufficient length to pass around the pipe and lap at the top, shall be solidly rammed into the annular space between the pipes with a suitable calking tool. Before being placed, the gasket shall, if desired, be saturated with neat cement grout. The remainder of the space shall then be completely filled with plastic mortar mixed 1 to  $1\frac{1}{2}$ , and the joint wiped inside and finished to a smooth bevel outside.



EXHIBIT C-17 (*Continued*):

Inspection of joints.

186. Unless otherwise permitted, at least 4 finished joints shall be left exposed for inspection throughout the working day, and the necessary staging for the protection of the exposed sewers and for the handling of excavated material shall be provided. A suitable ladder affording easy access for such inspection shall be furnished at every trench open for the proposed sewer.
- 10

Subgrade to be tested.

187. No pipe shall be laid or placed until the subgrade of the trench shall have been tested and found correct.

Sewer to be kept clean.

188. The interior of the sewer shall, as the work progresses, be cleared of all dirt, cement and superfluous materials of every description.
- 20

Backfilling.

189. Immediately after the sewer is laid the trench shall be backfilled as provided in paragraphs 30 to 38 inclusive and 186. No walking on or working upon the completed sewer (except as may be necessary in tamping the backfilling) will be permitted until the trench has been backfilled to a height of at least 2 feet over the top of the sewer.
- 30

Temporary covers.

190. The exposed ends of pipe sewers shall be provided with approved temporary covers fitted to the pipe so as to exclude earth and other materials.

40 Branch pipes.

191. Branch pipes and connection pipes shall be of the same quality and dimensions, and laid in the same manner as specified for vitrified pipe sewers. Dead ends of pipes shall be closed with bulkheads of brick masonry 8 inches in thickness.

EXHIBIT C-17 (*Continued*):

Connection with existing work.

192. Wherever the proposed sewer is to connect with an existing manhole in which there is a branch pipe which is damaged or of unsuitable size or in improper position, such pipe shall be removed and be replaced with a pipe of suitable size or be reset in the proper position. The pipe so substituted or reset will be  
10 paid for at the contract price, for the corresponding size of pipe sewer.

Pipes cut to fit masonry.

193. The ends of pipes which enter masonry shall be neatly cut to fit the face of the masonry. When directed, such cutting shall be done before the pipes are built in.

20 Measurement.

194. The length of pipe sewers to be paid for will be determined by horizontal measurements along their center lines, and no deductions will be made on account of openings at manholes.

Prices to cover.

195. The contract prices for vitrified pipe sewers shall cover the cost of all necessary excavation (except rock); of all necessary trimmings, fitting and building into masonry; of all  
30 bulkheads; of all backfilling; of all samples furnished; and of all labor materials required to furnish and lay the sewers complete in place, as shown on the plan and as specified.

CAST IRON PIPE SEWERS.

Cast iron pipe.

196. Cast iron pipe for sewers shall conform with the requirements of the latest revised Standard Specifications for Cast  
40 Iron Pipe adopted by the American Society for Testing Materials, and all tests required shall be made in accordance therewith.

197. The thickness of shall and weight of the several classes of pipe, and the allowable variations of diameter and weight shall be as follows:

**EXHIBIT C-17 (Continued) :**

Nominal Inside Diam. Ins.	Class A 100 Ft. Head 43 Lbs. Pressure		Class B 200 Ft. Head 80 Lbs. Pressure		Class C 300 Ft. Head 130 Lbs. Pressure		Allowable Variations		
	Thick-ness Ins.	Weight	Thick-ness Ins.	Weight	Thick-ness Ins.	Weight	Diameter	Weight	
4...	0.40	240	0.45	260	0.48	280	0.06 in.	5 per cent.	
6...	0.44	370	0.48	400	0.51	430	0.06 "	5 " "	
10	8...	0.46	515	0.51	570	0.56	625	0.06 "	5 " "
	10...	0.50	685	0.57	765	0.62	850	0.06 "	5 " "
	12...	0.54	870	0.62	985	0.68	1,100	0.06 "	5 " "
	14...	0.57	1,075	0.66	1,230	0.74	1,400	0.06 "	5 " "
	16...	0.60	1,300	0.70	1,500	0.80	1,725	0.06 "	5 " "
	18...	0.64	1,550	0.75	1,800	0.87	2,100	0.08 "	4 " "
	20...	0.67	1,800	0.80	2,100	0.92	2,500	0.08 "	4 " "
	24...	0.76	2,450	0.89	2,800	1.04	3,350	0.08 "	4 " "
	30...	0.88	3,500	1.03	4,000	1.20	4,800	0.10 "	4 " "
	36...	0.99	4,700	1.15	5,450	1.36	6,550	0.10 "	4 " "
20	42...	1.10	6,150	1.28	7,100	1.54	8,600	0.10 "	4 " "
	48...	1.26	8,000	1.42	9,000	1.71	10,900	0.12 "	4 " "
	54...	1.35	9,600	1.55	11,200	1.90	13,700	0.15 "	4 " "
	60...	1.39	11,000	1.67	13,250	2.00	16,100	0.15 "	4 " "

The above weights are for 12 feet laying lengths and standard sockets; proportionate allowance will be made for any variation therefrom.

**Variation in thickness.**

30      198. For pipes whose standard thickness is less than 1 inch, the thickness of metal in the body of the pipe shall not be more than 0.08 inch less than the standard thickness; and for pipes whose standard thickness is 1 inch or more, the variation shall not exceed 0.10 inch, except that for areas not exceeding 8 inches in any direction, variations from the standard thickness of 0.02 inch in excess of the allowance above given will be permitted.

**Coating.**

40      199. All cast iron pipe shall be thoroughly and evenly coated inside and outside with coal tar pitch varnish. The coating shall be smooth, tough and tenacious when cold and shall not be brittle or have any tendency to scale off.

EXHIBIT C-17 (*Continued*):

Marking.

200. The weight and class letter shall be conspicuously painted by the manufacturer with white oil paint on the inside of each pipe after the coating is hard.

10 201. Joints of cast iron pipe sewers shall be of the kinds shown on the plan.

Lead joints.

202. When lead joints are required, the inner portion of the annular space between the pipes shall be packed with clean, sound jute packing yarn, and the remaining portion shall be run full of pure soft lead and calked with suitable tools. Unless otherwise shown on the plan the depths of the lead joints shall be  $2\frac{1}{2}$  inches for 6-inch to 8-inch pipe, 3 inches for 12-inch to 24-inch pipe and  $3\frac{1}{2}$  inches for 30-inch to 48-inch pipe.

20 Mortar joints.

203. When gasket and mortar joints or plain mortar joints are required they shall be made as specified in paragraphs 184 and 185.

204. All the requirements, as hereinbefore specified, relating to excavation, laying, backfillings and measurement of vitrified pipe sewers shall apply, as far as they are applicable, to cast iron pipe sewers.

30 Prices to cover.

205. The contract prices for cast iron pipe sewers shall cover the cost of all necessary excavation (except rock); of all bulkheads of all backfilling; and of all labor and materials required to furnish and lay by the sewers complete in place, as shown on the plan and as specified.

BASIN CONNECTIONS.

40 206. The connections between receiving basins or inlet basins and sewers or manholes shall be of 12-inch vitrified pipe, unless otherwise shown on the plan. The pipes shall be of the same quality and dimensions, and laid in the same manner as hereinbefore specified for vitrified pipe sewers.

EXHIBIT C-17 (*Continued*):

Measurement.

207. The lengths of basin connections to be paid for will be determined by measurements along their axes.

Prices to cover.

10 208. The contract price for basin connections shall cover the cost of all necessary excavation (except rock); of all necessary trimming, fitting and building into concrete, or masonry; of all backfilling; and of all labor and materials required to furnish and lay the basin connections complete in place as specified.

VITRIFIED PIPE DRAINS.

209. Vitrified pipe drains shall be built of vitrified pipe of the same quality and dimensions and laid in the same manner as hereinbefore specified for vitrified pipe sewers.

Old drains restored or extended.

210. Any existing drain disturbed or removed on account of the work under this contract shall, if required, be restored or connected with the new work as directed. Where necessary, any drains affected by this contract shall be extended as directed. The portions of such drains restored or the extensions thereof will be paid for at the contract prices for vitrified pipe drains.

30 Measurement.

211. The lengths of vitrified pipe drains to be paid for will be determined by measurements along their axes.

Prices to cover.

40 212. The contract prices for vitrified pipe drains shall cover the cost of all necessary excavations (except rock); of all necessary trimming, fitting and building into concrete or masonry; of all backfilling; and of all labor and materials required to furnish and lay the drains complete in place, as specified.

SPURS FOR HOUSE CONNECTIONS.

213. Spurs for house connections shall be of vitrified pipe 6 inches in diameter, equal in quality and dimensions to that specified for vitrified pipe sewers.

EXHIBIT C-17 (*Continued*):

In concrete sewers.

214. In concrete sewers spurs shall be built in as shown on the plan or as directed. They shall be hub and spigot pipes with the spigot end molded or cut to fit flush with the inner surface of the sewer, and of sufficient length to reach the exterior of the sewer.

10 In pipe sewers.

215. Pipes having 6-inch spurs with hubs molded thereon shall be furnished and laid in pipe sewers where shown on the plan or directed. Such pipes will be paid for at the contract prices for vitrified pipe sewers, and the spurs will be paid for in addition at the contract price for spurs.

Covers.

20 216. The ends of all spurs not connected with drains shall be closed with approved covers. If required such covers shall be cemented in place, and when directed the covers shall be so cemented before the pipes are lowered into the trench.

Price to cover.

217. The contract price for spurs shall cover the cost of all labor and materials required to furnish and place the same as specified, and the cost of furnishing and cementing the covers for the same.

30

**DRAINS FOR HOUSE CONNECTIONS.**

218. Where shown on the plan or where directed, drains for house connections shall be built from the spurs in such a manner and for such distance as may be shown or directed.

Depth at curb.

40 219. House connections drains shall be laid with a minimum gradient of  $\frac{1}{4}$  inch to a foot, and wherever possible the depth from curb grade to the inner bottom of the drain at curb line shall be at least 8 feet.

Material.

220. Unless otherwise shown on the plan, drains for house connections shall be of vitrified pipe of the quality and dimen-

EXHIBIT C-17 (*Continued*):

sions specified for vitrified pipe sewers. The ends of the drains shall be closed with approved covers.

How laid.

10        221. All the requirements, as hereinbefore specified, relating to excavation, laying and backfilling of vitrified pipe sewers shall apply, as far as they are applicable, to drains for house connections.

Measurement.

222. The lengths of pipe drains for house connections to be paid for will be determined by measurement along their axes.

Price to cover.

20        223. The contract price for drains for house connections shall cover the cost of all necessary excavation (except rock); the cost of all backfilling; the cost of all covers, bends and specials required; and the cost of all labor and materials required to furnish and lay the drains for house connections complete in place, as specified.

RISERS.

30        224. Where shown on the plan or where directed risers for house connections shall be built from the spurs in such a manner and to such height as may be shown or directed. Unless otherwise shown on the plan they shall be of vitrified pipe of the quality and dimensions hereinbefore specified for vitrified pipe sewers. They shall be supported and surrounded by concrete as shown, and each shall be closed with an approved cover.

Measurement.

225. The lengths of risers to be paid for will be determined by measurements along their axes.

40        Price to cover.

226. The contract price for risers shall cover the cost of all necessary excavation (except rock); the cost of all concrete used in connection with the risers; the cost of all backfilling; the cost of all covers, bends and specials required; and the cost of all labor and materials required to construct the risers complete in place, as specified.

EXHIBIT C-17 (*Continued*):

MANHOLES.

10        227. The masonry or concrete for manholes shall be built to within 13 inches of the established grade of the street or to within such distances of the existing surface of the ground as directed. When not built up to within 13 inches of the established grade of the street, the masonry or concrete shall, if directed, be covered with bluestones not less than 5 inches thick, or with an approved reinforced concrete slab to support the head.

Brick manholes.

228. Brick manholes shall be formed by means of templets placed at top and bottom with not less than 8 lines drawn between them, and they shall be smoothly and evenly plastered on the outside with a layer of mortar  $\frac{1}{2}$  inch thick.

20        Concrete manholes.

229. Concrete manholes shall be built of the materials, sizes and dimensions shown on the plan.

Steps.

230. Galvanized wrought iron steps of the size and shape shown on the plan shall be firmly built into the manholes at vertical intervals of about 16 inches.

Head and cover.

30        231. The manhole head and cover shall be of cast iron, and unless otherwise shown on the plan, each head, exclusive of cover, shall weigh not less than 475 pounds and each cover shall weigh not less than 135 pounds. The weight of each head and cover shall be conspicuously painted thereon by the manufacturer with white oil paint. The head shall be set on the masonry or concrete in a full bed of stiff mortar.

Price to cover.

40        233. The contract price for manholes shall cover the cost of all necessary excavation (except rock); of all backfilling; of all plastering; of all bluestones; of all concrete slabs; of all steps, when required; and of all labor and materials required to construct the same complete, in place, as shown on the plan and specified.



EXHIBIT C-17 (*Continued*):

BASIN MANHOLES

Brick basin manholes.

234. Brick basin manholes shall be formed by means of templets placed at top and bottom with not less than 10 vertical lines drawn between them.

10 235. Where the walls of brick basin manholes are not built of two rings of brickwork with a mortar layer between, the inside of the brickwork shall be smoothly and even plastered with a layer of 1 : 2 Portland cement mortar  $\frac{1}{2}$  inch thick.

20 236. Where the wall of the basin manhole consists of two rings of brickwork, with a mortar layer between, the outer ring shall be carried up not less than 1 foot in advance of the inner ring, and the inner surface of the former shall be plastered with two coats of mortar. The second coat of mortar shall be applied before the first is set, and the total thickness of the mortar layer shall be 1 inch.

Concrete basin manholes.

237. Concrete basin manholes shall, if required, be built in such a manner that the bottom and sidewalks shall be formed in one continuous operation. Concrete basins shall be coated with a grout of neat cement on the inside.

30 Concrete cover slabs.

238. Concrete cover slabs of basin manholes shall be built of Class "A" concrete, reinforced as shown on plan.

Head cover and trap.

40 239. The basin manhole head and cover shall be of cast iron, as shown on plan, and known as a Standard Sidewalk Manhole Head and Cover. Each head exclusive of cover shall weigh not less than 260 pounds and each cover shall weigh not less than 100 pounds. An iron hood or trap, of the size and dimensions shown on the plan, must be furnished by the Contractor for each basin manhole and is to be built into the basin manhole, as shown on plan.

Restoration of sidewalks, curbs, etc.

240. All sidewalk pavements and curbs, disturbed by the construction of basin manholes, shall be restored by the Con-

EXHIBIT C-17 (*Continued*):

tractor in accordance with the specifications for similar work of the Bureau of Highways.

Price to cover.

- 10        241. The contract price for basin manholes shall cover the cost of all necessary excavation (except rock); of all backfilling; of all sidewalk and curb restorations and of all labor and materials required to construct the basin manholes complete in place, as shown on the plan and specified.

INLETS.

242. Inlets and the heads therefor shall be of the materials, forms and dimensions shown on the plan. The specifications for brickwork and concrete shall be those hereinbefore specified for basin manholes.

20    Heads.

243. The head shall be of cast iron and shall conform in all respects to the specifications for iron castings. If required, the inlets shall be closed with bulkheads of brick masonry and such bulkheads shall be removed when directed.

Restoration of roadway pavements, etc.

- 30        244. All roadway pavements, sidewalk pavements and curbs, disturbed by the construction of inlets, except those under guarantee for maintenance shall be restored by the Contractor in accordance with the specifications of the Bureau of Highways for similar work or specifications hereafter attached. In unpaved streets and macadamized streets where the inlets are approximately at the surface of the street a space of two and one-half ( $2\frac{1}{2}$ ) feet adjoining such inlets shall, if required, be paved with approved paving blocks.

Price to cover.

- 40        245. The contract price for inlets shall cover the cost of all necessary excavation (except rock); of all backfilling; of the temporary brick bulkheads in the mouths of the inlets, when required; of all roadway, sidewalk and curb restorations; of all labor and materials required to construct the inlets, complete in place, as shown on the plan and specified.

EXHIBIT C-17 (Continued):

EMBANKMENT.

Quality.

247. Where indicated on the plan, embankment shall be made of the form and dimensions shown. It shall consist of clean steam ashes or filling of the quality specified in paragraph 31, which shall contain no stone over 6 inches in its largest dimension. When the material forming the embankment contains stones, the latter shall be so distributed through the mass that all interstices are filled with fine material, and the material within 2 feet shall be free of stones. When embankment is used as foundation it shall consist entirely of filling of the quantity specified in paragraph 30.

How made.

248. The embankment shall be deposited and spread in horizontal layers to such an extent and at such times as may be directed. If required, such portion of the embankment as may be deemed necessary shall be made prior to the construction of the sewer or its foundation and any excavation that may be necessary for the building of the sewer and its foundation shall be made therein. When embankment is used as a foundation, the ground on which it is to be made shall be prepared by grubbing and clearing, and removing all improper material. Embankment used as foundation shall be deposited in uniform horizontal layers not exceeding 1 foot in depth, and each layer shall be thoroughly compacted by rolling or tamping or both; such embankment shall not be built upon until the expiration of 15 days after its completion.

Approaches.

249. Where the embankment obstructs or interferes in any way with any public or private roadway the Contractor shall furnish and place all material necessary to provide suitable approaches, of such widths and to such extent as shown on the plan or as directed.

250. All embankments and approaches shall be maintained at their full dimensions until the completion of this contract.

Cost covered.

251. The cost of all labor and materials required to prepare the ground, to make the embankment and approaches as specified, to make all necessary excavations and backfilling

EXHIBIT C-17 (*Continued*):

therein, and to maintain the embankments and approaches at their designated dimensions until the completion of this contract, shall be covered by the contract price for displaced material from the sewers for the construction of sewer embankment.

RESTORATION OF SURFACE AND CLEANING UP.

10 Restoration of unpaved roadways, sidewalks, etc.

254. At such time as may be directed, all unpaved roadways, gutters and sidewalks affected by the work done under this contract shall be restored by the Contractor to the same condition in which they were at the time of the opening of bids for this contract.

Pavements, etc., restored by Contractor.

20 256. If required by the plan, roadway and sidewalk pavements, crosswalks, curbs, etc., shall be satisfactorily restored and adjusted by the Contractor at such times as may be directed. Sidewalk pavements shall be restored in whole flags, squares or sections which shall correspond in quality and appearance with the original or adjoining flags, squares or sections. All work and materials used in such restoration and adjustment shall conform in all respects to the standard specifications now in use by the President for similar work and materials.

Pavements, etc., under guarantee.

30 257. All pavements, sidewalks, crosswalks, curbs, etc., existing at the time of the opening of the bids for this contract, and under guarantee for maintenance, shall be restored and adjusted by the parties responsible under such guarantee, and at the expense of the Contractor. If not so restored and adjusted during the progress of the work, the Contractor shall, when directed, pay to the President, before the completion of the contract, a sum of money sufficient to cover the cost of having the same restored and adjusted by the parties responsible under such  
40 guarantee, and at the charges for the restoration of the same, as set forth in their contracts relating thereto. Such sum shall be accompanied by certificates from the parties responsible for the maintenance of the pavements, sidewalks, crosswalks, curbs, etc., to the effect that such sum will be accepted by them as full payment for such restoration and adjustment.

EXHIBIT C-17 (*Continued*):

Temporary restoration.

258. At such times as may be directed roadway and sidewalk pavements, crosswalks, curbs, etc., which have been removed, whether under guarantee or not, shall be temporarily restored by the Contractor to the satisfaction of the Engineer.

When new pavement is laid.

- 10        260. If pavement, sidewalks, crosswalks, curbs, etc., are laid where none existed at the time the bids for this contract were opened, the Contractor shall excavate and remove such portions of the pavements, sidewalks, crosswalks, curbs, etc., and their foundations as may be necessary for the prosecution of the work, but he will not be required to make a permanent restoration of them.

Trenches flooded.

- 20        261. Before laying any pavements, sidewalks, crosswalks, curbs, etc., the trenches shall, if required, be flooded with water, as directed, and all resulting holes or depressions shall be filled and tamped solid.

Unnecessary cross gutters.

262. All cross gutters rendered unnecessary by the work under this contract shall be removed and the entire street intersection or so much thereof as may be necessary shall be regraded and repaved as herein specified.

- 30        Cleaning up.

263. At such times as may be directed the Contractor shall remove from the streets, all materials which were placed thereon by him as a consequence of performing this work and which are not required by the contract to be left as part of the finished work. The entire work and portions of the streets affected thereby shall be left in a satisfactory condition. The sidewalks and crosswalks shall be swept clean of all material which may have come thereon by reason of the work under this contract, and if required, they shall be sprinkled with water during the  
40        sweeping.

Cost to be covered.

264. The cost of all the labor required to be done and all the materials required to be furnished in the performance of all the work specified in paragraphs 254 to 263 inclusive, shall be covered by all the contract prices for all the items for which there are contract prices.

EXHIBIT C-216 :

EXHIBIT C-216

10 (Contract between The City of New York and Angelo Paino, for the construction of a sewer and appurtenances in Corona Avenue from Alstynne Ave. to Junction Ave. Gerry Avenue from Junction Ave. to Toledo St., Junction Ave. from Corona Ave. to Maurice Ave. the low level sewer in Maurice Ave. from Junction Ave. to Broadway; the high level sewer in Maurice Ave. from Junction Ave. to Toledo St. and from 480 feet east of Broadway to Chicago Ave. and a sewer in Broadway from Maurice Ave. to St. James Pl., with a temporary connection to the existing sewer in Broadway at St. James Place, Second Ward of the Borough of Queens, on June 9, 1920.)

20

ANNEXES TO CONTRACT

THE CITY OF NEW YORK — DEPARTMENT OF FINANCE

Office of the Comptroller

CONTRACT SUMMARY

Contractor: ANGELO PAINO

No. 53907

30 Names of sureties : Aetna Casualty & Surety Co. — New Amsterdam Casualty Co. — The United States Fidelity & Guaranty Co. — Maryland Casualty Co.

Amount of bond: \$165,000.00

40 Date of award: June 1, 1920; Department: President of the Borough of Queens; Date of contract: June 9, 1920; Borough: Queens; Date of expiration: 350 consecutive working days; Date of filing: June 7, 1920; Damages: \$10.00 per day; Date paid in full: 12/19/23.

DESCRIPTION OF WORK

For the construction of a sewer and appurtenances in Corona Avenue from Alstynne Ave. to Junction Ave. Gerry Avenue from Junction Ave. to Toledo St., Junction Ave. from Corona Ave. to Maurice Ave. the low level sewer in Maurice Ave. from Junction Ave. to Broadway; the high level sewer in Maurice Ave. from

EXHIBIT C-216 (*continued*):

Junction Ave. to Toledo St. and from 480 feet east of Broadway to Chicago Ave. and a sewer in Broadway from Maurice Ave. to St. James Pl., with a temporary connection to the existing sewer in Broadway at St. James Place, Second Ward of the Borough of Queens.

	Original estimate : \$592,440.00	
	4,130.32	
10		\$596,570.32

ACCOUNTS TO BE CHARGED

C. F. M. 25

The obligation on this surety bond ceases as to anything occurring after April 17, 1923.

If the conditions of the contract have been complied with, the retained percentage (if any) is due on or after April 17, 1923.

GEORGE W. MORTAR,  
Examiner.

PAYMENTS, AMOUNTS RETAINED AND EARNED

	Date	...% Payments	Amount paid to date	Amount retained to date	Amount earned to date
	12-13-20	36,582.30	36,582.30	6,455.70	43,038.00
30	6-11-21	50,018.25	86,600.55	15,282.45	101,883.00
	7-25-21	26,362.75	112,963.30	19,934.70	132,898.00
	8-30-21	37,225.75	150,189.05	26,503.95	176,693.00
	9-26-21	35,823.25	186,012.30	32,825.70	218,838.00
	10-31-21	64,384.10	250,396.40	44,187.60	294,584.00
	12- 5-21	70,735.30	321,131.70	56,670.30	377,802.00
	1-11-22	50,402.79	371,534.49	65,564.91	437,099.40
	2- 7-22	31,844.81	403,379.30	71,184.58	474,563.88
	11-15-22	23,601.54	426,980.84	75,349.56	502,330.40
	4-12-22	36,843.45	463,824.29	81,851.35	545,675.64
40	5-17-22	23,400.81	487,225.10	85,980.90	573,206.00
	6-24-22	11,808.20	499,033.30	88,064.70	587,098.00
	10-24-22	95,681.28	594,714.58	1,855.74	596,570.32
		1,855.74	596,570.32		596,570.32
			596,570.32		596,570.32

IN FULL

EXHIBIT C-216 (continued) :

The City of New York

ADVICE OF AWARD OF CONTRACT

(This copy to be retained by Bookkeeping Division,  
Department of Finance).

\*Date June 1, 1920.

10 Dep't of President of the Borough of Queens  
Comptroller of The City of New York:

Please take notice that the following described contract  
has this day\* been awarded to Contractor ANGELO PAINO,  
2016 East 14th Street, Brooklyn, N. Y.

	SURETIES	AMT. OF BOND
20	\$41,250 The United States Fidelity & Guaranty Co., 68 Liberty St., N. Y.	\$165,000.00
	\$41,250 Maryland Casualty Company 100 William St., N. Y.	
	\$41,250 Aetna Casualty & Surety Co.	
30	\$41,250 New Amsterdam Casualty Co.	

DETAILS OF PURPOSE OF CONTRACT

40 For the construction of a sewer and appurtenances  
in CORONA AVENUE from Alstyn Ave. to Junction  
Ave.; GERRY AVENUE from Junction Ave. to Toledo St.,  
JUNCTION AVENUE from Corona Ave. to Maurice Ave.,  
the low level sewer in MAURICE AVENUE from Junction  
Ave. to Broadway; the high level sewer in MAURICE  
AVENUE from Junction Ave. to Toledo St., and from 480  
feet east of Broadway to Chicago Ave., and a sewer in  
BROADWAY from Maurice Ave. to St. James Pl., with a  
temporary connection to the existing sewer in BROAD-  
WAY at St. James Place, Second Ward of the Borough of  
Queens.



EXHIBIT C-216 (continued) :

Contract Chargeable to Code No.	Estimated Amount	Contracts Previously Awarded (Including Adjustments)	Open Market Orders Issued To Date (Including Adjustments)	Misc. Vouchers, Payrolls, and Other Charges
CFM 25	\$592,440.00	\$1,545,789.87	\$89,685.23	\$28,092.52

10 Enter full titles of accounts and refer to code numbers by means of line numbers in margin.

Street Improvement Fund.

Payment should properly be made from the fund shown hereon. 6/4/20

.....  
Auditor of account

Yours respectfully,

20 FRANK X. SULLIVAN,  
Acting President, Borough of Queens

\* This will be the date of the entry by which the fund is charged with the estimated amount of the contract both in the department making the award and by the Department of Finance. There must therefore be no delay in forwarding this advice.

City of New York

30 Office of the  
PRESIDENT OF THE BOROUGH OF QUEENS.

Maurice E. Connolly  
President

Joseph Flanagan  
Borough Secretary

Hugh Hall  
Secretary to President

40 Long Island City, June 10, 1920.

Hon. Charles L. Craig,  
Comptroller, City of New York.

Sir :—

I beg to transmit herewith for registration in the Department of Finance, the following contract;—

EXHIBIT C-216 (*continued*):

10           “For construction sewer and appurtenances in CORONA AVENUE from Alstyne Ave. to Junction Ave; GERRY AVENUE from Junction Ave. to Toledo Street; JUNCTION AVENUE from Corona Ave. to Maurice Ave., the low level sewer in MAURICE AVENUE from Junction Ave. to Broadway; the high level sewer in MAURICE AVENUE from Junction Ave. to Toledo St., and from 480 ft. east of Broadway to Chicago Avenue, and a sewer in BROADWAY from Maurice Ave. to St. James Pl., with a temporary connection to the existing sewer in BROADWAY at St. James Place, Second Ward of the Borough of Queens, together with all the work incidental thereto.

Very truly yours,

FRANK X. SULLIVAN,  
Acting President of the Borough of Queens.

20   WPB-PJH   Encl.

City of New York

Office of the

PRESIDENT OF THE BOROUGH OF QUEENS

30   Maurice E. Connolly  
                          President

Joseph Flanagan  
                          Borough Secretary

Hugh Hall  
                          Secretary to President

Long Island City, August 27, 1920.

40   Hon. Charles L. Craig, Comptroller,  
                          City of New York.

Sir :—

Referring to contract, No. 53907;—

“For the construction of a sewer and appurtenances in CORONA AVENUE from Alstyne to Junction Avenue; GERRY AVENUE from Junction Avenue to Toledo

EXHIBIT C-216 (*continued*):

10 Street; JUNCTION AVENUE from Corona Avenue to Maurice Avenue, the low level sewer in MAURICE AVENUE from Junction Avenue to Broadway; the high level sewer in MAURICE AVENUE from Junction Ave. to Toledo St., and from 480 feet east of Broadway to Chicago Ave., and a sewer in BROADWAY from Maurice Ave. to St. James Place, with a temporary connection to the existing sewer in BROADWAY at St. James Place, Second Ward of the Borough of Queens,”

I beg to inform you that the contractor, Angelo Paino, 2016 East 14th Street, Brooklyn, N. Y., has been ordered to commenced the work embraced in said contract on September 7, 1920, or before five days from the receipt of his notice.

Yours very truly,

20 FRANK X. SULLIVAN,  
Acting President of the Borough of Queens.  
WPB-PJH

June 10th, 1921.

HON. MAURICE E. CONNOLLY,  
President of the Borough of Queens.

30 Sir :—

I have examined, approved and herewith transmit 85% CERTIFICATE in the amount of \$50,018.25 on

40 “Contract No. 53907, for sewer and appurtenances in Corona Avenue from Alstyn Ave. to Junction Ave., in Gerry Ave. from Junction Ave. to Toledo St., in Junction Avenue from Corona Ave. to Maurice Ave. the low level sewer in Maurice Ave. from Junction Ave to Broadway, the high level sewer in Maurice Ave. from Junction Ave. to Toledo Street and from 480’ east of Broadway to Chicago Ave and a sewer in Broadway from Maurice Ave. to St. James Place, with a temporary connection to the existing sewer in Broadway, at St. James Place, Second Ward of the Borough of Queens.”

This certificate is made out in the name of Angelo Paino, #2016 East 14th Street, Brooklyn, N. Y., who is the contractor.

EXHIBIT C-216 (*continued*) :

10 This contract has not been modified but a change of line was directed and made on account of the refusal of the Brooklyn Rapid Transit Company to move their tracks on Corona Avenue, where said tracks interfered with the construction of said sewer. This line has been changed to a position as shown on the plan to a line 22'0" north of the south building line of Corona Avenue. A deduction will be made from the final payment on account of the asphalt pavement on Corona Ave., which would have been disturbed if the sewer has been built according to the original plan, but which in this case the contractor will not, now, have to disturb. There will also be an allowance made for a small amount of extra excavation made necessary by the change of line. These quantities are not known at the present time and cannot definitely be fixed until the contract is entirely completed.

20 There has been no delay in the progress of the work. In so far as the requirements of the contract relate to its present development, its terms have been complied with, and I hereby certify that the contractor is entitled to the payment.

I recommend that this certificate be forwarded for payment.

Yours very truly,

(signed) JAMES RICE,  
Engineer in Charge,  
Engineering Construction.

30

ENGINEERING.

June 17, 1921.

Mr. Chandler Withington,  
Chief Engineer.

Sir :—

40

In relation to certificate No. 2 in the sum of \$50,018.25 for the construction of Sewer and Appurtenances in Corona Ave. from Alstyne Ave. to Junction Ave., etc., ANGELO PAINO, Contractor, Contract No. 53907, I report;—

The quantities enumerated in the voucher are correct but I would direct your attention to the change in alignment of the

EXHIBIT C-216 (*continued*):

sewer due to the refusal of the Railroad Company (B.R.T.) to move their tracks on Corona Ave., from Alstynne to Junction Ave., where said tracks interfered with construction.

10 The original location of the 7'-6" by 8'-3" Reinforced concrete sewer, is generally within the paved area, within the trolley tracks, being about 36.17 feet north of the South Building line of Corona Ave. Because of the physical interference of the trolley tracks, the tangent was shifted 14 feet to the south, terminating with a reverse curve about 80 feet in length on the easterly end.

It appears from the correspondence attached to this voucher that a deduction will be made from the final payment on Corona Ave., for the area which would have been disturbed by the original plan but which in this case the contractor will not be required to restore, also a small additional allowance for extra excavation made necessary by the change of line.

20 I coincide in the view of the Borough Authorities that the City is entitled to credit for the area of the asphalt pavement undisturbed by the contractor, the credit to be allowed in the final certificate and that contractor is entitled to a small amount of extra excavation.

In the meantime I recommend that this certificate amounting to \$50,018.25 be paid in full.

30 I further recommend that copies of this report and that of the Engineer in Charge of Engineering Construction, Borough of Queens, be attached to the contract on file in this departement for the purpose of ensuring a proper adjustment at the time when the final estimate is under consideration.

Respectfully,

.....  
Assistant Engineer.

EXHIBIT C-216 (continued):

ENGINEERING.

September 8, 1921.

Mr. Chandler Withington,  
Chief Engineer.

Sir :—

10

In relation to certificate No. 4 in the sum of \$37,225.75, for the construction of sewer in Corona Ave, from Alstynne to Junction Avenue, etc., in the Borough of Queens, ANGELO PAINO, Contractor, Contract No. 53907, I report;—

The following items occur in this certificate:

	Total Quantity Previously cer- tified.	Final Total Quantity.	Item of Work.	Prices	Amount.
20	660	901	Lin. Ft. 7'6" x 8'3" R.C. Sewer (Precast Type B) @ . . . . .	\$125.00	\$112,625.00
	270	326	Lin. Ft. 7'0" x 8'3" R.C. Sewer (Precast Type B) @ . . . . .	\$125.00	40,750.00

30

The expression "Precast type B" in aforesaid description is in error, because the sewer is not precast but is *monolithic* reinforced concrete. By cancelling the expression (Precast Type B) from the two aforesaid lines — the remaining statement will be correct.

This work is proceeding in practical conformity with the contract and the quantities of work enumerated in this certificate are correct.

40

I recommend the payment of this voucher amounting to \$37,225.75.

Respectfully,

.....  
Assistant Engineer.

EXHIBIT C-216 (continued) :

AGREEMENT made this 11th day of January 1922, between THE CITY OF NEW YORK, hereinafter called the Party of the First Part, and ANGELO PAINO, of 32 Court Street, Brooklyn, N. Y., hereinafter called the Party of the Second Part;

10 WHEREAS, under date of June 9, 1920, a contract was entered into between The City of New York and Angelo Paino, designated as #53907;

For the construction of a sewer and appurtenances in  
CORONA AVE. from Alstyn Ave. to Junction Ave.  
GERRY AVE. from Junction Ave. to Toledo St.  
JUNCTION AVE, from Corona Ave. to Maurice Ave., the  
low level sewer in  
MAURICE AVE, from Junction Ave. to Broadway, the  
high level sewer in  
20 MAURICE AVE, from Junction Ave, to Toledo St. and  
from 480'0" E. of Broadway to Chicago St. and a sewer  
in  
BROADWAY from Maurice Ave. to St. James Place, with  
a temporary connection to existing sewer in Broadway  
at St. James Place, Second Ward, and

WHEREAS, among the items on which bids were received, appears 5,000 lineal feet B. M. Timber for Sheeting and Bracing at \$98.00 per thousand feet; and

30 WHEREAS, on account of the conditions it has become necessary to order more of this sheeting left in place, but that the price bid for this item of \$98.00 per thousand feet is considered excessive, and that a price of \$65.00 per thousand feet B. M. is considered a fair and just price for this item; and

WHEREAS, paragraph VIII of the contract, provides :

40 "This contract may be modified and changed from time to time, as may have be previously agreed to in writing, between the parties hereto in a manner not materially affecting the substance thereof or increasing the contract price thereunder, in order to carry out and complete more fully and perfectly the work herein agreed to be done and performed."

1. NOW, THEREFORE, it is agreed that contract #53907, dated June 9, 1920, be and the same is hereby modified

EXHIBIT C-216 (*continued*):

to provide that upon the item "5,000 feet B.M. Timber for Sheeting and Bracing at \$98.00 per thousand feet", the Party of First Part shall pay and the Party of the Second Part agrees to receive the sum of \$65.00 per thousand feet B.M. Timber for Sheeting and Bracing.

2. This agreement shall take effect, and only, when the written consents of the sureties upon said contract #53907 shall be obtained and attached hereto.

IN WITNESS WHEREOF, the parties hereto have executed this agreement the day and year first above written.

BENJAMIN MARIUN,  
Acting President of the Borough of Queens,  
For The City of New York,

PARTY OF THE FIRST PART.

ANGELO PAINO,  
For Angelo Paino,

PARTY OF THE SECOND PART.

The undersigned, Maryland Casualty Company, New Amsterdam Casualty Company, The Aetna Casualty and Surety Company and The United States Fidelity and Guaranty Company, sureties upon the bond mentioned and described in the foregoing agreement, do hereby consent to the execution and delivery thereof by The City of New York to Angelo Paino and hereby agree to be bound by the terms of our said original bond, executed and delivered herein.

Dated, January 5, 1922.

Maryland Casualty Company,

By E. B. McCONNELL,  
Attorney-in-fact

New Amsterdam Casualty Company,

By GEO. W. PESINGER,  
Res. Vice-President.

Attest: WM. L. McGINTY,  
Ass't Secretary.



EXHIBIT C-216 (*continued*) :

The Aetna Casualty & Surety Co.,

By E. B. SOUTHWORTH,  
Res. Vice-President.

LEO R. LOGAN,  
Res. Ass't Secretary.

10 United States Fidelity & Guaranty Co.,

By C. D. MARSAC,  
Attorney-in-fact

Attest: ADOLPHUS A. JACKSON,  
Attorney-in-fact

20 ENGINEERING.

January 19, 1922.

Mr, Chandler Withington,  
Chief Engineer.

Sir:—

30 In relation to Certificate No. 8 in the sum of \$50,402.79,  
for the construction of sewer in Corona Avenue, from Alstyne to  
Junction Ave, etc., in the Borough of Queens, Angelo Paino, Con-  
tractor, Contract #53907, I report;—

The quantities of work enumerated in this certificate are  
correct.

The following item appears in this voucher; —

8960 ft. B.M. Bracing and Sheet Piling as  
per modification @ ..... \$65. .... \$582.40

40 Owing to the great depth of sewer and the nature of the  
material encountered, it was necessary to order the sheeting left  
in place for certain stretches, in order to safeguard buildings  
along the line of the work.

The price (\$98. per M) originally bid by Contractor is re-  
duced to \$65. per M. pursuant to attached modification executed  
January 11, 1922, on the ground that there will be considerable  
more than 5 M feet Board Measure incorporated in the work and  
that the contractor's original bid price, \$98. per M. was excessive.

EXHIBIT C-216 (*continued*) :

In my opinion, the price fixed, viz, \$65. for sheeting and bracing left in place is reasonable.

I therefore recommend that this voucher amounting to \$50,402.79 be paid the contractor.

Respectfully,

10

.....  
Assistant Engineer.

City of New York

Office of

THE PRESIDENT OF THE BOROUGH OF QUEENS

20 Maurice E. Connolly  
President

Joseph Flanagan  
Borough Secretary

Hugh Hall  
Secretary to President

Long Island City, October 4th, 1922.

30 Hon. Charles L. Craig, Comptroller  
Department of Finance,  
Municipal Building,  
New York City.

Sir:—

40 In accordance with the recommendation of the Engineer of Sewers and the Engineer in Charge, Engineering-Construction this Department, I have granted an extension of time, two hundred and twelve and one half (212½) working days, to Angelo Paino, 32 Court Street, Brooklyn, N. Y., in which to complete the work in connection with contract No. 53907;—

“For the construction of a sewer and appurtenances in Corona Avenue from Alstyne Avenue to Junction Avenue, etc., Second Ward of the Borough of Queens.”

EXHIBIT C-216 (*continued*) :

10 The conditions encountered on this contract were unforeseen. The work was of a difficult nature, being in some cases 40 feet below the surface of the ground. When the subgrade was reached, the contractor had to contend with about five feet of water, which was entirely unforeseen when the contract was advertised. This made the progress much slower than would have been the case, if the excavating had not been so difficult on account of the water. This large volume of water necessitated pumping night and day for a considerable period and required very close sheeting to prevent the same from running and to prevent damage to buildings. We were forced to order the sheeting left in place.

20 The contractor was just about fairly well started in the prosecution of this contract when he ran into difficulties in obtaining money from your office on payments which had become due. An investigation was being held by your office on the contract work in this Borough and the contractors were unable to obtain their money. The same contractor doing this work also had another large contract in Flushing, upon which money was retained by you, and he was financially embarrassed. At first he laid off some of the men to cut down the large weekly pay-rolls, but was finally forced to suspend work altogether. This occurred on January 15, 1921 and construction work was not resumed again until May 19, 1921, which accounts for about 100 days which have been charged against this contract. The work up to the time that the contractor suspended operations had progressed satisfactorily. After work was again resumed, the work did not progress as fast as formerly, as the contract organization had been broken up in the meantime and it was sometime before another organization was obtained and the work prosecuted to a successful conclusion.

30 The contractor was also delayed on account of difficulties with the trolley companies in the moving of the pavement and the trolley tracks. He also experienced greater difficulty than anticipated in reconnecting the old sewer on Broadway to the new work as called for by this contract.

40 It was for the reasons given above that this extension of time was granted.

Very truly yours,

BENJAMIN MARIUN  
Acting President of the Borough of Queens.

EXHIBIT C-216 (*continued*):

GENERAL RELEASE.

To all to whom these Presents shall come or may concern,  
Greeting:

10 KNOW YE, That I, ANGELO PAINO, 32 Court St.,  
Brooklyn, N. Y., for and in consideration of the sum of NINETY  
FIVE THOUSAND, SIX HUNDRED, EIGHTY ONE 28/100  
Dollars, lawful money of the United States of America, to me in  
hand paid by The City of New York, have remised, released and  
forever discharged, and by these presents do, for myself, my heirs,  
executors, administrators and assigns, remise, release and for-  
ever discharge the said City of New York, of and from all and all  
manner of action and actions, cause and causes of action, suits  
debts, dues, sums of money, accounts, reckonings, bonds, bills,  
specialties, covenants, contracts, controversies, agreements, pro-  
20 mises, variances, trespasses, damages, judgments, extents, ex-  
ecutions, claims and demands whatsoever in law or in equity,  
which against said City of New York, I ever had, now have or  
which I, my heirs, executors, administrators or assigns hereafter  
can, shall or may have, for, upon or by reason of a certain con-  
tract or agreement made the 9th day of June, A. D. 1920, by and  
between Myself and the said City of New York, for Contract No.  
53907, Sewer, Corona Ave. etc., or by means of any matter, cause  
or thing whatsoever resulting or arising therefrom, from the  
begining of the world to the day of the date of these presents.  
30 Excepting the sum of \$1855.74 retained as repairing security and  
further excepting any claim I may have to the sum of \$1127.70 for  
repaving between car tracks, which claim is not hereby released  
by me nor conceded by the City of New York.

In Witness Whereof, I have hereunto set my hand and seal  
the 24th day of November in the year one thousand nine hundred  
and twenty two.

Sealed and delivered in the presence of

40 W. F. HEFFERMAN.

Original Delivered to Chief & Ass't Insp.

ANGELO PAINO

[S. L.]

SEAL.

EXHIBIT C-216 (*continued*):

STATE OF NEW YORK,  
COUNTY OF NEW YORK,      ss :  
CITY OF NEW YORK.

On this 24 day of November 1922, personally came and appeared before me ANGELO PAINO to me known and known to me to be the person described therein, and who executed the  
10 foregoing instrument and acknowledged that he executed the same for uses and purposes therein mentioned.

WM. F. HEFFERMAN  
Comm. of Deeds, N. Y. City  
Residing in N. Y. County  
N. Y. County Clerks No. 10  
Term Expires Jan. 10, 1924.

20

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THE CITY OF NEW YORK

Department of Finance.

Bureau of Audit — Division of Administration,

Municipal Building, Room 631

\$1,855.74

New York, December 19, 1923.

30 RECEIVED from CHARLES L. CRAIG, Comptroller, Warrant No. 181842 for the sum of ONE THOUSAND, EIGHT HUNDRED, FIFTY FIVE 74/100 Dollars, on account of the within Contract numbered 53907 for and in Full of repairing security.

ANGELO PAINO.

40

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EXHIBIT C-216 (*continued*):

THE CITY OF NEW YORK  
OFFICE OF THE PRESIDENT OF THE BOROUGH  
OF QUEENS.

10 BUREAU OF SEWERS.

CONTRACT FOR the construction of a sewer and appurtenances in

CORONA AVENUE from Alstynne Ave. to Junction Ave.;

GERRY AVENUE from Junction Ave. to Toledo St.;

20 JUNCTION AVENUE from Corona Ave. to Maurice Ave.;  
the low level sewer in MAURICE AVENUE from Junction Ave. to Broadway; the high level sewer in,

MAURICE AVENUE from Junction Ave. to Toledo St.;  
and from 480 ft. east of Broadway to Chicago Ave.; and  
a sewer in

BROADWAY from Maurice Ave. to St. James Place, with  
a temporary connection to the existing sewer in

30 BROADWAY at St. James Place, Second Ward of the  
Borough of Queens, together with all the work incidental  
thereto.

Parties.

40 THIS AGREEMENT, made and entered into this 9th day  
of June, in the year one thousand nine hundred and twenty by  
and between The City of New York, party of the first part, by  
the President of the Borough of Queens, and ANGELO PAINO  
of 2016 East 14th Street, Brooklyn, N. Y., Contractor, party of  
the second part, pursuant to the provisions of The Greater New  
York Charter, and the resolution of the Board of Estimate and  
Apportionment on the 20th day of February, 1920, of which  
resolution the following is a copy :

EXHIBIT C-216 (*continued*):

RESOLUTION

BOARD OF ESTIMATE AND APPORTIONMENT.

City of New York

(Cal. No. 64)

10       A copy of a resolution of the Local Board of the NEWTOWN District, duly adopted by said Board on the 18th day of December, 1919 and approved by the President of Borough of Queens on the 2nd day of January, 1920 having been transmitted to the Board of Estimate and Apportionment, as follows, to wit:

“RESOLVED, That this Board does hereby initiate proceedings for the said local improvement, to wit:

20       For the construction of a sewer and appurtenances in Corona Avenue from Alstyne Avenue to Junction Avenue; Gerry Avenue from Junction Avenue to Toledo Street; Junction Avenue from Corona Avenue to Maurice Avenue; the low level sewer in Maurice Avenue from Junction Avenue to Broadway; the high level sewer in: Maurice Avenue from Junction Avenue to Toledo Street and from 480'0" east of Broadway to Chicago Avenue and a sewer in Broadway from Maurice Avenue to St. James Place, with a temporary connection to the existing sewer in Broadway at St. James Place, Second Ward of the Borough of Queens; and

30

WHEREAS, on the 6th day of June, 1919, and the 20th day of February, 1920, resolution having been adopted by the Board of Estimate Apportionment authorizing the President of the Borough of Queens to prepare the necessary plans, specifications and an estimate of the cost of the proposed improvement based on actual survey and further resolving that the Board of Estimate and Apportionment will consider the authorization of the construction of the proposed improvement after the President of the Borough of Queens has submitted certain statements as provided in the said resolution, and the said resolution having been duly complied with by the President of the Borough of Queens, as appears by papers and documents on the files of the Board of Estimate and Apportionment, and there having been presented to the Board of Estimate and Apportionment an estimate in writing in such detail as the Board has directed, that the cost of the proposed work or improvement, together with the

40

EXHIBIT C-216 (*continued*):

preliminary expenses will be the sum of \$367,300; and a statement of the assessed value according to the last preceding tax roll of the real estate included within the probable area of assessment, to wit, the sum of \$6,028,000 having also been presented, it is

10 RESOLVED, That the said resolution of the Local Board, be and the same is hereby approved and the construction of the local improvement therein provided for is hereby authorized. This Board does hereby determine that no portion of the cost and expense thereof shall be borne and paid by The City of New York, but that the whole of such cost and expense, including the afore-said preliminary expenses, shall be assessed upon the property deemed to be benefited by the said local improvement.

I hereby certify that the foregoing is a true copy of a resolution adopted by the Board of Estimate and Apportionment at a meeting of said Board held on April 16, 1920.

20 Dated, New York, April 22, 1920.

(Signed) JAMES MATTHEWS,  
Assistant Secretary,  
Board of Estimate and Apportionment.

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BOARD OF ESTIMATE AND APPORTIONMENT

30 City of New York  
(Cal. No. 18)

40 RESOLVED, that the resolution adopted by the Board of Estimate and Apportionment on June 6, 1919, granting *preliminary* authorization for constructing sewers in Corona Avenue, Gerry Avenue, Junction Avenue, Maurice Avenue and Broadway, Borough of Queens, be and the same hereby is *amended* so as to conform to a resolution adopted on December 18, 1919, by the Local Board of the Newton District, the amended resolution to read as follows:

WHEREAS, The President of the Borough of Queens has transmitted to the Board of Estimate and Apportionment a copy of a resolution of the Local Board of the NEWTOWN District, duly adopted by said Board on the 18th day of December, 1919 and approved by the President of the Borough of Queens on the 2nd day of January, 1920 as follows, to wit:



EXHIBIT C-216 (*continued*):

“RESOLVED, That this Board does hereby initiate proceedings for the said local improvement, to wit:

10 For the construction of a sewer and appurtenances in Corona Avenue from Alstyn Avenue to Junction Avenue; Gerry Avenue from Junction Avenue to Toledo Street; Junction Avenue from Corona Avenue to Maurice Avenue; the low level sewer in Maurice Avenue from Junction Avenue to Broadway; the high level sewer in: Maurice Avenue from Junction Avenue to Toledo Street and from 480'0" east of Broadway to Chicago Avenue and a sewer in Broadway from Maurice Avenue to St. James Place, with a temporary connection to the existing sewer in Broadway at St. James Place, Second Ward of the Borough of Queens; and which resolution is accompanied with an approximate estimate of the cost of work and the assessed value of the property benefited.

20 RESOLVED, That the Board of Estimate and Apportionment hereby authorizes the President of the Borough of Queens to prepare plans, specifications and an estimate of cost based on actual survey, and also to secure a determination of the boundary of the district of assessment; the entire expense of the work done subsequent to the date of this authorization to be charged against the Street Improvement Fund and later included in the assessment.

30 RESOLVED, That the Board of Estimate and Apportionment will consider the authorization of the construction of the said proposed improvement after the President of the Borough of Queens has submitted a statement showing that all of the above described work has been done, that he has secured the approval of the form of contract by the Corporation Counsel, that he is prepared to place the improvement under contract as soon as he receives the consent of the Board, and that the assessment map will be completed on or before the date of payment on acceptance; this report being accompanied by a further statement showing 40 the quantity of work to be performed under each item and the unit price thereof, the expense incurred for preliminary work, the allowance to be made for additional engineering and contingencies, the total probable cost, and the number of working days to be allowed the contractor for carrying out the work.

EXHIBIT C-216 (*continued*):

I hereby certify that the foregoing is a true copy of a resolution adopted by the Board of Estimate and Apportionment at a meeting of said Board held on February 20, 1920.

Dated, New York, February 27th, 1920.

JAMES MATTHEWS,  
Assistant Secretary,  
Board of Estimate and Apportionment.

10

Covenant.

WITNESSETH, That the parties to these presents, each in consideration of the agreements on the part of the other herein contained, have mutually agreed, and hereby mutually agree, the party of the first part for itself and its successors, and the party of the second part for itself, himself, of themselves, and its, his or their executors, administrators, successors and assigns, as follows:

20

Contract.

I. The contract for the hereinbefore entitled work shall include the following, which are hereby agreed upon as forming part and parcel thereof: the Proposal for Bids, the Bid, the Bond, this Agreement and the Specifications hereto annexed; also the Plan of the Work dated March 3rd, 1920, filed in the office of the President of the Borough, entitled:

30

Plan, Profile and Details for the construction of a sewer in CORONA AVENUE from Alstyn Ave. to Junction Ave.; GERRY AVENUE from Junction Ave. to Toledo St.; JUNCTION AVENUE from Corona Avenue to Maurice Ave.; the low level sewer in MAURICE AVENUE from Junction Ave. to Broadway; the high level sewer in, MAURICE AVENUE from Junction Ave. to Toledo St., and from 480 ft. east of Broadway to Chicago Ave., and a sewer in BROADWAY from Maurice Ave. to St. James Place, with a temporary connection to the existing sewer in BROADWAY at St. James Place, Second Ward of the Borough of Queens, and also Drawings of Standard Details pertinent thereto on file in the office of the Engineer.

40

EXHIBIT C-216 (*continued*):

Party of the first part.

II. Whenever the term "The City" or a word "President," or a pronoun in place of either, is used, it refers to and means The City of New York, the party of the first part hereto, of the President of the Borough of Queens, or his authorized representative.

10 Party of the second part.

Whenever the word "Contractor," or a pronoun in place thereof, is used, it refers to and means the party of the second part hereto.

Engineer described.

20 III. Whenever the word "Engineer," or a pronoun in place thereof, is used, it refers to and means the Engineer in Charge of Sewers, Borough of Queens, acting either directly or through assistants designated by him to act in the premises, limited to the particular duties entrusted to them. In case said Engineer may not be able to act, then such Engineer as may be designated by the President shall act in his place.

Terms defined.

30 IV. Whenever the word "plan" is used it refers to and means the plan of this work and the standard drawing pertinent thereto. Whenever it is provided that anything is "to be" or "to be done," "if" or "as", or "when" or "where approved," "required," "directed," "permitted," "ordered," "designated" or "deemed necessary" it shall be taken to mean approved, required, permitted, ordered, designated or deemed necessary as the case may be by the Engineer. Whenever the words "desirable," "suitable," "sufficient," "satisfactory" or others of a similar purport are used it is hereby agreed that the desirability, suitability, sufficiency, satisfactoriness or other denominated condition shall be as determined by the Engineer.

40 Contractor to furnish tools, proper appliances, etc.

V. The Contractor hereby agrees to furnish and provide all materials, labor, and appliances necessary and proper for the purpose, to excavate for, build, complete and connect in a good substantial manner, to the satisfaction of the President, and in conformity with the contract, the hereinbefore entitled work and all the work incidental thereto, and the Contractor hereby agrees

EXHIBIT C-216 (*continued*):

to receive and accept as and for his full compensation the following prices, which are the amounts or rates at which this contract was awarded to the Contractor at the public letting thereof:

TYPE "B"

10	Linear Feet 7'6" x 8'3" Reinforced Concrete Sewer, Per Linear Foot, One hundred twenty five Dollars (\$125.00).	
	Linear Feet 7'0" x 8'3" Reinforced Concrete Sewer, Per Linear Foot, One hundred twenty five Dollars (\$125.00).	
	Linear Feet 6'9" x 8'3" Reinforced Concrete Sewer, Per Linear Foot, One hundred forty Dollars ..... (\$140.00).	
	Linear Feet 8'0" Reinforced Concrete Pipe Sewer (Precast Type "B"), Per Linear Foot, One hundred 00/100 Dollars ..... (\$100.00).	
20	Linear Feet 24-inch Reinforced Concrete Pipe Sewer (Precast Type "B"), including cost of removal of 12-inch sewer and one manholes, Per Linear Foot, Fifteen 00/100 Dollars ..... (\$15.00).	
	Linear Feet 22-inch Vitrified Pipe Sewer, Per Linear Foot, Seven 00/100 Dollars ..... (\$7.00).	
	Linear Feet 18-inch Vitrified Pipe Sewer, Per Linear Foot, Seven 00/100 Dollars ..... (\$7.00).	
	Linear Feet 12-inch Vitrified Pipe Sewer, Per Linear Foot, Six 00/100 Dollars ..... (\$6.00).	
30	Manholes, Complete, on Concrete Sewer, Each, Four hundred 00/100 Dollars ..... (\$400.00).	
	Manholes, Complete, on Vitrified Pipe Sewer, Each, One hundred 00/100 Dollars ..... (\$100.00).	
	Basin Manholes, Complete, Each, One hundred 00/100 Dollars ..... (\$100.00).	
	Inlets, Complete, Each, Seventy five 00/100 Dollars ..... (\$75.00).	
	Linear Feet 12-inch Vitrified Pipe Basin Connection, Per Linear Foot, One 00/100 Dollar ..... (\$1.00).	
40	Linear Feet 10-inch Vitrified Pipe Basin Connection, Per Linear Foot, One 00/100 Dollar ..... (\$1.00).	
	Six-inch Spurs, 24-inches long on Concrete Sewers, Each, One 00/100 Dollar ..... (\$1.00).	
	Six-inch Spurs on 22-inch Vitrified Pipe Sewers, Each, One 00/100 Dollar ..... (\$1.00).	
	Six-inch Spurs on 18-inch Vitrified Pipe Sewers, Each, One 00/100 Dollar ..... (\$1.00).	

EXHIBIT C-216 (continued):

	Six-inch Spurs on 12-inch Vitrified Pipe Sewers, Each, One 00/100 Dollar .....	(\$1.00).
	Vertical Feet Risers for House Connections, Per Vertical Foot, Five 00/100 Dollars.....	(\$5.00).
	Linear Feet 6-inch Vitrified Pipe House Connection Drains, Per Linear Foot, Two 00/100 Dollars .....	(\$2.00).
10	Chamber at Corona and Junction Avenue, Complete, Three thousand 00/100 Dollars .....	(\$3000.00).
	Junction Chamber at Maurice and Junction Avenues, Complete, Four thousand 00/100 Dollars .....	(\$4000.00).
	Chamber at Broadway and Maurice Avenue, Complete, Two thousand 00/100 Dollars .....	(\$2000.00).
	Chamber at Broadway and St. James Place, Complete, Three thousand 00/100 Dollars .....	(\$3000.00).
	Cubic Yards Class "A" Concrete (exclusive of concrete shown on plan), Per Cubic Yard, Twenty 00/100 Dollars .....	(\$20.00).
20	Lbs. Reinforced Steel (exclusive of steel shown on plan), Per Lb., Twelve cents .....	(\$0.12).
	Feet B. M. Timber, for sheeting and bracing, Per 1000 ft. B. M., Ninety eight 00/100 Dollars...	(\$98.00).
	Cubic Yards Rock Excavation, Per Cubic Yard, Sixteen 00/100 Dollars .....	(\$16.00).

30 The quantities for Rock Excavation, Class "A" Concrete, Reinforcing Steel and Timber for sheeting and bracing, are for the purpose of securing prices in the event that rock is encountered, and that the Class "A" Concrete, Reinforcing Steel, and Timber may be necessary.

Quantities are approximate only.

No extra compensation.

40 VI. The Contractor admits that the quantities of materials to be furnished and the amount of work to be done, as stated in the proposal for bids for the work, are approximate only. The Contractor agrees that The City is not to be held responsible that any of said quantities and amounts shall obtain in the construction of the work, as he has judged for himself as to such quantities and amounts and each of them, and as to the other circumstances affecting the cost of the performance of this contract; and that he will not at any time dispute or complain of such statement nor assert that there was any misunderstanding in

EXHIBIT C-216 (*continued*):

regard to the character, size or depth of the excavations to be made or the kind or amount of the materials to be furnished or work to be done. The Contractor hereby agrees that he will not ask, demand, sue for, nor seek to recover for the entire work any extra compensation beyond the amount payable for the several classes of work and kinds of materials in this contract enumerated, which shall be actually performed and furnished, at the  
10 prices therefor herein agreed upon and fixed.

Sewers, etc., to be built as shown on the plan.

VII. The sewer and appurtenances will be built on the lines, at the depths and at the grades and in the manner shown on the plan of the work as the same will be designated on the ground by the Engineer.

Line may be changed.

20 The President may change the line of the sewer of the basin manholes, inlets, or other sewer appurtenances provided such changes do not materially affect either the character or the amount of the work to be done, or the conditions under which it is to be performed, and the Contractor hereby agrees to make no claim for damages or extra compensation on account thereof.

Preservation of points, stakes, etc.

30 The Contractor will safeguard all points, stakes, grade marks, monuments and bench marks made or established on or near the line of work, and he agrees to accept responsibility for and to remedy at his cost any mistakes that may be caused by the unauthorized disturbance or removal of such points, stakes, grade marks, monuments and bench marks.

Written order for extra work.

40 VIII. No claim for additional work or materials shall be made by or allowed to the Contractor, unless before the performance of such additional work the President shall have first authorized the same, in writing, and the same shall have been done or furnished under a written order from the President, given before the performance of such additional work or the furnishing of such additional materials. The aggregate price to be paid for additional work or materials so authorized or ordered shall not exceed five (5) per cent, of the contract price or the total cost of the work and materials.

EXHIBIT C-216 (*continued*):

Contract may be modified

This contract may be modified and changed from time to time as may previously be agreed to, in writing, between the parties hereto, in a manner not materially affecting the substances thereof or increasing the contract price thereunder, in order to carry out and complete more fully and perfectly the work  
10 herein agreed to be done and performed.

Limit to extras.

All claims for additional work or materials in any month shall be made to the Engineer; in writing, before the 15th day of the following month, and failing to make such claim within the time required, the rights of the Contractor to additional pay for such additional work or materials shall be deemed to have been waived and forfeited.

20 - Inspection.

Work or materials may be condemned at any time.

IX. The Engineer shall inspect the materials furnished and the work done and see that the same correspond with the specifications. The Engineer is hereby authorized and empowered to reject and refuse all labor and material or method of application, or any part thereof, offered under or in fulfillment of this contract, that do not comply in kind, quality or quantity  
30 with the terms thereof. Any material delivered or offered to be delivered under this contract, which shall be rejected by the Engineer as not conforming to the terms thereof, will be forthwith removed by the Contractor, and material which does so conform will be forthwith furnished and delivered by him in place thereof. The Contractor hereby agrees not to use any material which has not been inspected and accepted, nor to perform any work except under inspection, to which end he further agrees to notify the Engineer when lines, grades or inspection are required so that the Engineer may have time to provide for  
40 the same. No inspection, approval or acceptance of any part of the work herein contracted for or of the materials used therein, or any payment on account thereof, shall prevent the President from refusing to accept the work or materials at any time thereafter.

EXHIBIT C-216 (*continued*):

Engineer to be final arbiter.

X. To prevent all dispute and litigation, it is hereby agreed that the Chief Engineer in Charge of Sewers shall in all cases determine the amount and the quality of the several kinds of work and materials which are to be paid for under this contract, and he shall determine all questions in relation to the  
10 work and materials and the construction thereof, and he shall in all cases decide every question which may arise relative to the execution of this contract on the part of the Contractor, and his decision will be final and conclusive upon the Contractor, and such decision, in case any question shall arise, shall be a condition precedent to the right of the Contractor to receive any money under this contract.

Any doubt as to the meaning of this contract and the specifications thereof, or any obscurity as to the wording of  
20 them, or any discrepancy between them and the plan will be explained by the Engineer, and his explanation will be accepted by the Contractor, who hereby agrees to execute the work in accordance with such explanation, and to make no charge or claim for any extra work or damage on account thereof.

Work and materials must agree with specifications.

XI. The work will be performed in the best manner, and all materials of which the work is composed will be of the best  
30 kind, and a sufficient number of persons will be at all times employed to execute the work with due dispatch, the whole to be done to the satisfaction of the Engineer, and any materials furnished or work done not satisfactory to the Engineer will be immediately removed and satisfactorily replaced by the Contractor at his own expense; or if he shall neglect or refuse to remove and replace the same when notified so to do by a written notice to be served upon him, then the President may remove, or cause the same to be removed and satisfactorily replaced, by  
40 contract or otherwise, as he may deem expedient, and charge the expense thereof to the Contractor; and the expense so charged shall be deducted and paid by The City out of such moneys as are or may become due under his contract.

Examination.

During the progress or after the completion of the work, should the Engineer require it, for the purpose of examining the



EXHIBIT C-216 (*continued*):

same, the Contractor will make such openings, and to such extent through such part or parts of the work as the Engineer may direct, and the Contractor will satisfactorily restore the work so disturbed. Should the opening disclose defects in the work such defects shall be remedied in accordance with the provisions of the first paragraph of this section.

10 Use of patented articles.

XII. Wherever an article or any kind of material is specified by trade name or by the name of a patentee, manufacturer or dealer, or by reference to the catalogue of a manufacturer or dealer, it shall be taken as intending to mean and specify the article or kind of material designated, or any other equal thereto in quality, finish and durability, and equally serviceable for the purposes for which it is or they are intended. Nothing on the plan or in the specifications shall be interpreted or taken to violate the provisions of section 1554 of the Greater New York Charter, which provides that "except for repairs, no patented pavement shall be laid and no patented article shall be advertised for, contracted for or purchased, except under such circumstances that there can be a fair and reasonable opportunity for competition, the condition to secure which shall be prescribed by the Board of Estimate and Apportionment."

20

Claims for infringement.

The Contractor will be responsible for any claims made against The City for any infringement of patents, by the use of patented articles or processes in the construction and completion of the work, and he will save harmless and indemnify The City all costs, expenses and damages caused by reason of any infringement of patents used in the construction and completion of the work.

30

Commencement and completion.

XIII. The Contractor will begin the work herein agreed to be performed on such date as the President shall notify him to begin on and from which date the time hereinafter fixed for the completion of the work shall begin to run. The place where the work is to be begun will be either stated in said notice or designated on the ground by the Engineer. The commencement of work by the Contractor without notice shall be deemed and taken to be a waiver on his part of notice to begin work, in which case the

40

EXHIBIT C-216 (*continued*):

time for the completion of the work will begin to run on and from the date the work was commenced.

Time of performance.

10       XIV. The Contractor will carry on the work with such force and in such manner and order and at such places, times and seasons, including freezing weather, as may be directed by the Engineer, and will execute all the work in every respect in a thorough and workmanlike manner; and he will fully and entirely perform this contract on his part before the expiration of Three hundred and fifty (350) CONSECUTIVE WORKING DAYS.

Time important.

20       It is hereby agreed that the time designated for the performance of all the work under this Contract is of the essence of this agreement, in view whereof it is hereby further agreed that a rate of progress will be maintained so that the work performed up to any time will be at least the same percentage of the total work to be performed under this contract as the net elapsed time at such time is of the total time allowed for the performance of all the work under this contract.

30       In the computation of the number of consecutive working days, the time during which the completion of the work has been delayed in consequence of the condition of the weather, or tides, or by any act or omission of the party of the first part or during such period as the work has been suspended by written order of the President, or delays for which the Contractor is not responsible (all of which will be determined by the President, who shall certify to the same in writing, and whose determination and certificate thereof shall be binding and conclusive upon the Contractor), will be allowed to the Contractor and will be deducted in computation. Sundays and also holidays on which no work is done, will also be excluded from said computation. In case a larger amount of rock excavation than is set forth in the  
40       Engineer's Estimate shall be necessary, an allowance of one day will be made for each 25 cubic yards of such excess of rock excavated and removed in accordance with the measurement of rock allowed by the specifications. If the completion of the work to be done under this contract shall require work or materials or both in greater amounts than those set forth in the Engineer's Estimate of Quantities, or if unforeseen obstacles are encountered in the prosecution of said work, then the time which the Con-

EXHIBIT C-216 (*continued*):

tractor is delayed on account thereof will be determined and allowed by the President at the completion of the work, upon the receipt by him of a written application from the Contractor for such determination and allowance. No demand by the Contractor that the President determine and certify the matters aforesaid shall be of any effect whatsoever unless the same be made in writing and duly served upon the President prior to the filing  
10 in the office of the Comptroller of The City of the final certificate of the completion and acceptance of the work.

End of time period.

The time shall run against this contract until all work called for in this contract is completed to the satisfaction of the Engineer.

Liquidated damages.

20 XV. In case the Contractor shall fail to complete the work hereunder in accordance with the contract within the time aforesaid, he agrees to pay to The City the sum of Ten 00/100 Dollars (\$10.00) for each and every day the time consumed in said performance and completion exceeds the time hereinbefore allowed for that purpose; which said sum, in view of the difficulty of ascertaining the loss which The City will suffer by reason of delay in the performance of the work hereunder, is hereby agreed upon, fixed and determined by the parties hereto as the liquidated damages that The City will suffer by reason of said delay  
30 and default, and not as a penalty; and The City shall and may deduct and retain the amount of such liquidated damages out of the moneys which may be due or become due under this contract.

Work not provided for in contract.

40 XVI. If, before the completion of the work contemplated herein, it shall become necessary to do any other or further work on or near the line thereof than is provided for in this contract, the Contractor will not in any way interfere with or molest such person or persons as the President may employ to do such work, and will carry on the work under this contract in such manner as may be ordered so as to afford all reasonable facilities for doing such other or further work; and no damage or claim by the Contractor shall be allowed therefor, except such allowance of time for delay as the President may deem reasonable.

EXHIBIT C-216 (*continued*):

President's right to suspend work.

XVII. The President is hereby authorized to suspend the whole or any part of the work herein contracted to be done, if he shall deem it for the interest of The City so to do. During such suspension the trenches shall be backfilled, if required, and the roadways and pavements over the same satisfactorily restored,  
10 and all materials upon the work shall be neatly piled so as not to obstruct public travel, or shall be removed from the line of the work, if directed.

No damages to be claimed for delay due to other contracts.

XVIII. Should postponement or delay be occasioned by the precedence of paving or other contracts, which may have been either let or executed before the opening of the bids for this contract, the Contractor will make no claim for damages therefor  
20 nor for any damages in consequence of the street or the adjoining sewers not being in the condition contemplated by the parties at the time of making the contract; if, however, the Contractor shall be delayed in performance of his work by reason of the street or the adjoining sewers not being in such condition, or by reason of the work or any part thereof being suspended as hereinbefore provided, such allowance of time on account thereof as the President shall deem reasonable will be made.

If the work be suspended or delayed by any act or omission of  
30 The City, or for the reason that The City does not own or has not obtained possession of, or the right to enter upon the land upon which the work is to be performed, or because of any act or omission of any employee or agent of The City or any other Contractor performing the work for The City, the President, or whoever is directed by this contract, to make the certificate in reference to time, shall make such allowance of time for the completion of the work as the Engineer shall certify that the work has been delayed. No allowance whatever as damages will be  
40 made to the Contractor because of any such suspension or delays, and no claim shall be made by the Contractor on account thereof.

Allowance of time for delays.

XIX. No allowances of time for delays under the provisions of this contract nor the delivery and acceptance of any articles or materials called for by this contract, shall be deemed to be a waiver by the President of the right to abrogate this con-

EXHIBIT C-216 (*continued*):

tract for abandonment or delay in the manner hereinafter provided.

Right to construct sewers, etc.

Permits for connections.

10           XX. Prior to the commencement of and during the progress of the work under this contract the President shall have the right to undertake, and to grant permits for, any construction, reconstruction, and repairing of any pipes, sewers, basins, subway ducts and railway tracks, and any appurtenances thereof located on and adjoining the line of the work, and for any connections with and additions to such pipes, etc., and for such purposes the President is hereby authorized to suspend work on any part of this contract, in accordance with Section XVII, and the Contractor will not interfere with nor place any obstructions in  
20 the way of any person or persons who may be engaged upon such work. The President is hereby authorized to connect, by contract or otherwise, any sewers and drains with the work built under this contract and to grant permits to any person or persons to make connections therewith at any time before it is completed; and the Contractor will not interfere with nor place obstruction in the way of such persons as may be employed in building such sewers and drains, or in making such connections, and the flow from such sewers, drains and connections will be permitted by the Contractor to discharge into the work built under his contract and  
30 the Contractor agrees to make no claim for compensation, damages or delay on account thereof. The issuance of such permits shall not be considered as an acceptance by The City of that part of the sewer into which such connections empty or flow, nor shall the Contractor on account thereof be relieved from the cleaning of the sewer prior to the final examination of the work. No new connections or drains will be allowed to be made or joined to the work built under this contract unless a permit therefor has been duly issued by the President, which permit shall be  
40 shown in all cases to the Inspector of the work.

Flow of sewers and drains, etc.

Drains, etc., interrupted.

Sewers, etc., to be kept clean.

XXI. The Contractor will provide at his own cost for the flow of the sewers, drains and water courses interrupted during

EXHIBIT C-216 (*continued*):

the progress of the work, and will immediately cart away and remove all offensive matter. The flow throughout the entire length of such sewers and appurtenances as are to be replaced by the work to be done under this contract will be maintained by the Contractor. The Contractor will remove at his own cost and expense all such bulkheads, as may be directed, from the sewers with which the work under this contract will be connected. When  
10 the permanent removal of any existing pipe sewers and appurtenances and pipe drains is necessitated by the work to be done under this contract, such of the materials of such structures as may be directed shall be carefully taken up, piled and left at the disposal of The City, and shall not be used in the work, and the remainder shall be removed from the work and disposed of by the Contractor. Wherever the work to be built under this contract, or the trenches in which it is to be constructed, follow the line, and occupy the place of or intercept the Fire Alarm Telegraph System of The City, or any existing sewers, drains, culverts, basin  
20 connections or house connections for which permits may have been granted prior to the opening of the bids for this contract, the Contractor will make the same good, and will rebuild the Fire Alarm Telegraph System of The City and also said sewers, drains, culverts and connections, or connect the same with the sewer built under this contract, whichever he may be directed to do, at his own cost and expense. All sewers, drains, culverts, basins and basin connections rendered unnecessary by the construction of the work herein contemplated, shall be thoroughly broken up, except  
30 as otherwise hereinbefore provided, and satisfactorily filled in by the Contractor at his own cost and expense, as shall also all portions of water courses in, through or across any street that may be rendered unnecessary by the construction of this work. During the progress of the work, and until the completion and acceptance thereof, the sewers, drains, basins, culverts and connections built under this contract shall be kept thoroughly cleaned throughout, and shall be left clean.

Sale of sand or earth.

40 XXII. The Contractor will not sell, nor permit to be removed from the line of the work, before the trench shall have been backfilled, any building sand or earth thrown up, except upon written permission, and then only so much as shall remain after reserving a sufficient quantity to backfill the trench and complete the paving; and the Contractor will, in all cases, backfill the trench with the same material thrown out, provided it

EXHIBIT C-216 (*continued*):

be suitable under the provisions of the specifications hereof; but if it be unsuitable, then the same shall be removed from the line of the work, and suitable material procured and used for backfilling the trench, and when required sand of proper quality and depth shall be spread on the surface to receive the pavement.

10 The Contractor hereby agrees that all excavated material and materials of construction placed by him or for him upon private property, unless by written permission of the owners or lessees thereof, will be removed by him and all damage to said property remedied by him at his own cost and expense. Unless such materials are removed and such damage remedied by the Contractor within 48 hours after the receipt by him of a written notice so to do, he agrees that the President shall be and is hereby authorized to dispose of such materials, and to remedy such damage and to deduct the expense thereof from the moneys due or to become due under this contract.

20 Contractor to give personal attention to work.

Not to assign or sublet.

30 XXIII. The Contractor will give his personal attention constantly to the faithful prosecution of the work; he will not assign, transfer, convey, sublet or otherwise dispose of this contract, or his right, title or interest in or to the same, or any part thereof, without the previous consent, in writing, of the President, indorsed hereon or hereto attached; and he will not assign, by power of attorney or otherwise, any of the moneys to become due and payable under this contract, unless by and with the like consent, signified in like manner. If the Contractor shall, without such previous written consent, assign, transfer, convey, sublet or otherwise dispose of this contract, or of his right title or interest therein, or any of the moneys due or to become due under this contract, to any other person, company or other corporation, this contract may, at the option of the President, be revoked and annulled, and The City shall thereupon be relieved and discharged from any and all liability and obligations growing out of the same to the Contractor, and to his assignee or transferee; provided that nothing herein contained shall be construed to hinder, prevent or affect an assignment by the Contractor for the benefit of his creditors, made pursuant to the statutes of the State of New York; and no right under this contract, or to any money to become due hereunder, shall be asserted against The City, in law or in equity, by reason of any so-called assignment of this con-

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EXHIBIT C-216 (*continued*):

tract, or any part thereof, or of any moneys due or to become due hereunder, unless authorized as aforesaid by the written consent of the President.

When Contractor is absent.

Disorderly workmen.

10 Contractor to provide assistance.

20 XXIV. Whenever the Contractor is not present on any part of the work where it may be necessary to give directions, orders will be given by the Engineer to and shall be received and obeyed by the superintendents and foremen who may have immediate charge of the men employed on the particular work in relation to which the order may be given; and at any time, if a foreman or workman employed by the Contractor shall be declared by the Engineer to be disobedient, incompetent or disrespectful, the Contractor, on receiving written notice to that effect, will forthwith dismiss such person, and will not again employ him on any part of the work. The Contractor will provide all necessary assistance for the Engineer when required, without charge or expense to The City or Engineer.

Contractor to plank and bridge for traffic.

30 XXV. The Contractor will observe the law and all ordinances of The City in relation to obstructing the streets, keeping open passageways and protecting the same where they are exposed and would be dangerous to the public travel, and such passageways shall, as may be required, be planked or bridged by the Contractor, at his own expense.

Guards and lights.

Indemnification of City.

40 XXVI. During the performance of the work herein set forth the Contractor will place proper guards upon and around the same for the prevention of accidents, and at night will put up and keep suitable and sufficient lights, and he will indemnify and save harmless The City against and from all claims, suits and actions, of every name and description, brought against it, and all costs and damages to which it may be put on account or by reason of any injury or alleged injury to the person or property of another, resulting from the prosecution of the work or from negligence or carelessness in the performance of the work, or in



EXHIBIT C-216 (*continued*):

guarding the same; or from any improper materials used in its prosecution, or by or on account of any act or omission of the Contractor or his agents; and the Contractor agrees that the whole or so much of the moneys due to the Contractor under and by virtue of this contract, as shall or may be considered necessary by the Comptroller of The City, may, at its option, be retained by The City until all such suits and claims for damages as aforesaid shall have been settled, and evidence to that effect furnished to the satisfaction of the Comptroller.

Contractor to make repairs.

XXVII. In case any injury is done to property along the line of the work, or to any sidewalk, in consequence of any act or omission on the part of the Contractor or his employees or agents in carrying out any of the provisions or requirements of this contract, the Contractor will make such repairs as are necessary in consequence thereof, at his own expense and to the satisfaction of the President, and in case of failure on the part of the Contractor to promptly make such repairs, they may be made by the President, and the expense thereof will be deducted out of the moneys due or to become due under this contract.

Loss or damage to be assumed by Contractor.

XXVIII. The Contractor agrees to assume, and to make no claim on account of, any and all loss or damages arising out of the nature of the work to be done under this contract, or from any unforeseen obstructions or difficulties which may be encountered in the prosecution of the same or from the action of the elements, or from incumbrances on or near the line of the work, or from the breaking of water mains, sewer and gas mains on or near the line of the work.

Claims for labor, etc.

XXIX. The Contractor will pay promptly, and in cash, for all labor employed upon and all materials furnished and used in the work, and if at any time before or within thirty days after the whole work herein agreed to be performed has been completed and accepted by The City, any person or persons claiming to have performed any labor or furnished any materials toward the performance and completion of the contract, shall file with the President and with the Comptroller of The City any such notice as is described in the Lien Law or any act of the Legislature of the State of New York, then, and in every such case, The

EXHIBIT C-216 (*continued*):

10 City shall retain — anything herein contained to the contrary thereof notwithstanding — from the moneys under its control, and due or to become due under this contract, so much of the moneys as shall be sufficient to pay off, satisfy and discharge the amount in such notice alleged or claimed to be due to the person or persons filing such notice, together with the reasonable cost of any action or actions brought or that may be brought to enforce such claim or the lien created by the filing of such notice. The money so retained shall be retained by The City until the lien thereon created by the said act and the filing of the said notice shall be discharged, pursuant to the provisions of the said act.

Contractor will prevent filing of liens, etc.

20 XXX. The Contractor will not, at any time suffer or permit any lien, attachment, or other incumbrances, under the law of this State or otherwise, by any person or persons whomsoever, to retain on file in the Finance Department or at the office of the City Department having supervision of the work against any money due or to become due for any work done or materials furnished under this contract, or by reason of any other claim or demand against the Contractor; and any such lien, attachment, or other incumbrance, until it is removed, shall preclude any and all claim or demand for any payment whatsoever under or by virtue of this contract.

Evidence of satisfaction of liens, etc.

30 The Contractor further agrees that he will present to the party of the first part satisfactory evidence that all just liens, claims and demands of his employees, or of parties from whom materials used in the construction of the work may have been purchased or procured are fully satisfied and that the materials furnished and work done under this contract are fully released from all such liens, claims and demands before said party of the second part will demand or shall receive the sums due on final payment under this contract.

40 Notice to gas companies, etc.

Not to hinder other companies.

XXXI. At least 24 hours before breaking ground for the work under this contract the Contractor will give notice, in writing, to all gas, railroad, and other companies owning or controlling any pipe, tracks or other structures which during the

EXHIBIT C-216 (*continued*) :

10 progress of the work any be affected by the prosecution of the same so that said companies may protect or remove their structures, and he will not cause any hindrance to, or interference with, any such gas company or other company or companies in protecting their said pipes, tracks or other structures, nor in removing or otherwise protecting and replacing the main and service pipes, lampposts, lamps, tracks or other structures where necessary, but the Contractor will suffer the said company or companies to take all such measures as are requisite for the purpose aforesaid. But if said as, railroad, or other companies, within five days after receipt of such notice, fail to support, remove or otherwise protect their structures, the Contractor will upon the approval of the President protect or remove the same, it being expressly understood that the cost thereof shall not be a charge against The City, but shall be a matter for adjustment between the Contractor and the company or companies concerned.

20 Pipes, conduits, etc., of private companies.

30 XXXII. It is hereby agreed that The City is not responsible or liable for the support, protection or reconstruction of such gas pipes, conduits, water pipes, tracks or structures owned by private companies enjoying special franchises or occupying any portion of the street or way on or below the surface in its streets or ways, as the Contractor admits that he has carefully examined the location of work, has made special inquiry at the offices of the companies owning, controlling or operating said pipes, conduits, tracks and structures, and he has determined to his satisfaction the character, size, location and length of such pipes, conduits, tracks and structures; that he has inspected the public records of the various City Departments having cognizance and control of pipes, conduits, and other subsurface structures, and of The City's water pipes, conduits and sewers, and he has made such further personal inspection and investigation as he deemed proper to determine the correctness of the information so obtained; and he clearly understands that The City does not insure the accuracy of such reports or information, and agrees  
40 that he will not make any claim against The City for damages or extra work caused or occasioned by his relying upon such records, reports or information furnished by any City Department or any companies, either as a whole or in part.

EXHIBIT C-216 (*continued*):

Protection and restoration of pipes, etc., in private companies.

10 XXXIII. The Contractor agrees to confer with and to make to or entertain an offer from such private companies as own the said pipes, conduits, tracks or structures, and the Contractor further agrees to enter into an agreement with said companies by what terms and at what prices the support, protection, removal and reconstruction of the pipes, conduits, tracks and structures will be undertaken and accomplished, and in the event of the failure to make such an agreement with said companies, he will not complain nor make any demand on The City for additional compensation or pay for supporting, protecting, removing or restoring the said pipes, conduits, tracks or other structures.

Contractor to notify Department of Water Supply, Gas and Electricity.

20 XXXIV. At least twenty-four hours before breaking ground, for the purpose of constructing the work of this contract, the Contractor agrees to give notice thereof in writing to the Department of Water Supply, Gas and Electricity.

City's water pipes, etc.

30 XXXV. If upon excavating it shall be found that any existing water pipes or appurtenances owned or controlled or operated by The City follow the lines, or occupy the place, of the sewer or sewers and appurtenances to be laid or built as shown on the plan, such existing water pipes and appurtenances will be removed and relaid, or rebuilt, by and at the cost of the Department of Water Supply, Gas and Electricity of The City of New York; if, however, in order to facilitate the work to be done under this contract, it be found desirable to temporarily remove any water pipes or appurtenances, owned or controlled or operated by The City, to removal and replacing in their original positions of such water pipes and appurtenances will be done by the Department of Water Supply, Gas and Electricity for the Contractor at his cost and expense.

40 Protection of City's water pipes, etc.

XXXVI. The Contractor agrees to protect all water mains and service water pipes owned, controlled or operated by The City which may be affected in any manner by the work done under this contract, except as hereinbefore provided, and to protect all such water and service pipes from freezing, and if he fails

EXHIBIT C-216 (*continued*):

to do so, the Commissioner of Water Supply, Gas and Electricity is hereby authorized to protect such main and service pipes, or in the event of their having suffered injury to replace such pipes, and recalk and repair the same immediately, as the work progresses, and the cost thereof shall be charged to the Contractor; the cost so charged shall be deducted from any sum or sums due or to become due under this contract, and in case such sum or sums shall be insufficient to cover such cost, the Contractor will be liable for the balance.

Protection of gas and water mains and pipes, etc.

XX XVII. The Contractor agrees to sustain in their places and protect all water or gas mains, conduit, subways or service pipes, steam pipes and pneumatic pipes, that may be adjacent to his work but entirely outside of the lines of the excavations as required by the specifications and all sidewalks, curbs, stoops, areas, and all other property in the vicinity of his work, from direct or indirect injury by caving or otherwise, and he hereby assumes all expenses for direct or indirect damage which may be occasioned by injury to any of them, and he agrees to have at all times a sufficient quantity of timber and other necessary materials and appliances on the ground, and will use the same, as required, for bracing and sheeting the sides and ends of excavations, and for sustaining and supporting any and all pipes, conduits, subways, lamp-posts and lamps or other structures that are undermined, weakened, endangered or threatened; and in case any damage or injury shall or may result to said pipes, conduits, subways, lamp-posts and lamps and other works or structures of any gas, electric, railroad or other company whatsoever, or to any private property, through or by reason of any negligence, wilfulness, carelessness or want of skill on the part of the Contractor, his agents or servants, the Contractor hereby agrees to pay such amount as may be sufficient to cover the expense and damages occasioned by such negligence, wilfulness, carelessness or unskillfulness, and that such amount shall be charged against him; and the President is hereby authorized to deduct and retain from any moneys which may be due, or which shall become due, under this contract, a sum sufficient, in his judgment, to cover the cost of making good any such damages, expense or loss, and to apply said sum so deducted and retained to the requisite repairs or renewals, or to reimburse the parties damaged or injured.

EXHIBIT C-216 (*continued*):

Old water and gas pipes.

XXXVIII. All iron, water and gas pipes which it becomes necessary to remove shall be considered the property of The City and will be piled by the contractor in such part or parts of the streets as may be directed, unless notice to the contrary is given him in writing, in which case he will remove the same at  
10 his own expense.

Change of grade.

XXXIX. In case the grade of the street shall be changed during the progress of the work, the Contractor will conform to the altered grade at the contract prices, as far as they are applicable: and for any work for which there is no contract price, the provisions in relation to work not provided for in this contract shall apply.

20 Measurement of work and material.

XL. All quantities of work and materials to be paid for will be measured and determined, according to the plan and the working lines that may be given, and the specifications, when the work conforms thereto. No allowance will be made on any part of the work for any excess above the quantities required by such plan, lines and specifications. Should the dimensions of any part of the work, or of the materials be less than those required by the plan, the actual quantities only will be allowed in measurement.

30 Payment on acceptance of work.

XLI. The Contractor will not be entitled to demand or receive payment for any portion of the work or materials unless the same has been fully completed in the manner set forth in this contract, and such completion duly certified by the Engineer in Charge of Sewers, and until each and every one of the stipulations hereinbefore mentioned is complied with, and the work completed to the satisfaction of the President and accepted by him, and the  
40 final certificate of completion and acceptance thereof, signed by the President and said Engineer, filed with the Comptroller. The City will pay to the Contractor on or before the expiration of thirty days from the filing of said final certificate of completion and acceptance in the office of the Comptroller, the whole of the moneys accruing to the Contractor, under this contract, except such sums of money as shall be retained under any of the provisions herein contained for that purpose, or in any law of the

EXHIBIT C-216 (*continued*):

State, under any ordinance of The City passed prior to the date of this contract and now in force.

Moneys to be retained for repairs to unpaved streets.

10 It is hereby further agreed that The City shall be and is hereby authorized to retain out of the moneys payable to the Contractor, during a period of six months from the date of the final completion and the acceptance by the President of the work done under this contract, the sum of \$0.06/100 for each linear foot of sewer, basin connection, and house connection constructed under this contract within unpaved streets, and the sum of \$0.40/100 for each linear foot constructed within streets repaired by the Contractor. And should the Contractor fail to make such repairs to the street surface as may become necessary by reason of the work done under this contract within two days of the date of service of notice upon him so to do, then the President may  
20 expend such sum or any part thereof in making such repairs.

Payment of retained moneys to be made after six months.

It is hereby further agreed that The City, upon the expiration of the said period of six months, will pay to the said party of the second part the whole or such part of the moneys retained as may remain after the expenses of making said repairs, in the manner aforesaid, shall have been paid therefrom.

30 Termination of six months' period.

It is hereby further agreed that if the termination of the said period of six months after the completion and acceptance of the work done under this contract shall fall within the months of December, January, February or March, then and in that case the said months of December, January, February and March, or such part thereof as the President may determine, will not be included in the computation of said period of six months.

Final certificate to control.

40 XLII. The action of the Engineer in Charge of Sewers, by which the Contractor is to be bound and concluded according to the terms of this contract, shall be that evidenced by said Engineer's final certificate, all prior certificates upon which eighty-five per centum (85%) payments may have been made being merely estimates, and subject to the corrections of such final cer-

EXHIBIT C-216 (*continued*):

tificate, which may be made without notice to the Contractor thereof, or of the measurements upon which the same is based.

85% payments.

10 XLIII. In case the amount of this contract, based on the Engineer's estimate and the contract prices, shall be five thousand dollars (\$5,000.00) or over, payment will be made to the Contractor by monthly installments of eighty-five Per Cent. (85%) of the estimated value of the work performed, provided the work is being prosecuted in conformity with the provisions of the contract, and in a manner satisfactory to the Engineer, in which case, however, the quantity returned shall be such that the amount paid will be fairly due and in accordance with the provisions and stipulations of this contract; provided, the amount of work done on each installment shall not be less than fifteen hundred dollars (\$1,500.00); and provided that The City may at 20 all times reserve and retain out of said installments, or any of them, all such sum or sums as by the terms hereof or any act of the Legislature of the State of New York, or of any ordinance of The City of New York, now in force, it is or may be authorized to reserve or retain; and provided that where the Contractor, although the lowest bidder in the gross calculation, is to receive unusual or extraordinary prices for any of the different items of the work when considered separately, nothing herein contained shall be construed to affect the right of the President to determine 30 the amount that may be due from time to time, not necessarily by the prices agreed upon in this contract, but by causing an estimate to be made of the value of the work done, taking as a basis of the calculations the whole amount of money that will have become due, according to the terms of this contract, when the whole work shall be completed.

If abandoned, etc.

Contract may be declared abandoned.

40 Completion of work to be undertaken by President.

XLIV. The Contractor hereby agrees that if the work to be done under this contract shall be abandoned by him, or if this contract shall be assigned or the work sublet by him otherwise than as provided by the terms hereof, or if at any time the Engineer shall be of the opinion, and shall so certify, in writing to the President that the performance of the contract is un-



EXHIBIT C-216 (*continued*):

necessarily or unreasonably delayed, as evidenced by its actual rate of progress compared with the required progress (see Section XIV); or that the Contractor is wilfully violating any of the conditions or covenants of this contract or the specifications thereof, or is executing the same in bad faith, or not in accordance with the terms thereof, or that the work is not fully completed within the time designated in this contract for its completion, the President may declare this contract or any part thereof abandoned and notify the Contractor to discontinue all work or any part thereof under this contract, by written notice to be served upon the Contractor either personally, or by leaving said notice at his residence, or with his agent in charge of the work, or in the manner provided in Section XLV, or with any employee found on the work, and the Contractor agrees to thereupon discontinue said work or such part thereof, and he further agrees that the President shall thereupon have the power to contract for the completion of the contract in the manner prescribed by law, or to place such and so many persons as he may deem advisable, by contract or otherwise, to work at and complete the work declared abandoned and to use such plant and materials as he may find upon the line of the work, and to procure other plants and materials for the completion of the same, and to charge the expense of said plant, labor and materials to the Contractor; and it is further agreed that the expense so charged shall be deducted and also liquidated damages for delay in the completion of the work, as provided in Clause XV shall be deducted and paid by the City out of such moneys as would have been payable to the Contractor if he had completed the work. And in case such expense and liquidated damages shall exceed the sum which would have been payable under this contract, if the same had been completed by the Contractor, he shall and will pay the amount of such excess to the City; and in case such expense and liquidated damages shall be less than the sum which would be payable to the Contractor, if the Contractor had completed the contract, he shall be entitled to the difference, subject to all the other terms, covenants and conditions of this contract. Upon the President signing the aforesaid written notice to the Contractor to discontinue all or any part of the work, he shall have the right to take immediate possession on behalf of The City of the plant and materials upon the line of the work, without notice to the Contractor, for the purpose hereinbefore specified, and no such plant or materials shall be removed so long as the same may be wanted for the work. In the computation of liquidated damages

EXHIBIT C-216 (*continued*):

10 for delay in completion of the work, the time taken by The City  
or given to the new Contractor to whom the contract for the com-  
pletion of this contract may be awarded, as well as the time  
taken in advertising and awarding such contract, shall be added  
to the time consumed by the Contractor under this contract up to  
the date when The City shall take the action provided in this  
clause, and from such total there shall be deducted the time  
20 allowed to the Contractor for completing the work under this  
contract. When any particular part of the work is being carried  
on by The City by contract or otherwise under the provisions of  
this clause of the contract, the Contractor agrees to continue the  
remainder of the work in conformity with the terms of this con-  
tract and in such manner as in no wise to hinder or interfere with  
the persons or workmen employed, as above provided by The City  
by contract or otherwise to do any part of the work,  
or to complete the same under the provisions of this clause of the  
contract. In the event of the President undertaking to have per-  
formed the work or any part thereof under this clause of the con-  
tract, his certificate as to the amount of work done, cost, and of  
the excess cost, if any, of completing the work called for by this  
contract shall be binding and conclusive upon the Contractor, his  
assignees and his sureties.

Notice to Contractor.

30 XLV. It is agreed that the residence or place of business,  
given in the bid upon which this contract is founded, is hereby  
designated as the place where all notices, letters and other com-  
munications shall be served, mailed or delivered. It is further  
agreed that any notice, letter or other communication addressed  
to the Contractor and delivered at the above-named place, or  
deposited in a post-paid wrapper in any post-office box regularly  
maintained by the post-office, shall be deemed sufficient service  
thereof upon the Contractor. It is also further agreed that the  
place named may be changed at any time by an instrument in  
writing, executed and acknowledged by the Contractor and  
40 delivered to the President. It is also further agreed that nothing  
herein contained shall be deemed to proclude or render in-  
operative the service of any notice, letter or other communication  
upon the Contractor personally.

Labor Law.

XLVI. The Contractor agrees that he will comply with  
the provisions of "The Labor Law." He further agrees that no

EXHIBIT C-216 (*continued*) :

laborer, workman or mechanic in the employ of the Contractor, sub-contractor or other person doing or contracting to do the whole or a part of the work contemplated by the contract, shall be permitted or required to work more than eight hours in any one calendar day, except in cases of extraordinary emergency, caused by fire, flood or danger to life or property; that the wages to be paid for a legal day's work or upon any material to be used thereon shall not be less than the prevailing rate for a day's work in the same trade or occupation in the locality where such public work is being constructed. Each such laborer, workman or mechanic shall receive the prevailing rate of wages. This contract shall be void and of no effect, unless the person or corporation, making or performing the same shall comply with the provisions of section 14 of the Labor Law.

No estoppel.

20 XLVII. The City shall not, nor shall any Department or officer thereof be procluded or estopped by any return or certificate made or given by the President, any Engineer or other officer, agent or appointee of The City under any provision of this contract from at any time (either before or after the final completion and acceptance of the work and payment therefor pursuant to any such return or certificate) showing the true and correct amount, quality and character of the work done and materials furnished by the Contractor, or any other person under this contract, or from showing at any time that any such return or certificate is untrue and incorrect or improperly made in any particular, or that the work and materials, or any part thereof do not in fact conform to the contract; and The City shall not be precluded or estopped, notwithstanding any such return or certificate or payment in accordance therewith, from demanding and recovering from the Contractor such damages as it may sustain by reason of his failure to comply with the contract.

Understanding of plans and specifications.

40 XLVIII. The Contractor hereby distinctly and expressly declares and acknowledges that, before the signing of this contract, he has carefully read the same, and the whole thereof, together with and in connection with the plan and specifications, and that he has made such examination of this contract and of said plan and specifications, and the location where said work is to be done, and such investigation of the work required to be done, and in regard to the material required to be furnished, as

EXHIBIT C-216 (*continued*):

to enable him to thoroughly understand the intention of the same, and the requirements, covenants, agreements, stipulations and restrictions contained in this contract and in said plan and specifications; and distinctly agrees that he will not hereafter make any claim or demand upon The City, based upon or arising out of any alleged misunderstanding or misconception on his part of the said requirements, covenants, stipulations and restrictions; and that any information given to the Contractor by the Engineer or others as to the quantities in the work, prior to, or during the progress of the work, shall have no bearing or effect whatsoever, upon the total amount of work to be paid for, in the final settlement.

Substitution of Sureties.

XLIX. Should the Comptroller at any time deem the sureties under the contract to be unsatisfactory he shall notify the Contractor to that effect and the Contractor shall when so notified forthwith submit in substitution new sureties acceptable to the Comptroller. No further payment shall be deemed due or shall be made until the new sureties shall qualify and be accepted by the Comptroller.

Chap. 478 Laws 1916.

L. This contract shall be void and of no effect unless the person or corporation making or performing the same shall secure compensation for the benefit of and keep insured during the life of this contract the employees engaged thereon, in compliance with the provisions of Chapter 41 of the Laws of 1914, known as the Workmen's Compensation Law, and acts amendatory thereof.

IN WITNESS WHEREOF, The President of the Borough of Queens has hereunto set his hand for and on behalf of The City of New York, and the Contractor has also hereunto set his or its hand the day and year herein first above written; and the President and Contractor have executed this agreement in triplicate; one part of which is to remain with the President, one other to be filed with the Comptroller of The City of New York, and the third to be delivered to the Contractor.

THE CITY OF NEW YORK,  
By FRANK X. SULLIVAN,  
President of the Borough of Queens.  
ANGELO PAINO,  
Contractor.

EXHIBIT C-216 (*continued*):

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

On this 10th day of June, 1920, before me personally came FANK X. SULLIVAN, to me known and known to me to be the Acting President of the Borough of Queens, of The City of New York, the person described as such in and who as such executed the foregoing instrument, and he acknowledged to me that he executed the same as said Acting President for the purposes therein mentioned.

PETER J. HANCK,  
Notary Public,  
Queens Co., N. Y.

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

On this 9th day of June, 1920, before me personally came ANGELO PAINO, to me known and known to me to be the same person described in and who executed the foregoing instrument, and he acknowledged to me that he execute the same for the purposes therein mentioned.

PETER J. HANCK.  
Notary Public,  
Queens Co., N. Y.

KNOW ALL MEN BY THESE PRESENTS, That we ANGELO PAINO, hereinafter called the "Contractor," and AETNA CASUALTY & SURETY CO., MARYLAND CASUALTY CO., U. S. FIDELITY and GUARANTY CO. and NEW AMSTERDAM CASUALTY CO., hereinafter called the "Surety," are held and firmly bound unto The City of New York, in the sum of ONE HUNDRED SIXTY FIVE THOUSAND DOLLARS, lawful money of the United States of America, to be paid unto THE CITY OF NEW YORK, or to its certain attorneys, successors or assigns; for which payment, well and truly to be made, we and each of us do bind ourselves and our several and respective heirs, executors, administrators and assigns, jointly and severally, firmly by these presents.

Signed, sealed and dated this 9th day of June, 1920.

WHEREAS, The above bounden Contractor, by an instrument in writing under his hand, and bearing even date with these presents, one part whereof is hereto annexed, has contracted with The City of New York, by the President of the Borough of Queens,

EXHIBIT C-216 (*continued*):

to furnish all the labor and materials, and to excavate for, build, construct and in all respects complete sewer, etc., in CORONA AVE. from ALSTYNE AVE. to JUNCTION AVE., etc., Second Ward, together with all the work incidental thereto, as is fully and at large set forth and described in the contract aforesaid.

10 NOW, THEREFORE, The condition of the above obligation in such that if the said above bounden Contractor and its, his or their heirs, executors, administrators and assigns, or any or either of them, shall well and truly, and in a good, sufficient and workmanlike manner, perform or cause to be performed the said contract, and each and every of the covenants, promises, agreements and provisions therein contained on his part to be performed, and complete the same within the period therein stipulated, and in each and every respect comply with the conditions therein contained, then this obligation to be void; otherwise, to remain in full force and virtue.

20

ANGELO PAINO [L. S.]  
Contractor.

United States Fidelity and Guaranty Co.

By C. P. MARSAC,  
Attorney-in-fact.

Attest: JOHN F. PLUMMER, [L.S.]  
Attorney-in-fact.

30

New Amsterdam Casualty Company,

By THOMAS L. PURDUM,  
Vice President.

Attest: WM. L. MCGINTY,  
Ass't Secretary.

The Aetna Casualty and Surety Company,

By Llewellyn H. GROSSMAN,  
Resident Vice-President,

40

Attest: LEO R. LOGAN,  
Resident Ass't Secretary.

Maryland Casualty Company,

By E. B. McCONNELL,  
Attorney-in-fact.

EXHIBIT C-216 (*continued*):

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

10 On this 9th day of June, 1920, before me personally came ANGELO PAINO, to me personally known and known to me to be the same person described in and who executed the foregoing bond or obligation, and severally acknowledged that he executed the same.

PETER J. HANCK,  
Notary Public,  
Queens Co., N. Y.

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FUNDS

20 PRESIDENT'S CERTIFICATE

It is hereby certified that the estimated cost of the work and materials required by the within contract is FIVE HUNDRED NINETY TWO THOUSAND FOUR HUNDRED FORTY 00/100 DOLLARS (\$592,440.00), and is chargeable to the Street Improvement Fund of the City of New York.

FRANK X. SULLIVAN,  
President of the Borough of Queens.

30 THE CITY OF NEW YORK, June 10th, 1920.

EXHIBIT C-216 (continued):

SPECIFICATIONS

TRENCHES

Length of trench.

- 10        1. Unless otherwise directed or permitted not more than 200 feet of any trench in advance of the end of the built sewer shall be open at any time, and unless written permission to the contrary is given, the trench shall be excavated to its full depth for a distance of at least 20 feet more than the minimum length of sewer permitted to be laid in it. (See paragraphs 127 and 154.) Trenches for house connection drains shall not be open on both sides of the street at the same time, unless permission has previously been given to close the street. Unless otherwise directed each trench for basin connections and house connection  
20 drains shall be fully excavated for its entire length before any pipes are laid therein.

Sheeting and bracing.

- 30        2. Where necessary the sides of the trenches and excavations shall be supported by adequate sheeting and bracing. Steel sheeting may be used only where directed. Sheeting and bracing will be paid for only when left in place by written order, in which event the amount left in place will be paid for at the contract price for such material. Unless specially  
permitted sheeting against which concrete is placed shall not be removed and will not be paid for. The Contractor will be held accountable and responsible for the sufficiency of all sheeting and bracing used, and for all damage to persons or property resulting from the improper quality, strength, placing, maintaining or removing of the same.

Sheeting in soft material.

- 40        3. Where the material to be excavated is of such a character as to render it necessary, the sheeting shall be closely driven and to such depth below the bottom of the sewer as may be directed.

Tunneling.

4. All work shall be done in open trenches or excavations; no tunneling shall be done except with the consent of the Engineer.



EXHIBIT C-216 (*continued*):

Trees and stumps.

5. The Contractor shall grub and clear the surface over the trenches and excavations of all trees and stumps and remove the same from the work.

Material to be disinfected.

10 6. If required, any or all of the excavated material shall be satisfactorily disinfected or deodorized or immediately removed from the work.

Roadway, sidewalks, etc., to be kept clear.

20 7. The excavated material and materials of construction shall be so deposited, and the work shall be so conducted as to leave open and free for traffic all crosswalks, a space on each sidewalk not less than one-third the width of such sidewalk and unless permission is given to the contrary a roadway not less than 8 feet wide for the free passage of vehicles. Street hydrants, water gates, fire alarm boxes and letter boxes shall be kept accessible for use. During the progress of the work the Contractor shall maintain such crosswalks, sidewalks and roadways in satisfactory condition, and the work shall at all times be so conducted as to cause a minimum inconvenience to public travel, and permit of safe and convenient access to private and public property along the line of the work.

30 Surplus material.

8. If all of the excavated material cannot be stored on the street in such a manner as to maintain the traffic conditions hereinbefore specified, the surplus shall be removed from the work and stored. After the construction of the sewer, so much of this material as is of satisfactory quality and necessary for the purpose shall be brought back and used for backfilling the trench.

Fence.

40 9. Where necessary a suitable fence shall be placed along the sides of the trench to keep the street safe for traffic.

Temporary bridges.

10. Where any crosswalk is intersected by the trench, it shall be temporarily replaced by a substantial timber bridge not less than 3 feet wide, with side railings. Where required, suitable

EXHIBIT C-216 (*continued*):

temporary bridges for vehicles shall be provided and maintained across the trench.

Disposal of water from trenches.

- 10 11. The Contractor shall at all times during the progress of the work keep the trenches and excavations free from water. The water from the trenches and excavations shall be disposed of in such a manner as will not cause injury to the public health, nor to public or private property, nor to the work completed or in progress, nor to the surface of the streets, nor cause any interference with the use of the same by the public.

Cost to be covered.

- 20 12. The cost of all labor required to be done and all materials required to be furnished in the performance of all the work specified in paragraphs 1 to 11 inclusive, except as otherwise provided, shall be covered by all the contract prices for all the items for which there are contract prices.

EARTH EXCAVATION.

13. Earth excavation shall include the removal of all material other than rock as hereinafter defined.

Width of trench for sewers, etc.

- 30 14. The minimum widths of trenches in earth, for pipe sewers, basin connections, house connection and other drains not over 18 inches in diameter, shall be such as to give a clearance inside the sheeting of 8 inches on each side of the pipe, and for those of larger diameters 10 inches on each side of the pipe, exclusive of spurs and hubs; and all such trenches shall have a clear width equal to the maximum width of the cradles of the sewers to be laid in them, when such cradles are wider than the minimum widths herein specified. The minimum widths of trenches in earth, inside the sheeting, for other sewers shall  
40 be the greatest external width of the structures, including the necessary forms, to be built therein.

15. Where a riser, manhole or other appurtenance or the foundation therefor extends beyond the exterior lines of the sewer or its foundation, the minimum excavation in earth, required for the same shall be that contained in a prism with vertical sides

EXHIBIT C-216 (*continued*):

and a horizontal section equal to the smallest rectangle which will enclose such appurtenance and its foundation.

Excavation for Basin manholes, etc.

- 10 16. The minimum dimensions of the excavation in earth, for brick basin manholes and inlets, shall be such as to give a clearance inside the sheeting of 1 foot on all sides, above the foundation, but in all such cases the excavation shall be large enough to include for foundations for such structures shown on the plan. The excavation for concrete basin manholes and inlets chambers shall be of such dimensions as to permit the proper placing and removal of the necessary forms.

Depth of trenches.

- 20 17. The trenches shall be excavated to the depths required for the foundations of the sewers and appurtenances shown on the plan, and where the conditions are such as to make it necessary, to such additional depths as may be directed. Where pipe is laid without a cradle the bottom of the trenches shall be excavated to fit the lower third of the pipe, and excavations shall be made to receive the hubs. All irregularities in the bottoms of the trenches shall be filled up to the required grade with suitable material.

Cost to be covered.

- 30 18. The cost of all labor required to be done and all materials required to be furnished in the performance of all the work specified in paragraphs 15 to 17 inclusive, except as otherwise provided, shall be covered by all the contract prices for all the items for which there are contract prices.

ROCK EXCAVATION.

19. Rock excavation shall include the excavation and removal of the following materials:

- 40 (a) Rock which shall be determined to be of such a character as to warrant its removal by blasting, in order to insure the prompt and proper prosecution of the work.

(b) Boulders and pieces of rock, masonry in mortar and concrete, each of which contains 1 cubic yard or more, except the masonry and concrete of old sewers and their appurtenances.

EXHIBIT C-216 (*continued*):

20. Pieces of rock, masonry, concrete or boulders, which fall or slide into the trench from beyond the lines thereof, as herein defined, will not be measured, and the cost of the removal of the same shall be covered by all the contract prices for all the items for which there are contract prices.

Width of trench.

10 Rock excavation for basin manholes, etc.

20 21. The required width of trench in rock for pipe sewers, basin connections, house connection and other pipe drains will be such as to give a clearance of 1 foot on each side of the pipe, exclusive of spurs and hubs; the required width of trench in rock, for other sewers and drains, will be such as to give a clearance of 1 foot on each side of the structure to be built therein at its greatest external width. Where a riser, manhole or other appurtenance, or the foundation therefor, extends beyond the exterior lines of the sewer or its foundation, the excavation in rock required for the same will be that contained in a prism with vertical sides and a horizontal section 1 foot wider on each side than the smallest rectangle which will enclose such appurtenance and its foundation. The required dimensions of the excavation in rock, for basin manholes, inlets and chambers will be such as to give a clearance of 1 foot on all sides above their foundation.

Depth of trench.

30 22. The rock shall be excavated to the depths required for the cradles and foundations of the structures as shown on the plan.

Measurement.

23. The volume of rock to be paid for will be that contained in prisms with vertical sides and of such dimensions as to give the widths and clearances hereinbefore specified from the bottoms of the trenches, as specified, to the surface of the rock.

40 Rock stripped.

24. Rock shall be stripped in sections, which, unless otherwise permitted, shall be not less than 50 feet in length, and the Engineer shall then be notified in order that he may measure the same. Rock excavated or blasted before such measurement is made will not be paid for.

EXHIBIT C-216 (*continued*):

Excavation for branches.

25. Wherever a branch for a proposed sewer or extension of a sewer is built in rock, the required trench shall be excavated for a distance of not less than 5 feet beyond the end of such branch, in the direction of the proposed sewer or extension.

10 **Blasting.**

26. All blasting operations shall be conducted in strict accordance with the City ordinances and regulations relative to rock blasting and the storage and use of explosives. Any rock excavation within 5 feet of water main less than 36 inches in diameter, and within 10 feet of a water main 36 inches or more in diameter, shall be done with very light charges of explosive, or if directed, without blasting, and the utmost care shall be used to avoid breaking or disturbing the main.

20 **Exposed structures to be protected.**

27. All exposed sewers, manholes receiving basins and other structures shall be carefully protected from the effects of blasts. Any damage done to such structures shall be promptly repaired by the Contractor at his own expense.

Price to cover.

30 28. The contract price for rock excavation shall cover the cost of all labor and materials required to excavate and remove all rock as specified, and without regard to its subsequent use.

**BACKFILLING.**

**Backfilling around sewers, etc.**

40 29. Unless otherwise specified or directed, all trenches and excavations shall be backfilled immediately after the structures are built therein. For a depth of at least 2 feet over the top of the sewer, basin connection, house connection or other drain, the material for backfilling trenches as excavated, shall be clean earth, sand or rock dust. It shall be carefully deposited in uniform layers not exceeding 6 inches in depth, and unless otherwise permitted, each layer shall be carefully and solidly tamped with appropriate tools in such a manner as to avoid injuring or disturbing the completed work.

EXHIBIT C-216 (*continued*):

Backfilling for remainder of trench.

30. Backfilling for the remainder of the trenches as excavated, shall be approved material free from organic matter and containing no stone over 10 inches in their largest dimensions. Any stones shall be so distributed through the mass that all interstices are filled with the fine material. This backfilling shall be deposited as directed, and unless otherwise permitted, shall be spread in layers and solidly tamped.

Backfilling around basin manholes, etc.

31. Backfilling within 2 feet of manholes, house connection drains, basin manholes, inlets and other structures shall be of the same quality as that specified in paragraph 29. It shall be uniformly deposited on all sides and unless otherwise permitted, solidly tamped in such a manner as to avoid injuring the structures or producing unequal pressures thereon.

Puddling.

32. Backfilling shall, if required, be flooded or puddled with water as the work progresses, instead of being tamped.

33. When sheeting is drawn, all cavities remaining in or adjoining the trench shall be solidly filled. When sheeting is left in place all cavities behind such sheeting shall be solidly filled as directed.

30 Deficiency of filling.

34. Unless otherwise shown on the plan, the trenches shall be backfilled to the height of the surface of the ground as it existed at the commencement of the work. Should there be a deficiency of proper material for the purpose, the Contractor shall furnish and place such additional material as may be required.

Temporary bulkheads.

- 40 35. For retaining the backfilling only temporary bulkheads will be allowed over sewers, basin connections and drains. Such bulkheads shall not be of stone, and they shall be removed as the trenches are backfilled.

EXHIBIT C-216 (*continued*):

Curves, branches, etc., not to be covered.

36. Sewers built on curves, also drains, basin connections, house and sewer connections and intersections, ends of sewers and branches shall not be covered until the Engineer shall have inspected, measured and located the same, and given permission to backfill the trenches over them.

10 Removal of surplus material.

37. As the trenches are backfilled, the Contractor shall remove all surplus material and regrade and leave free, clear and in good order all roadways and sidewalks. During the progress of and until the final acceptance of the work, he shall maintain in good and safe condition the surface of the street over all the trenches, and promptly fill all depressions over and adjoining the trenches caused by settlement of the backfilling. In case of failure or neglect on the part of the Contractor to comply with the requirements of this paragraph within 24 hours after the service upon him of a written notice so to do, the President may furnish all materials and do all work required, and the cost thereof will be charged to the Contractor and deducted from any moneys due or to become due him under this contract. All surplus material or any part thereof shall, if required, be deposited as directed on the streets and avenues within the limits of this contract where the same are below grade, and in such a manner as to leave the surfaces of the filled material even.

20  
30 Cost covered.

38. The cost of all labor required to be done and all materials required to be furnished in the performance of all the work specified in paragraphs 30 to 37, inclusive, shall be covered by all the contract prices for all the items for which there are contract prices.

CEMENT.

40 39. All cement used in the work shall be a high grade Portland cement of a well-established and approved brand. It shall be the product obtained by finely pulverizing clinker produced by calcining to incipient fusion, an intimate mixture of properly proportioned argillaceous and calcareous substances, with only such additions subsequent to calcining as may be necessary to control certain properties. Such additions shall not exceed 3 per cent. by weight, of the calcined product.

EXHIBIT C-216 (*continued*):

Specific gravity; weight.

40. The cement shall have a specific gravity of not less than 3.10 after being thoroughly dried at 212° F. It shall weigh not less than 380 pounds net, to the barrel, 4 bags of 95 pounds each being considered equivalent to a barrel.

10 Fineness.

41. The cement shall be dry, finely ground, of uniform color and free for lumps. It shall leave a residue of not more than 8 per cent. by weight, when passed through a No. 100 sieve, and not more than 25 per cent. when passed through a No. 200 sieve.

Tensile strength.

20 42. Standard briquettes shall develop within the periods specified, tensile strength not less than that shown in the following table.

Neat Cement:

24 hours .....	175 pounds per sq. in.
7 days (1 day in moist air, 6 days in water) .....	500 pounds per sq. in.
28 days (1 day in moist air, 27 days in water) .....	600 pounds per sq. in.

30 Mortar consisting of 1 part cement and 3 parts of Standard Ottawa Sand, by weight:

7 days (1 day in moist air, 6 days in water) .....	180 pounds per sq. in.
28 days (1 day in moist air, 27 days in water) .....	225 pounds per sq. in.

40 The average of the tensile strengths developed at each age by the briquettes in any set made from one sample will be considered the strength of the sample at that age, excluding any results that are manifestly faulty. The average strength of briquettes at 28 days shall be greater than the average strength at 7 days, and if tests are made after 28 days the strength shall be not less than that at 28 days.



EXHIBIT C-216 (*continued*):

Soundness.

43. Pats of neat cement when tested for constancy of volume or soundness shall remain firm and hard and show no sign of checking, cracking, distortion or disintegration.

Setting.

- 10 44. Unless otherwise required, the cement shall not develop initial set in less than 30 minutes, and shall develop final set in not less than 1 hour nor more than 10 hours. Quick-setting cement of an approved brand shall, if required, be kept on the work in sufficient quantity to provide for any contingency requiring the use of the same.

Testing.

- 20 45. The cement will be subjected to such tests as the Engineer may deem necessary, and such tests will be made in accordance with the methods recommended by the Committee on Uniform Tests of Cement of the American Society of Civil Engineers, except that the time of setting will usually be determined by means of the Gillmore needles. In case of dispute as to the time of setting, this test will be made by means of the Vicat needle.

Retesting.

- 30 46. Any cement which shall have been kept in storage after testing for a sufficient time to warrant it, shall be retested. Any prior acceptance shall be considered void and the acceptance or rejection of the cement shall depend upon the results of the latest tests.

Approval of brand may be rescinded.

47. The Engineer may at any time rescind the approval of any brand of cement that develops objectionable qualities.

- 40 Samples.

48. The Contractor shall notify the Engineer of the arrival of cement on the work, and furnish such facilities as may be required for obtaining samples for testing. Samples will be taken so as to fairly represent the material. The number of packages sampled and the quantity to be taken from each will depend upon the importance of the work and the number of tests to be made.

EXHIBIT C-216 (*continued*):

Delivery and storing.

49. Cement shall be delivered on the work in barrels or approved bags of uniform size, with the brand and the name of the manufacturer plainly marked thereon; it shall be immediately stored in a dry place and carefully protected from the weather. A sufficient stock of cement shall be kept on the work in advance of the necessity for its use to permit of the making of the required seven day tests. Except by written permission, no cement shall be used before it has been tested and accepted, and any concrete or masonry which may have been made under such permission with cement that is subsequently rejected, shall be removed and replaced by the Contractor, at his own expense, with concrete or masonry made of accepted cement.

Cost to be covered.

50. The cost of furnishing, storing and incorporating cement in the work, and the cost of samples required for testing, shall be covered by the contract prices for the structures or classes of work in connection with which the cement is used.

MORTAR.

51. All mortar used in the work, unless otherwise specified, shall be composed of 1 volume of cement, as in the original package, and  $2\frac{1}{2}$  volumes of sand. Where required, mortar of cement and sand in other proportions or mortar of neat cement shall be used as directed.

Sand.

52. Sand shall be composed of grains of clean sharp quartz, not softer than hard limestones. It shall be moderately coarse and preferably made up of grains of varying size not exceeding one-quarter ( $\frac{1}{4}$ ) inch producing a mass with low percentage of voids. It shall not contain, in all, more than five (5%) per cent, by volume of clay, loam, mica, scales, silt, or other objectionable inorganic matter, nor more than one (1%) per cent. of organic matter.

Tests may also be made of the cement and sand used in the proportions of one (1) part cement to three (3) parts sand, and these tests must show at least 70 per cent. of the strength of the mortar made with the cement and standard sand, or the sand may be rejected.

EXHIBIT C-216 (*continued*):

Mixing.

53. Mortar shall be mixed in a suitable box or on a tight platform, and never upon the pavement or ground. The cement and sand shall be thoroughly mixed dry, until the mixture has a uniform color. Clean, fresh water shall then be added and the mass worked until a mortar, which is uniform and of the required consistency is produced. The mortar shall be mixed in no greater quantity than is required for the work in hand, and any that has set sufficiently to require retempering shall not be used.

Freezing weather.

54. The mixing and use of mortar in freezing weather shall be subject to the same requirements as hereinafter specified for mixing and placing concrete under similar conditions.

Cost covered.

55. The cost of all labor and materials required to furnish and place the mortar in the work, as specified, shall be covered by the contract price for the structure or class of work in connection with which the mortar is used.

CONCRETE.

56. Class A concrete shall be made of 1 part of cement, 2 parts of sand and 4 parts of broken stone or gravel.

Class A concrete.

57. Broken stone for Class A concrete shall be approved trap rock, dense fine-grained blue limestone or granite broken into roughly cubical or pyramidal fragments. Broken stone which contains dust, loam, clay, organic matter or other improper substances shall not be used. Broken stone for Class A concrete shall be the run of the crusher that will pass through a screen with circular openings  $1\frac{1}{4}$  inches in diameter and shall be retained on a screen with openings  $\frac{1}{8}$ -inch in diameter. Gravel shall be equal in quality to North Shore Long Island gravel, shall be clean and sound, and shall be of the sizes herein specified for broken stone.

Measuring ingredients.

58. For the purpose of determining the proportions of the materials for concrete, each bag of cement will be considered as

EXHIBIT C-216 (*continued*):

containing 9/10 cubic foot; and the other ingredients shall be measured by an approved method.

Water.

59. Only clean fresh water shall be used for concrete.

Mixing.

10

60. Unless permitted to be mixed by hand, concrete shall be mixed in approved mechanical batch mixers, so constructed and operated that the ingredients of the concrete may be accurately measured and thoroughly mixed. Enough water shall be added during the mixing to bring the concrete to the required consistency, which generally shall be such that the concrete may be poured into place without causing the separation of the stones from the mortar. When concrete is mixed by hand the broken stone or gravel shall be spread on a tight platform in a bed about 20 6 inches deep and shall be thoroughly wetted. The cement and sand shall be mixed dry on a suitable platform, until the mixture has a uniform color. This mixture shall be spread evenly on the bed of wet stone, water added, and the entire mass turned until each piece of stone is entirely coated with mortar and a concrete produced which is uniform and of the consistency herein specified for machine mixed concrete. When a comparatively dry concrete is required it shall be mixed to such consistency as may be directed.

30 Placing concrete.

40 61. Concrete shall be mixed only in such quantity as is required for the work in hand, and any that has set sufficiently to require retempering shall not be used. Any concrete in which the water has separated from the solid matter shall be satisfactorily remixed before being placed. The concrete shall be so deposited in the work as to prevent the separation of the stone from the mortar. It shall be deposited in as nearly a continuous operation as practicable and shall be tamped or spaded with suitable tools to expel air bubbles and produce a dense and compact mass. When the operation of placing concrete is interrupted the concrete in the work, shall, if required, be confined by suitable temporary forms or bulkheads. When concrete is to surround reinforcing metal, structural steel, or wire netting, it shall be so deposited as to work closely around such material. When a comparatively dry concrete is used it shall be deposited in

EXHIBIT C-216 (*continued*):

horizontal layers not exceeding 6 inches in depth and solidly tamped.

Joining old and new concrete.

- 10 62. When fresh concrete is to be laid on or adjoining concrete already set, the surface of the latter shall be thoroughly cleaned, washed, and roughened, and coated with a grout of neat cement before the fresh concrete is deposited.

Forms and centres.

- 20 63. The Contractor shall provide all necessary forms and centres for shaping concrete wherever used. They shall be true to the required shapes and sizes, strong enough and so secured in place as to withstand all operations incidental to placing the concrete, and watertight, and the faces against which the concrete is to be placed shall be satisfactorily smooth and clean. Timber used in forms and centres for exposed faces of concrete shall be seasoned stock. Unless otherwise permitted, those surfaces of forms and centres which will be in contact with concrete shall be coated as directed with an approval lubricant; when no lubricant is required such surfaces shall be thoroughly wetted just before the concrete is placed.

Removal of forms and centres.

- 30 64. The forms and centres shall be left in place until the concrete has set sufficiently to permit their removal without danger to the structure, and until so much of the backfilling or embankment as may be directed has been put in place. No forms or centres shall be struck or removed until permission to do so has been given.

Exposed surfaces.

- 40 65. Special care shall be used to secure a smooth and uniform finish to the surfaces of concrete which will be exposed in the completed structure. Immediately after the removal of the forms such surfaces, if uneven, shall be rubbed smooth to a uniform and satisfactory finish, all exposed edges of concrete shall be neatly rounded as directed, and if any voids, projections or other imperfections be found, such defects shall at once be corrected by tooling, cutting out and filling with mortar, or otherwise, as directed.

EXHIBIT C-216 (*continued*):

Depositing concrete under water.

66. Whenever it becomes necessary to place concrete under water, it shall be deposited by means of drop-bottom buckets or other approved method. Concrete so deposited shall be carefully spread without tamping.

10 Freezing weather.

67. In freezing weather, until the temperature falls to 24 degrees Fahrenheit the water used for concrete shall, if directed, be heated to an approved temperature, and if directed, one per cent. by weight of salt shall be added to the water for each degree Fahrenheit that the temperature of the air is below 32 degrees Fahrenheit. The other materials for the concrete shall be heated sufficiently to remove all frost and ice. No concrete shall be laid when the temperature of the air is below 24 degrees Fahrenheit.

20 Protection.

68. Concrete shall be allowed to set for such time as may be directed before being worked or walked upon, or before filling, backfilling or other material is placed upon or against it. It shall not be flooded with water until it has sufficiently set. Concrete shall be carefully protected from injury, from freezing and from the drying effects of the sun and wind by covering it with canvas, bagging, hay or other suitable and approved materials. Such protection shall be placed as soon as the concrete is in condition to receive it, and except in freezing weather, the covering as well as the concrete shall be kept wet for such time as may be directed.

Prices to cover

69. The cost of all concrete and the requirements specified in connection therewith shall be covered by the contract price for the structure in connection with which it is used.

BRICK MASONRY.

40

Quality of bricks.

71. All bricks used in the work shall be sound and hard burned throughout, and of uniform size and quality. If required the bricks shall be culled immediately after they are brought on the work and all bricks which are warped, cracked or of improper quality shall be at once removed. The proportion of bats per-

EXHIBIT C-216 (*continued*):

mitted will be determined according to the character and location of the work in which they are to be used.

How laid.

- 10 72. Bricks shall be satisfactorily wet when being laid and each brick shall be laid in mortar so as to form full bed, end and side joints in one operation. The joints shall be not wider than  $\frac{3}{8}$  inch, except when the bricks are laid radially, in which case the narrowest part of the joint shall not exceed  $\frac{1}{4}$  inch. The bricks shall be laid in a workmanlike manner, true to line, and wherever practicable the joint shall be carefully struck and pointed on the inside. Brickwork shall be laid with a satisfactory bond, and as it progresses shall be racked back in courses, unless otherwise permitted.

Protection.

- 20 73. All fresh brickwork shall be carefully protected from freezing and from the drying effects of the sun and wind, and if required, it shall be sprinkled with water at such intervals and for such a time as may be directed. Brickwork shall be protected from injuries of all sorts, and all portions which may become damaged or may be found defective shall be repaired, or if directed, be removed and rebuilt.

Freezing weather.

- 30 74. In freezing weather bricks shall be heated sufficiently to remove all ice and frost.

Cost of Brick Masonry.

75. The cost of all brick masonry and the requirements specified in connection therewith shall be covered by the contract price for the structure in connection with which it is used.

STEEL REINFORCEMENT BARS.

Shape.

- 40 90. Steel bars for reinforcing concrete shall be of such shape as to afford an approved mechanical bond with the concrete at frequent intervals and to insure intimate contact between the steel and concrete. Plain bars may be used only when shown on the plan.

EXHIBIT C-216 (*continued*) :

Samples.

91. The Contractor shall indicate the type of bars proposed to be used, and if required shall furnish samples thereof, and he is cautioned not to place the order for the bars until the type has been approved.

10 Size.

92. Each bar shall have a net cross sectional area equivalent to that designated on the plan or required, or it shall be the commercial size of the approved type of bar having a net cross sectional area next larger than that designated or required.

Variation in weight.

93. Reinforcement bars will be rejected if their actual weight varies more than 5 per cent. from their theoretical weight as shown by the manufacturer's tables.

Quality.

94. All steel for reinforcement bars shall be made by the open hearth process and shall conform to the latest revised Standard Specifications for Steel Reinforcement Bars adopted by the American Society for Testing Materials, and such tests as may be required, shall be made in accordance therewith, and at the places hereinafter specified. The chemical and physical properties of the steel shall be as follows :

30

Properties Considered	Structural Steel Grade		Cold Twisted Bars
	Plain Bars	Deformed Bars	
Phosphorus, max.			
Bessemer .....	0.10	0.10	0.10
Open Hearth .....	0.05	0.05	0.05
Ultimate Tensile Strength, pounds per sq. in. ....	55,000-70,000	55,000-70,000	Recorded only
Yield Point, minimum pounds per sq. in. ....	33,000	33,000	55,000
Elongation, minimum per cent. in 8 inches .....	1,400,000	1,250,000	5 per cent.
	tens. str.	tens. str.	
Cold bend without fracture:			
Bars under ¼ in. in diam. or thickness .....	180° to diam. of 1t.	180° to diam. of 1t.	180° to diam. of 2t.
Bars ¼ in. in diam. or thickness and over ...	180° to diam. of 1t.	180° to diam. of 2t.	180° to diam. of 3t.

40

t: Nominal thickness or diameter of bar.



EXHIBIT C-216 (*continued*):

95. Reinforcement bars shall be rolled from billets of new steel; they shall be straight and free from seams, flaws, cracks and imperfections of all kinds.

96. Test pieces 18 inches long may be cut from any of the bars delivered on the work, and the failure of any test piece to meet the specified requirements, or the failure of any bar when  
10 being bent will be sufficient cause for the rejection of all steel from the melt from which the test piece or bar was made.

Delivery and protection.

97. Bars shall be delivered in bundles, to each of which shall be securely wired a metal tag with the number of the melt from which the bars were made stamped thereon. The bars shall be protected at all times from mechanical injury and from the weather and when placed in the work they shall be free from  
20 dirt, scale-rust, paint and oil. Bars which are not to be embedded in concrete within a short time after being placed in the work shall, if directed, be immediately coated with a thin grout of equal parts of cement and sand.

Cutting and bending.

98. The bars shall be bent to the shapes shown on the plan and in conformity with approved templets. When bars are cut and bent on the work, the Contractor shall employ competent men and shall provide the necessary appliances for the purpose.

30 Placing.

99. All bars shall be as long as can be conveniently used, accurately bent, placed, spaced and jointed as shown or directed, and they shall be securely held in their required positions by approved devices until the concrete has been placed around them.

100. The cost of all steel reinforcement bars and the requirements specified in connection therewith shall be covered by the contract price for the structure in connection with which  
40 it is used.

WROUGHT IRON.

Quality.

101. Wrought iron shall be double rolled, tough, fibrous and uniform in quality. It shall be thoroughly welded in rolling and be free from surface defects. It shall have an ultimate tensile

EXHIBIT C-216 (*continued*) :

strength of at least 48,000 pounds per square inch, an elongation of at least 20 per cent. in 8 inches, and a fracture wholly fibrous. Specimens shall bend cold, with the fiber, through 180 degrees around a diameter equal to the thickness of the piece tested. When nicked and bent the fracture shall be at least 90 per cent. fibrous.

10 Galvanizing.

102. Exposed wrought iron shall be thoroughly and uniformly galvanized.

103. The cost of all wrought iron and the requirements specified in connection therewith shall be covered by the contract price for the structure in connection with which it is used.

IRON CASTINGS.

20 Quality.

104. Iron castings shall be of the best foundry pig iron, gray, tough and free from cold shuts, blow holes and other imperfections. The weight shall be conspicuously painted by the manufacturer with white oil paint on each casting. The castings shall be sound, clean and neatly finished. Where required, castings shall be thoroughly coated with coal tar pitch varnish.

Cost covered.

30 105. The cost of all labor and materials required to furnish coat and place the castings as specified, shall be covered by the contract price for the structure or class of work in connection with which they are used.

TIMBER SHEETING.

Quality, placing, etc.

40 110. Timber sheeting and the rangers and braces for the same shall be of a satisfactory quality of timber and of sufficient size and strength to adequately support the sides of the trenches and excavations. Sheeting shall be driven in such a manner as to avoid cracking and splitting, and if required for the proper prosecution of the work, shall be tongued and grooved.

When paid for.

111. Timber sheeting will be paid for as such only when left in place by written order. When sheeting is left in, so much

EXHIBIT C-216 (*continued*):

of it below the surface of the ground as may be directed shall be cut off.

**Measurement.**

10 112. The amount of timber sheeting to be paid for as such will be all timber sheeting, rangers and braces left in place by written order, and will not include sheeting, dangers and braces left in place without such order, not sheeting left in place because concrete is placed against it, nor that part of the sheeting that extended above the ground after having been driven, the cost of all of which shall be covered by all the contract prices for all the items for which there are contract prices. Inclined piling or planking at the bottom of a trench, if used to prevent the caving in of the excavation and in such a position that it cannot be drawn, shall be paid for at the price bid for sheet piling.

20 **Price to cover.**

113. The contract price for timber sheeting shall cover the cost of all labor and materials required to furnish, place and cut off the sheeting, rangers and braces as specified, and shall also cover the cost of all excavation necessary to place the same

**CONCRETE SEWERS.**

(Type "A" or Sewer Department Standard)

30 **Inverts.**

40 122. Inverts of concrete sewers shall be formed between transverse templets and shall be screeded. The templets shall be placed at such intervals as to divide the invert into sections of suitable size for convenient construction, and unless otherwise permitted, the concrete shall be deposited in alternate sections and allowed to set before the remaining sections are built. Unless otherwise shown on the plan, a layer of mortar not less than 1/2-inch thick shall be spread evenly and to a smoothly finished surface upon the concrete of the invert as soon as such concrete is in place. Where the radii of inverts are too short to permit screeding between templets, the inverts shall be shaped by means of suitable forms, which shall be removed as soon as the concrete has a sufficient set, and if required, the surfaces of inverts shall be floated or troweled to a smooth finish. The concrete for inverts shall be deposited continuously for their entire cross sections and for such longitudinal distances as may be convenient.

EXHIBIT C-216 (*continued*):

Inverts shall be carefully protected from all injury during progress of the work.

Side walls.

10 123. Concrete in the side walls of sewers shall be deposited continuously to the height directed and for such longitudinal distances as may be convenient.

Roof.

20 124. Concrete in the roofs of sewers shall be deposited continuously for the full depths and widths of the roofs and for such longitudinal distances as may be convenient. The outer surfaces of roofs shall be finished with an excess of mortar and left true and smooth. They shall be covered and protected as specified in paragraph 68, and such covering shall remain thereon until the backfilling or embankment is placed.

Bulkheads.

30 125. While being deposited the concrete for sewers shall be confined by temporary, vertical bulkheads placed at such intervals longitudinally as may be required for convenient working. The bulkheads shall be so designed as to give an approved shape to the end of the section of concrete under construction, shall be satisfactorily secured in place before the concrete is deposited, and shall remain in place until the concrete has set sufficiently to hold its shape.

Reinforcement.

126. Where shown on the plan concrete sewers shall be reinforced with metal of the dimensions and shapes shown, and of the quality and in the manner hereinbefore specified.

Minimum length of invert.

40 127. Unless otherwise permitted or ordered, not less than 16 feet of foundation or invert for concrete sewer shall be built at one operation.

Connections.

128. Connections and branches for lateral sewers and receiving basins shall be built in where shown on the plan or where directed. Such connections and branches shall be closed with bulkheads of brick masonry 8 inches thick unless otherwise shown

EXHIBIT C-216 (*continued*):

on the plan. All necessary openings and bulkheads for branch sewers shall be built in concrete sewers where shown on the plan or where directed.

Measurements.

10 129. The lengths of concrete sewers will be determined by horizontal measurements, along their centre lines. No deductions will be made on account of openings at branches and man-holes. The measurement of a branch concrete sewer will be made from the inner surface of the wall of the main sewer through which it enters. A reducer will be paid for at the contract price for the sewer at the larger end thereof.

Price to cover.

20 130. The contract prices for concrete sewers shall cover the cost of all necessary excavation (except rock); of furnishing, maintaining and removing all forms, centres, templets and temporary bulkheads; of all openings and bulkheads; of all back-filling; and of all labor and materials required to construct concrete sewers as shown by the normal sections on the plan and as specified.

TYPE "B"

CEMENT CONCRETE PIPE WITH REINFORCEMENT

30 131. Reinforced cement concrete pipe used shall be circular in section with or without that base and shall conform in dimensions as shown in table.

General dimensions of pipes and minimum test load per lin. ft. of pipe.

	Size	Minimum thickness	Minimum length in feet	Minimum joint length inches	Minimum test load per lin ft. of pipe
40	24"	3 "	4'	3 "	3350 Lbs.
	27"	3 1/2"	4'	3 "	3700 "
	30"	3 1/2"	4'	3 "	4400 "
	33"	4 "	4'	3 "	4600 "
	36"	4 "	4'	4 "	4800 "
	39"	4 "	4'	4 "	5200 "
	42"	4 1/2"	4'	5 1/2"	5600 "
	45"	4 1/2"	4'	5 1/2"	6100 "

EXHIBIT C-216 (continued):

	48"	5 "	4'	5½"	6600	"
	51"	5 "	4'	5½"	7050	"
	54"	5½"	4'	5½"	7500	"
	57"	5½"	4'	5½"	7750	"
	60"	6 "	4'	5½"	8000	"
	63"	6 "	4'	5½"	8400	"
	66"	6½"	4'	5½"	8800	"
10	72"	7 "	4'	5½"	9400	"
	78"	8 "	4'	5½"	10400	"
	84"	8 "	4'	5½"	11200	"
	90"	8½"	4'	5½"	12000	"
	96"	8½"	4'	5½"	12800	"
	102"	9 "	4'	5½"	13600	"
	108"	9 "	4'	5½"	14400	"

Testing pipe.

- 20 Reinforced concrete pipe shall not have less thickness of concrete, less length of pipe or joint than specified above, and two (2) pipes, for each size of sewer (reinforced concrete) shall be selected at random for a load test. These pipes shall be tested at the age of twenty-one (21) days and the total load specified per lineal foot shall be applied on the upper half of the sewer. The lower half of the pipe shall be supported in a cradle covering an arc 180 degrees. The pipe shall sustain these loads per lineal foot without hair-cracks of any kind whatsoever. Failure to fulfill the above requirements in the manner set forth will be sufficient cause for the rejection of the pipe. Testing of pipe shall be done by the contractor at his own expense and under the supervision and to the satisfaction of the Engineer-in-Charge of Engineering-Construction.
- 30

Material of pipe, cement, sand, stone or gravel.

- 40 132. Reinforced concrete pipe shall be constructed at the site of the work, in a shed if the weather requires, and the pipe shall be made by a manufacturer of established reputation, who shall have had previous experience in the manufacture of reinforced concrete pipe. The cement, sand, stone or gravel shall conform to the specifications of the Division of Sewers, Bureau of Engineering Construction. The forms shall be of steel and the reinforcing steel shall be held at all times against displacement in tamping. Concrete shall be an accurate 1—2—4 mix. Each pipe be stamped as made with date of manufacture.

EXHIBIT C-216 (*continued*):

Joints.

133. The pipe shall be of the bell and spigot type, the bell not to project beyond the body of the pipe, but to be flush with it. No pipe having a butt joint will be considered. No variation over one-half ( $\frac{1}{2}$ ) per cent from the hereinbefore mentioned dimensions will be permitted.

10 Jointing.

134. All joints to be made of 1:2 Portland cement mortar. The mortar shall be thoroughly trowelled in the recess in the interior of the pipe up to the spring line making a continuous invert. After this has been done, steel forms especially designed for the purpose shall be placed over and around the entire joint, and the mortar for sealing the arch portion grouted or poured through an opening in the crown of the pipe. Joints must be water-tight.

20 Laying pipe.

135. No pipe not marked with date of manufacture shall be laid or accepted. No pipe shall be laid in the trench which has not been seasoned for twenty-one (21) days, unless otherwise specially ordered by the Engineer-in-Charge of Engineering-Construction.

Steel for reinforcement.

30 136. Reinforcing steel may be either expanded metal deformed bars, or wire mesh, such as American Steel & Wire Company's, or Clinton Wire Cloth. For all sizes of reinforced concrete pipe, reinforcing shall be at distances not less than one (1) inch from the surface.

Spurs.

40 137. Reinforced concrete pipe shall have openings to receive spur and branch connection wherever required by the plans. The openings shall be made in a manner satisfactory to the Engineer-in-Charge of Engineering-Construction.

Disposal of water from trenches.

138. The provisions of paragraph No. 11 of the specifications shall be in full force and effect, even through reinforced concrete pipe shall be furnished on this contract.

EXHIBIT C-216 (*continued*) :

Rejection of defective pipe.

139. Pipe damaged from handling or any cause whatsoever, whether in or out of the trench, shall be replaced and removed from site of the work at the expense of the contractors.

10

VITRIFIED PIPE SEWERS.

Vitrified pipe.

140. Vitrified pipe sewers shall be built of shale or clay hub and spigot pipes with deep and wide sockets. They shall be thoroughly and perfectly burned, without warps, cracks or other imperfections, and shall be fully and smoothly salt-glazed over the entire inner and outer surfaces, except that the inside of the hub and the outside of the spigot may be unglazed for two-thirds the depth of the hub. On all other portions of the pipe the glazing shall completely cover and form an integral part of the pipe body. If not left unglazed the inside of the hub and the outside of the spigot shall be scored in 3 parallel lines extending completely around the circumference. When it is broken, vitrified pipe shall show dense and solid material, without serious cracks or laminations; it shall be of such toughness that it can be worked with a chisel and hammer, and when struck with a hammer, it shall have a metallic ring.

30 Identification marks.

141. Each pipe shall have clearly impressed on its outer surface the name of the manufacturer and of the factory in which it was made.

Shape and dimensions.

142. The sizes of the pipes are designated by their interior diameters. Each pipe shall be a cylinder with a circular section, and shall have a uniform thickness. The minimum lengths, thicknesses, depths of hubs and annular spaces for the respective sizes of pipe shall be as follows :

40



EXHIBIT C-216 (continued):

	Size	Length	Thickness	Depth of Socket	Annular Space
	6.....	2 feet	5/8 inch	2 1/2 inches	5/8 inch
	8.....	3 "	3/4 "	2 3/4 "	5/8 "
	10.....	3 "	7/8 "	2 3/4 "	5/8 "
	12.....	3 "	1 "	3 "	5/8 "
	15.....	3 "	1 1/4 "	3 "	5/8 "
10	18.....	3 "	1 1/2 "	3 1/4 "	5/8 "
	20.....	3 "	1 2/3 "	3 1/2 "	5/8 "
	22.....	3 "	1 5/6 "	3 3/4 "	5/8 "
	24.....	3 "	2 inches	4 "	5/8 "

Curves, bends, etc.

143. Where curved pipes are required they shall be furnished in either one-eighth or one-quarter bends of their respective sizes. Curved pipe, bends, siphons, and special pipe of the sizes and forms shown on the plan shall be furnished and laid, and unless otherwise provided they will be paid for at the contract prices for the corresponding sizes of vitrified pipe sewers.

Samples for testing.

144. Any or all of the following tests may be applied to samples selected from the pipe delivered on the work. For the purposes of making such tests as may be required the Contractor shall furnish and deliver when and where directed one length of pipe for each 200 feet of pipe sewer to be laid.

Crushing tests.

145. When supported at the bottom upon a knife edge one inch in width in such manner that an even bearing is provided throughout the whole length, exclusive of the bell, and pressure is applied at the crown uniformly through a similar knife edge, the various sizes of pipe shall withstand the following pressures:

	Diameter	Pressure
40	6 inches .....	900 lbs. per lin. ft.
	8 " .....	900 " " " "
	10 " .....	1,000 " " " "
	12 " .....	1,050 " " " "
	15 " .....	1,250 " " " "
	18 " .....	1,400 " " " "
	20 " .....	1,550 " " " "
	22 " .....	1,750 " " " "
	24 " .....	1,950 " " " "

EXHIBIT C-216 (*continued*):

Drop weight test.

146. When supported on a dry sand bed 2 inches deep, all pipe shall withstand without cracking the impact from 2 blows of a cast iron ball weighing 8 pounds falling 18 inches. Spurs shall resist without fracture the impact from 2 blows of such a ball falling 6 inches and striking on the extreme end of the hub of the spur.

Hydrostatic test.

147. When subjected to an internal hydrostatic pressure of 8 pounds per square inch, vitrified pipe shall show no percolation.

Absorption test.

20 148. After having been thoroughly dried and then immersed in water for 24 hours, sample pieces of pipe with all broken edges shall not absorb more than 4 per cent. of their weight of water.

Factory rejection.

149. The entire product of any pipe factory may be rejected when, in the judgment of the Engineer, the methods of manufacture fail to guarantee uniform results, or where the materials used are such as produce inferior pipe, as indicated by repeated failure to comply with the tests herein specified.

30

Without cradle.

151. When the sewer is to be laid without a cradle the trench shall be excavated as specified in paragraph 17 and the earth forming the bed carefully freed of stones. The pipe shall then be evenly bedded therein and the backfilling placed and firmly tamped in such a manner as to avoid disturbing the sewer.

How laid.

40 154. All pipes shall be laid with ends abutting and true to line and grade. The pipes shall be fitted together and matched so that when laid in the work they will form a sewer with a smooth and uniform invert. Unless otherwise permitted or directed, not less than 12 feet of pipe sewer shall be laid in one operation.

EXHIBIT C-216 (*continued*):

155. Unless otherwise shown on the plan, the joints of vitrified pipe sewers shall be made as hereinafter specified in paragraph 156.

Gasket and mortar joints.

10 156. Gasket and mortar joints shall be made in the following manner: A closely twisted hemp or oakum gasket of suitable diameter, in no case less than  $\frac{3}{4}$ -inch, and in one piece of sufficient length to pass around the pipe and lap at the top, shall be solidly rammed into the annular space between the pipes with a suitable calking tool. Before being placed, the gasket shall, if desired, be saturated with neat cement grout. The remainder of the space shall then be completely filled with plastic mortar mixed 1 to  $1\frac{1}{2}$ , and the joint wiped inside and finished to a smooth level outside.

20 Inspection of joints.

157. Unless otherwise permitted, at least 4 finished joints shall be left exposed for inspection throughout the working day, and the necessary staging for the protection of the exposed sewers and for the handling of excavated material shall be provided. A suitable ladder affording easy access for such inspection shall be furnished at every trench open for the proposed sewer.

Subgrade to be tested.

30 158. No pipe shall be laid or placed until the subgrade of the trench shall have been tested and found correct.

Sewer to be kept clean.

159. The interior of the sewer shall, as the work progresses, be cleared of all dirt, cement and superfluous materials of every description.

Backfilling.

40 160. Immediately after the sewer is laid the trench shall be backfilled as provided in paragraphs 29 to 37 inclusive and 157. No walking on or working upon the completed sewer (except as may be necessary in tamping the backfilling) will be permitted until the trench has been backfilled to a height of at least 2 feet over the top of the sewer.

EXHIBIT C-216 (*continued*):

Temporary covers.

161. The exposed ends of pipe sewers shall be provided with approved temporary covers fitted to the pipe so as to exclude earth and other materials.

Branch pipes.

- 10        162. Branch pipes and connection pipes shall be of the same quality and dimensions, and laid in the same manner as specified for vitrified pipe sewers. Dead ends of pipes shall be closed with bulkheads of brick masonry 8 inches in thickness.

Connection with existing work.

- 20        163. Wherever the proposed sewer is to connect with an existing manhole in which there is a branch pipe which is damaged or of unsuitable size or in improper position, such pipe shall be removed and be replaced with a pipe of suitable size or be reset in the proper position. The pipe so substituted or reset will be paid for at the contract price, for the corresponding size of pipe sewer.

Pipes cut to fit masonry.

164. The ends of pipes which enter masonry shall be neatly cut to fit the face of the masonry. When directed, such cutting shall be done before the pipes are built in.

30    Measurement.

165. The length of pipe sewers to be paid for will be determined by horizontal measurements along their center lines, and no deductions will be made on account of openings at manholes.

Prices to cover.

- 40        166. The contract prices for vitrified pipe sewers shall cover the cost of all necessary excavation (except rock); of all necessary trimmings, fittings and building into masonry; of all bulkheads; of all backfilling; of all samples furnished; and of all labor materials required to furnish and lay the sewers complete in place, as shown on the plan and as specified.

BASIN CONNECTIONS.

177. The connections between receiving basins or inlet basins and sewers or manholes shall be of 12-inch vitrified pipe,

EXHIBIT C-216 (*continued*):

unless otherwise shown on the plan. The pipes shall be of the same quality and dimensions, and laid in the same manner as hereinbefore specified for vitrified pipe sewers.

Measurement.

10 178. The lengths of basin connections to be paid for will be determined by measurements along their axes.

Prices to cover.

179. The contract price for basin connections shall cover the cost of all necessary excavation (except rock); of all necessary trimming, fitting and building into concrete, or masonry; of all backfilling; and of all labor and materials required to furnish and lay the basin connections complete in place as specified.

20

SPURS FOR HOUSE CONNECTIONS.

180. Spurs for house connections shall be of vitrified pipe 6 inches in diameter, equal in quality and dimensions to that specified for vitrified pipe sewers.

In concrete sewers.

30 181. In concrete sewers spurs shall be built in as shown on the plan or as directed. They shall be hub and spigot pipes with the spigot end molded or cut to fit flush with the inner surface of the sewer, and of sufficient length to reach the exterior of the sewer.

In pipe sewers.

182. Pipes having 6-inch spurs with hubs molded thereon shall be furnished and laid in pipe sewers where shown on the plan or directed. Such pipes will be paid for at the contract prices for vitrified pipe sewers, and the spurs will be paid for in addition at the contract price for spurs.

40

Covers.

183. The ends of all spurs not connected with drains shall be closed with approved covers. If required such covers shall be cemented in place, and when directed the covers shall be so cemented before the pipes are lowered into the trench.

EXHIBIT C-216 (*continued*):

Price to cover.

184. The contract price for spurs shall cover the cost of all labor and materials required to furnish and place the same as specified, and the cost of furnishing and cementing the covers for the same.

10                   DRAINS FOR HOUSE CONNECTIONS.

185. Where shown on the plan or where directed, drains for house connections shall be built from the spurs in such a manner and for such distance as may be shown or directed.

Depth at curb.

20                   186. House connections drains shall be laid with a minimum gradient of  $\frac{1}{4}$  inch to a foot, and wherever possible the depth from curb grade to the inner bottom of the drain at curb line shall be at least 8 feet.

Material.

187. Unless otherwise shown on the plan, drains for house connections shall be of vitrified pipe of the quality and dimensions specified for vitrified pipe sewers. The ends of the drains shall be closed with approved covers.

How laid.

30                   188. All the requirements, as hereinbefore specified, relating to excavation, laying and backfilling of vitrified pipe sewers shall apply, as far as they are applicable, to drains for house connections.

Measurement.

189. The lengths of pipe drains for house connections to be paid for will be determined by measurement along their axes.

40                   Price to cover.

190. The contract price for drains for house connections shall cover the cost of all necessary excavation (except rock); the cost of all backfilling; the cost of all covers, bends and specials required; and the cost of all labor and materials required to furnish and lay the drains for house connections complete in place, as specified.

EXHIBIT C-216 (*continued*):

**RISERS.**

191. Where shown on the plan or where directed risers for house connections shall be built from the spurs in such a manner and to such height as may be shown or directed. Unless otherwise shown on the plan they shall be of vitrified pipe of the quality and dimensions hereinbefore specified for vitrified pipe sewers. They shall be supported and surrounded by concrete as shown, and each shall be closed with an approved cover.

**Measurement.**

192. The lengths of risers to be paid for will be determined by measurements along their axes.

**Price to cover.**

20 193. The contract price for risers shall cover the cost of all necessary excavation (except rock); the cost of all concrete used in connection with the risers; the cost of all backfilling; the cost of all covers, bends and specials required; and the cost of all labor and materials required to construct the risers complete in place, as specified.

**MANHOLES.**

30 194. The masonry or concrete for manholes shall be built to within such distances of the existing surface of the ground as directed. When not built up to within 13 inches of the established grade of the street, the masonry or concrete shall be covered with an approved reinforced concrete slab to support the head.

**Brick manholes.**

40 195. Brick manholes shall be formed by means of templets placed at top and bottom with not less than 8 lines drawn between them, and they shall be smoothly and evenly plastered on the outside with a layer of mortar  $\frac{1}{2}$  inch thick.

**Concrete manholes.**

196. Concrete manholes shall be built of the materials, sizes and dimensions shown on the plan.

EXHIBIT C-216 (*continued*):

Steps.

197. Galvanized wrought iron steps of the size and shape shown on the plan shall be firmly built into the manholes at vertical intervals of about 16 inches.

Head and cover.

- 10        198. The manhole head and cover shall be of cast iron, and unless otherwise shown on the plan, each head, exclusive of cover, shall weigh not less than 500 pounds and each cover shall weigh not less than 160 pounds. The weight of each head and cover shall be conspicuously painted thereon by the manufacturer with white oil paint. The head shall be set on the masonry or concrete in a full bed of stiff mortar.

Price to cover.

- 20        199. The contract price for manholes shall cover the cost of all necessary excavation (except rock); of all backfilling; of all plastering; of all bluestones; of all concrete slabs; of all steps, when required; and of all labor and materials required to construct the same complete, in place, as shown on the plan and specified.

BASIN MANHOLES

Brick basin manholes.

- 30        200. Brick basin manholes shall be formed by means of templets placed at top and bottom with not less than 10 vertical lines drawn between them.

201. Where the walls of brick basin manholes are not built of two rings of brickwork with a mortar layer between, the inside of the brickwork shall be smoothly and even plastered with a layer of 1 — 2 Portland cement mortar  $\frac{1}{2}$  inch thick.

- 40        202. Where the wall of the basin manhole consists of two rings of brickwork, with a mortar layer between, the outer ring shall be carried up not less than 1 foot in advance of the inner ring, and the inner surface of the former shall be plastered with two coats of mortar. The second coat of mortar shall be applied before the first is set, and the total thickness of the mortar layer shall be 1 inch.



EXHIBIT C-216 (*continued*):

Concrete basin manholes.

203. Concrete basin manholes shall, if required, be built in such a manner that the bottom and sidewalks shall be formed in one continuous operation. Concrete basins shall be coated with a grout of neat cement on the inside.

10 Concrete cover slabs.

204. Concrete cover slabs of basin manholes shall be built of Class "A" concrete, reinforced as shown on plan.

Head cover and trap.

205. The basin manhole head and cover shall be of cast iron, as shown on plan, and known as a Standard Sidewalk Manhole Head and Cover. Each head exclusive of cover shall weigh not less than 260 pounds and each cover shall weigh not less  
20 100 pounds. An iron hood or trap, of the size and dimensions shown on the plan, must be furnished by the Contractor for each basin manhole and is to be built into the basin manhole, as shown on plan.

Restoration of sidewalks, curbs, etc.

206. All sidewalk pavements and curbs, disturbed by the construction of basin manholes, shall be restored by the Contractor in accordance with the specifications for similar work of  
30 the Bureau of Highways.

Price to cover.

207. The contract price for basin manholes shall cover the cost of all necessary excavation (except rock); of all back-filling; of all sidewalk and curb restorations and of all labor and materials required to construct the basin manholes complete in place, as shown on the plan and specified.

INLETS.

40

208. Inlets and the heads therefor shall be of the materials, forms and dimensions shown on the plan. The specifications for brickwork and concrete shall be those hereinbefore specified for basin manholes.

EXHIBIT C-216 (*continued*):

Heads.

209. The head shall be of cast iron and shall conform in all respects to the specifications for iron castings. If required, the inlets shall be closed with bulkheads of brick masonry and such bulkheads shall be removed when directed.

10 Restoration of roadway pavements, etc.

210. All roadway pavements, sidewalk pavements and curbs, disturbed by the construction of inlets, except those under guarantee for maintenance shall be restored by the Contractor in accordance with the specifications of the Bureau of Highways for similar work or specifications hereafter attached. In unpaved streets and macadamized streets where the inlets are approximately at the surface of the street a space of two and one-half ( $2\frac{1}{2}$ ) feet adjoining such inlets shall, if required, be paved with approved paving blocks.

Price to cover.

211. The contract price for inlets shall cover the cost of all necessary excavation (except rock); of all backfilling; of the temporary brick bulkheads in the mouths of the inlets, when required; of all roadway, sidewalk and curb restorations; of all labor and materials required to construct the inlets, complete in place, as shown on the plan and specified.

30

RESTORATION OF SURFACE AND CLEANING UP.

Restoration of unpaved roadways, sidewalks, etc.

219. At such time as may be directed, all unpaved roadways, gutters and sidewalks affected by the work done under this contract shall be restored by the Contractor to the same condition in which they were at the time of the opening of bids for this contract.

40

Pavements, etc., restored by Contractor.

220. If required by the plan, roadway and sidewalk pavements, crosswalks, curbs, etc., shall be satisfactorily restored and adjusted by the Contractor at such times as may be directed.

EXHIBIT C-216 (*continued*):

Sidewalk pavements shall be restored in whole flags, squares or sections which shall correspond in quality and appearance with the original or adjoining flags, squares or sections. All work and materials used in such restoration and adjustment shall conform in all respects to the standard specifications now in use by the President for similar work and materials.

10 Pavements, etc., under guarantee.

20 221. All pavements, sidewalks, crosswalks, curbs, etc., existing at the time of the opening of the bids for this contract, and under guarantee for maintenance, shall be restored and adjusted by the parties responsible under such guarantee, and at the expense of the Contractor. If not so restored and adjusted during the progress of the work, the Contractor shall, when directed, pay to the President, before the completion of the contract, a sum of money sufficient to cover the cost of having the same restored and adjusted by the parties responsible under such guarantee, and at the charges for the restoration of the same, as set forth in their contracts relating thereto. Such sum shall be accompanied by certificates from the parties responsible for the maintenance of the pavements, sidewalks, crosswalks, curbs, etc., to the effect that such sum will be accepted by them as full payment for such restoration and adjustment.

30 Temporary restoration.

222. At such times as may be directed roadway and sidewalk pavements, crosswalks, curbs, etc., which have been removed, whether under guarantee or not, shall be temporarily restored by the Contractor to the satisfaction of the Engineer.

When new pavement is laid.

40 223. If pavement, sidewalks, crosswalks, curbs, etc., are laid where none existed at the time the bids for this contract were opened, the Contractor shall excavate and remove such portions of the pavements, sidewalks, crosswalks, curbs, etc., and their foundations as may be necessary for the prosecution of the work, but he will not be required to make a permanent restoration of them.

EXHIBIT C-216 (*continued*):

Trenches flooded.

224. Before laying any pavements, sidewalks, crosswalks, curbs, etc., the trenches shall, if required, be flooded with water, as directed, and all resulting holes or depressions shall be filled and tamped solid.

10

Cleaning up.

225. At such times as may be directed the Contractor shall remove from the streets, all materials which were placed thereon by him as a consequence of performing this work and which are not required by the contract to be left as part of the finished work. The entire work and portions of the streets affected thereby shall be left in a satisfactory condition. The sidewalks and crosswalks shall be swept clean of all material which may have come thereon by reason of the work under this contract, and if required, they shall be sprinkled with water during the sweeping.

20

Cost to be covered.

226. The cost of all the labor required to be done and all the materials required to be furnished in the performance of all the work specified in paragraphs 219 to 225 inclusive, shall be covered by all the contract prices for all the items for which there are contract prices.

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EXHIBIT C-230 :

EXHIBIT C-230.

(Contract between The City of New York and Carmine Petracca, for the construction of a sewer and appurtenances in Ormond (27th) Street from Crocheron Ave. to the crown about 350 ft. north of Crocheron Ave. Norwood Place (26th St.) from Crocheron Ave. to State St., etc. Third Ward, on July 9th, 1920).

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ANNEXES TO CONTRACT

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THE CITY OF NEW YORK — DEPARTMENT OF FINANCE  
Office of Comptroller

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CONTRACT SUMMARY

Contractor : CARMINE PETRACCA No. 54124  
Names of Sureties : The U. S. Fidelity & Guaranty Co. — Royal Indemnity Co. — New Amsterdam Casualty Co.  
Amount of Bond : \$90,000.00

30 Dated of award: June 25, 1920. Department: President of the Borough of Queens. Date of contract: July 9, 1920. Borough: Queens. Date of expiration: 450 consecutive working days. Date of filing: July 7, 1920. Damages: \$10. per day. Date paid in full: 10/24/22.

DESCRIPTION OF WORK.

40 For the construction of a sewer and appurtenances in Ormond (27th) Street from Crocheron Ave. to the crown about 350 ft. north of Crocheron Avenue. Norwood Place (26th St.) from Crocheron Ave. to State St., etc. Third Ward.

	273.498.50
A. E.	2.472.13
	<hr/>
	275.970.63
	1.480.09
	<hr/>
	277.450.72

EXHIBIT C-230 (continued):

Original estimate,	\$273,498.50
A.E.	3,962.22
	<hr/>
	\$277,450.72

ACCOUNTS TO BE CHARGED.

CFM 25

10 The obligation of this surety bond cease if it nothing occurring after May 10, 1922.

In the condition of the contract have been complied for the retained percentage (if any) is due on or after May 10, 1922.

GEORGE W. MORTAR,  
Examiner.

LIENS OF ASSIGNMENTS

	Assignment filed	Satisfied
20	8/23/10 Frank Mackay .....	15,000.00
	9/10/20 Frank Mackay .....	15,000.00
	10/23/20 Frank Mackay .....	15,000.00
	1/10/21 Frank Mackay .....	15,000.00
	5/31/21 Frank Mackay .....	15,000.00
	7/14/21 Seaside Cont. Co. Inc., 193 Beach, 108 St., Rockaway Beach .....	Contract

PAYMENTS, AMOUNTS RETAINED AND EARNED.

		Amount paid to date	Amount retained to date	Amount earned to date
30	Date ... % Payments			
	8-12-20 32,105.35	32,105.35	5,665.65	37,771.00
	9-10-20 51,350.62	83,455.97	14,727.53	98,183.50
	10-14-20 22,826.75	106,282.72	18,755.78	125,038.50
	12-10-20 24,192.70	130,475.42	23,025.08	153,500.50
	12-15-20 31,069.63	161,545.50	28,507.95	190,053.00
	2-21-21 8,094.97	169,640.02	29,936.48	199,576.50
	6-22-21 10,289.25	179,929.27	31,752.23	211,681.50
40	7-21-21 17,949.88	197,879.15	34,919.85	232,799.00
	8-19-21 12,917.87	210,797.02	37,199.48	247,996.50
	9-23-21 18,509.60	229,306.62	40,465.88	269,772.50
	10-31-21 5,268.42	234,575.04	41,395.59	275,970.63
	12-13-21 33,884.57	268,459.61	8,991.11	277,450.72
	9-21-22 8,991.11	277,450.72		

---

277,450.72

In full.

EXHIBIT C-230 (*continued*):

CITY OF NEW YORK

Office of

THE PRESIDENT OF THE BOROUGH OF QUEENS.

10 Maurice E. Connolly,  
President.

Joseph Flanagan,  
Borough Secretary.

Hugh Hall,  
Secretary to President.

Long Island City, July 12th, 1920.

20 The Honorable Charles L. Craig,  
Comptroller of the City of New York,  
New York City.

Dear Sir :—

I transmit herewith for registration in the Department of Finance contract of Carmine Petracca.

30 For constructing sewer and appurtenances in Ormond Street from Chocheron Avenue to the crown about 350 feet north of Crocheron Avenue.

Yours very truly,

WBB-ES  
Enclosure.

MAURICE E. CONNOLLY,  
President of the Borough of Queens.

**EXHIBIT C-230 (continued):**

The City of New York

**ADVICE OF AWARD OF CONTRACT**

(This copy to be retained by Bookkeeping Division, Department of Finance).

Contract No. 54124

10 (To be filled in the Dep't of Finance).

\*Date June 25, 1920.

Dep't of The President of the Borough of Queens.

Comptroller of The City of New York:

Please take notice that the following described contract has this day\* been awarded to Contractor **CARMINE PETRACCA**, 218 Skillman Street, Brooklyn, N. Y.

20	<b>SURETIES</b>	<b>AMT. OF BOND</b>
	\$30,000.00	\$90,000.00
	The United States Fidelity & Guaranty Co., 66 Liberty St., N. Y.	
	\$30,000.00	
	Royal Indemnity Co.	
	\$30,000.00	
30	New Amsterdam Casualty Co.	

**DETAILS OF PURPOSE OF CONTRACT**

For the construction of a sewer and appurtenances in **ORMOND (27th) STREET** from Crocheron Ave. to the crown about 350 ft. north of Crocheron Ave.;  
**NORWOOD PLACE (26th St.)** from Crocheron Ave. to State St., etc., Third Ward.

40	Contract Chargeable to Code No.	Estimated Amount	Contracts Previously Awarded (Including Adjustments)	Open Market Orders Issued To Date (Including Adjustments)	Misc. Vouchers, Payrolls, and Other Charges
	C.F.M. 25	\$273,498.50	\$1,545,789.87	\$89,685.23	\$28,092.52

Enter full titles of accounts below and refer to code numbers by means or line numbers in margin



EXHIBIT C-230 (*continued*):

Street Improvement Fund.

Payment should properly be made  
from the fund shown hereon.

.....  
Auditor of Accounts.

10

Yours respectfully,

FRANK X. SULLIVAN,  
Acting President of the Borough of Queens,  
Head of Dept.

\* This will be the date of the entry by which the fund is charged with the estimated amount of the contract both in the department making the award and by the Department of Finance. There must therefore be no delay in forwarding this advice.

20

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CITY OF NEW YORK

Office of

THE PRESIDENT OF THE BOROUGH OF QUEENS.

Maurice E. Connolly,  
President.

30 Joseph Flanagan,  
Borough Secretary.

Hugh Hall,  
Secretary to President.

Long Island City, July 27, 1920.

Hon. Charles L. Craig, Comptroller,  
City of New York,

40 Sir :—

Referring to contract, No. 54124 ;—

“For the construction of a sewer and appurtenances in ORMOND (27th) STREET from Crocheron Ave. to the crown about 350 ft. north of Crocheron Ave. ;

NORWOOD PLACE (26th St.) from Crocheron Ave. to State St., etc., Third Ward.

EXHIBIT C-230 (*continued*):

I beg to inform you that the contractor, CARMINE PETRACCA, 218 Skillman Street, Brooklyn, N. Y., has been ordered to commence the work embraced in said contract on August 9, 1920, or before five days from the receipt of his notice.

Yours very truly,

FRANK X. SULLIVAN,  
Acting President of the Borough of Queens.

10

WUB-PJH

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CITY OF NEW YORK

Office of

THE PRESIDENT OF THE BOROUGH OF QUEENS.

20

Maurice E. Connolly,  
President.

Joseph Flanagan,  
Borough Secretary.

Hugh Hall,  
Secretary to President.

JFP/1

Long Island City, December 13, 1921.

30

The Honorable Charles L. Craig,  
Comptroller of the City of New York,

Sir:—

Attached to Final Certificate on contract #54124, Seaside Contracting Co., 193 Beach 108th St., Rockaway Beach, N. Y., Assignee of CARMINE PETRACCA, 218 Skillman St., Brooklyn, N. Y., Contractor:

40

For constructing a sewer and appurtenances in ORMOND (27th) St. from Crocheron Av. to crown about 350'0" N. of Crocheron Av.

NORWOOD PL. (26th St.) from Crocheron Av. to State St., etc., etc., Third Ward:

there is a statement showing the manner in which the contract cost exceeds the contract price bid and on which a typographical



EXHIBIT C-230 (continued):

IN EXCESS OF ESTIMATED QUANTITY

	.4	lin. ft. 4'3" R.C.P. Sewer (Type B)	@	\$ 19.50—\$	7.80
	.56	" " 2'9" " " " "	@	19.00—	10.64
	.62	" " 2'6" " " " "	@	18.00—	11.16
	.27	" " 2'3" " " " "	@	15.00—	4.05
	61.32	" " 24" " " " "	@	11.00—	674.52
10	.9	" " 22" Vitrified Pipe Sewer	@	9.50—	8.55
	.56	" " 18" " " "	@	7.00—	3.92
	4.61	" " 12" " " "	@	5.25—	24.21
	13.	vert. ft. Risers for House Conn'ns	@	2.50—	32.50
	7	lin ft. 12" Vit. Pipe, Basin Conn'ns	@	1.70—	11.90
	349	" " 6" " " H. C. Drains	@	2.00—	698.00
	420.9	cu. yds. Rock Excavation, etc	@	15.50—	6523.95
	6	Inlets	@	70.00—	420.00
	1	Manhole	@	175.00—	175.00
20					<u>\$8606.20</u>

LESS THAN ESTIMATED QUANTITY

	19.35	lin. ft. 5'0" R.C.P. Sewer (Type B)	@	\$61.00—\$1180.35
	2.65	" " 24" " " (Conc. Cr.)	@	20.00— 53.00
	5.31	" " 20" Vit. Pipe Sewer	@	9.00— 47.79
	66.81	" " 15" " " "	@	6.00— 400.86
	.47	" " 12" " " " (Conc. Cr.)	@	9.00— 4.23
	500	lbs. Reinforcing Steel	@	.15— 75.00
30	5000	ft. B. M. Bracing & Sheeting	@	100.00— 500.00
	413.5	lin ft. 10" V. P. Basin Conn'n	@	1.00— 413.50
	27	6" Spurs, 24" long on Conc. P. Sewer	@	1.00— 27.00
	3	6" Spurs on 22" V. P. Sewer	@	8.00— 64.00
	8	6" " " 20" " " "	@	6.00— 48.00
	8	6" " " 18" " " "	@	5.00— 40.00
	8	6" " " 15" " " "	@	3.50— 28.00
	201	6" " " 12" " " "	@	2.25— 452.25
	60	cu. yds. Extra Class "A" Concrete	@	22.00— 1320.00
40				<u>\$4653.98</u>

COST OVER BIG PRICE . . . \$3952.22

Yours very truly,

CLIFFORD BELTONS,  
Acting President of the Borough of Queens.

EXHIBIT C-230 (continued):

ENGINEERING.

December 30, 1921.

Mr. Chandler Withington,  
Chief Engineer,

Sir :—

10

In relation to final certificate in the sum of \$33,573.47, for the construction of sewers in Ormond Street, from Crocheron Ave to the crown about 450' N. of Crocheron Avenue, etc., in the Borough of Queens, Seaside Contracting Co., Assignee of CARMINE PETRACCA, Contractor, Contract #54124, I report:—

20

The quantities enumerated in the final certificate are correct and the work has been done in substantial conformity with the contract; I would therefore recommend payment of voucher in the sum of \$33,573.47.

On November 12, 1921 I reported, in re certificate No. 11, that the voucher was over-certified in the net sum of \$311.10 because of over-measurement in the 5'-0" sewer. On examination of contract summary I find that the amount paid is \$311.10 less than the amount reflected in attached final certificate. Since the final certificate quantities are now correct, the aforesaid sum of \$311.10 should be released.

30

Respectfully,

.....  
Assistant Engineer.

\_\_\_\_\_

CORPORATION

40

GENERAL RELEASE.

To all to whom these Presents shall come or may concern,  
Greeting :

KNOW YE, That SEASIDE CONTRACTING CO. INC.,  
ASSIGNEE OF CARMINE PETRACCA, #193 Beach 108th St.  
Rockaway Beach, L. I., for and in consideration of the sum of

EXHIBIT C-230 (*continued*):

THIRTY THREE THOUSAND, EIGHT HUNDRED, EIGHTY  
FOUR 57/100 Dollars, lawful money of the United States of  
America, to it by The City of New York, the receipt of which is  
hereby acknowledged, have remised, released and forever dis-  
charged, and by these presents does for itself, its successors and  
assigns, remise, release and forever discharge the said The City  
of New York, their successors and assigns, of and from all and all  
10 manner of action and actions, cause and causes of action, suits,  
debts, dues, sums of money, accounts, reconings, bonds, bills  
specialties, covenants, contracts, controversies, agreements,  
promises, variances, trespasses, damages, judgments, extents, ex-  
ecutions, claims and demands whatsoever in law or in equity,  
which against them it ever had, now has or which it or its  
successors or assigns hereafter can, shall or may have, for, upon or  
by the reason of a certain contract or agreement made the 9th day  
of July, A. D., 1920, by and between CARMINE PETRACCA, and  
20 the said The City of New York, for Contract No. 54124 Sewers,  
Ormond St., etc., or by means of any matter, cause or thing  
whatsoever resulting or arising therefrom from the beginning of  
the world to the day of the date of these presents. Excepting the  
sum of \$8,991.11 retained as repairing security and further ex-  
cepting any claim it may have to a sum not exceeding \$35,000.00  
for Loss and Damages because of the alleged failure of the City  
of New York to make payments when due, which claim is not  
hereby released by it nor connected by the City of New York.

30 IN WITNESS WHEREOF, SEASIDE CONTRACTING  
CO. INC., has caused its corporate seal to be affixed hereto and  
its corporate name to be signed to these presents by its President  
this 23rd day of January in the year one thousand, nine hundred  
and twenty two.

Sealed and delivered in the presence of

W. F. HEFFERMAN.

SEASIDE CONSTRUCTION CO. INC.

40

JOHN C. SCHADE, PRES.

Original Delivery to Chief Auditor.

EXHIBIT C-230 (*continued*):

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

10 On this 23rd day of January 1922, before me personally came JOHN C. SCHADE to me known, who being by me duly sworn, did depose and say that he resided in Rockaway Beach, N. Y., that he is the Pres. of the Seaside Cont. Co. Inc., the Corporation described in and which executed the above instrument, that he knew the seal of said Corporation; that the seal affixed to said instrument was such corporate seal; that it was so affixed by order of the Board of Directors of said Corporation, and that he signed his name thereto by like order.

20

W. F. HEFFERMAN,  
Corp. of Deeds, N. Y. City  
Residing in N. Y. County  
New York County Clerks No. 10  
Term Expires Jan. 10th, 1924.

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THE CITY OF NEW YORK

DEPARTMENT OF FINANCE

BUREAU OF AUDIT — DIVISION OF ADMINISTRATION.

30

Municipal Building, Room 631

\$8,991.11

New York, October 24, 1922.

RECEIVED from CHARLES L. CRAIG, Comptroller, Warrant No. 143153 for the sum of EIGHT THOUSAND, NINE HUNDRED, NINETY ONE 11/100 Dollars, on account of the within Contract numbered 54124 for and in Full of repairing security Seaside Contg. Co., Assignee of CARMINE PETRACCA.

40

Mailed October 24, 1922.

W. F. HEFFERMAN,  
Disbursing Clerk.

EXHIBIT C-230 (continued):

THE CITY OF NEW YORK  
OFFICE OF THE PRESIDENT OF THE BOROUGH  
OF QUEENS.

10

BUREAU OF SEWERS.

CONTRACT FOR the construction of a sewer and appurtenances in:

- ORMOND (27th) STREET from Crocheron Ave. to the crown about 350 ft. North of Crocheron Ave.;
- 20 NORWOOD Place (26th) STREET from Crocheron Ave. to State St.;
- MILLARD (25th) STREET from Crocheron Ave. to State St.;
- LAWSON (24th) STREET from Crocheron Ave. to State St.;
- KENDALL (23rd) STREET from State St. to a property line 730 ft. North thereof;
- JOSLIN (22nd) STREET from Jackson Ave. to Mitchell Ave.;
- 30 INKERMAN (21st) STREET from State St. to Mitchell Ave.;
- HOOGLAND (20th) STREET from Jackson Ave. to Mitchell Ave.;
- GRENNELL (19th) STREET from Jackson Ave. to Mitchell Ave.;
- FORBES (18th) STREET from State St. to Mitchell Ave.
- 40 EAGLES (17th) STREET from Jackson Ave. to Mitchell Ave.;
- DUNSING (16th) STREET from Mitchell Ave. to a point about 370 ft. South of Mitchell Ave.;
- CLARENCE (15th) STREET from Mitchell Ave. to a point about 300 ft. South of Mitchell Ave.;
- JACKSON AVENUE from Joslin (22nd) St. to Forbes (18th) St.;
- STATE STREET from Norwood (26th) St. to Dunsing (16th) St.;
- MITCHELL AVENUE from Inkerman (21st) St. to Beeckman (14th) St.; and in



EXHIBIT C-230 (*continued*):

CROCHERON AVENUE from Joslin (22nd) St. to Ormond (27th) St., Third Ward. together with all the work incidental thereto.

Parties.

10 THIS AGREEMENT, made and entered into this 9th day of July, in the year one thousand nine hundred and twenty by and between The City of New York, party of the first part, by the President of the Borough of Queens, and CARMINE PETRACCA, 218 Skillman St., Brooklyn, N. Y., Contractor, party of the second part, pursuant to the provisions of The Greater New York Charter, and the resolution of The Board of Estimate and Apportionment adopted on the 14th day of February 1919, of which resolution the following is a copy:

RESOLUTION

20 BOARD OF ESTIMATE AND APPORTIONMENT

CITY OF NEW YORK

(Cal. No. 27)

A copy of a resolution of the Local Board of the Jamaica District, duly adopted by said Board on the 25th day of April, 1918 and approved by the President of the Borough of Queens on the 10th day of May, 1918 having been transmitted to the Board of Estimate and Apportionment, as follows, to wit:

30 "RESOLVED, That this Board does hereby initiate proceedings for the said local improvement, to wit: The construction of a sewer and appurtenances in ORMOND (27th) Street from Crocheron Avenue to the Crown about 350'0" north of Crocheron Avenue; NORWOOD PLACE (26th Street) from Crocheron Avenue to State Street; MILLARD (25th) STREET from Crocheron Avenue to State Street; LAWSON (24th) STREET from Crocheron Avenue to State Street; KENDALL (23rd) STREET from State Street to a properly line 730' north thereof; JOSLIN (22nd) STREET from Jackson Avenue to Mitchell Avenue;  
40 INKERMAN (21st) STREET from State Street to Mitchell Avenue; HOOGLAND (20th) STREET from Jackson Avenue to Mitchell Avenue; GRENNELL (19th) STREET from Jackson Avenue to Mitchell Avenue; FORBES (18th) STREET from State Street to Mitchell Avenue; EAGLES (17th) STREET from Jackson Avenue to Mitchell Avenue; DUNSING (16th) STREET from Mitchell Avenue to a point about 370'0" south of Mitchell Avenue; CLARENCE (15th) STREET from Mitchell Avenue to

EXHIBIT C-230 (*continued*):

10 a point about 300'0" south of Mitchell Avenue; JACKSON AVENUE from Joslin (22nd) Street to Forbes (18th) Street; STATE STREET from Norwood (26th) Street to Dunsing (16th) Street; MITCHELL AVENUE from Inkerman (21st) Street to Beeckman (14th) Street; and in CROCHERON AVENUE from Joslin (22nd) to Ormond (27th) Street, Third Ward; and thereupon, on the 14th day of February, 1919 resolutions  
20 having been adopted by the Board of Estimate and Apportionment authorizing the President of the Borough of Queens to prepare the necessary plans, specifications and an estimate of the cost of the proposed improvement based on actual survey and further resolving that the Board of Estimate and Apportionment will consider the authorization of the construction of the proposed improvement after the President of the Borough of Queens has submitted certain statements as provided in the said resolution, and the said resolution having been duly complied with by the President of the Borough of Queens, as appears by papers and documents on the files of the Board of Estimate and Apportionment, and there having been presented to the Board of Estimate and Apportionment an estimate in writing in such detail as the Board has directed, that the cost of the proposed work or improvement, together with the preliminary expenses will be the sum of \$216,100.; and a statement of the assessed value according to the last preceding tax roll of the real estate included within the probable area of assessment, to wit, the sum of \$1,342,000. having also been presented, it is

30 **RESOLVED**, That the said resolution of the Local Board be and the same is hereby approved and the construction of the local improvement therein provided for is hereby authorized. This Board does hereby determine that no portion of the cost and expense thereof shall be borne and paid by The City of New York, but that the whole of such cost and expense, including the afore-said preliminary expenses, shall be assessed upon the property deemed to be benefited by the said local improvement.

40 I hereby certify that the foregoing is a true copy of a resolution by the Board of Estimate and Apportionment at a meeting of said Board held on April 30, 1920.

Dated, New York, May 5, 1920.

(signed) JAMES MATTHEWS,  
Assistant Secretary,  
Board of Estimate and Apportionment.

EXHIBIT C-230 (*continued*):

BOARD OF ESTIMATE AND APPORTIONMENT  
CITY OF NEW YORK

10 WHEREAS, The President of the Borough of Queens has transmitted to the Board of Estimate and Apportionment a copy of a resolution of the Local Board of the Jamaica District, duly adopted by said Board of the 25th day of April 1918, and approved by the President of the Borough of Queens on the 10th day of May, 1918 as follows, to wit:

20 "RESOLVED, That this Board does hereby initiate proceedings for the said local improvement, to wit: The construction of a sewer and appurtenances in ORMOND (27th) Street from Crocheron Avenue to the Crown about 350'0" north of Crocheron Avenue; NORWOOD PLACE (26th Street) from Crocheron Avenue to State Street; MILLARD (25th) STREET from Crocheron Avenue to State Street; LAWSON (24th) STREET from Crocheron Avenue to State Street; KENDALL (23rd) STREET from State Street to a properly line 730' north thereof; JOSLIN (22nd) STREET from Jackson Avenue to Mitchell Avenue; INKERMAN (21st) STREET from State Street to Mitchell Avenue; HOOGLAND (20th) STREET from Jackson Avenue to Mitchell Avenue; GRENNELL (19th) STREET from Jackson Avenue to Mitchell Avenue; FORBES (18th) STREET from State Street to Mitchell Avenue; EAGLES (17th) STREET from Jackson Avenue to Mitchell Avenue; DUNSING (16th) STREET from Mitchell Avenue to a point about 370'0" south of Mitchell Avenue; CLARENCE (15th) STREET from Mitchell Avenue to a point about 300'0" south of Mitchell Avenue; JACKSON AVENUE from Joslin (22nd) Street to Forbes (18th) Street; STATE STREET from Norwood (26th) Street to Dunsing (16th) Street; MITCHELL AVENUE from Inkerman (21st) Street to Beekman (14th) Street; and in CROCHERON AVENUE from Joslin (22nd) to Ormond (27th) Street, Third Ward; and which resolution is accompanied with an approximate estimate of the cost of work and the assessed value of the property benefited.

30  
40

RESOLVED, That the Board of Estimate and Apportionment hereby authorizes the President of the Borough of Queens to prepare plans, specifications and an estimate of cost based on actual survey, and also to secure a determination of the boundary of the district of assessment; the entire expense of the work done

EXHIBIT C-230 (*continued*):

subsequent to the date of this authorization to be charged against the Street Improvement Fund and later included in the assessment.

10 RESOLVED, That the Board of Estimate and Apportionment will consider the authorization of the construction of the said proposed improvement after the President or the Bo-  
rough of Queens has submitted a statement showing that all of the above described work has been done, that he has secured the approval of the form of contract by the Corporation Counsel, that he is prepared to place the improve-  
ment under contract as soon as he receives the consent of the Board, and that the assessment map will completed on or before the date of payment on acceptance; this report being accompanied by a further statement showing the quantity of work to be per-  
formed under each item and the unit price thereof, the expense incurred for preliminary work, the allowance to be made for  
20 additional engineering and contingencies, the total probable cost, and the number of working days to be allowed the contractor for carrying out the work.

I hereby certify that the foregoing is true copy of a resolution adopted by the Board of Estimate and Apportionment at a meeting of said Board held on February 16, 1919.

Dated, New York, February 16, 1919.

30 JAMES MATTHEWS,  
Assistant Secretary,  
Board of Estimate and Apportionment.

Covenant.

40 WITNESSETH, That the parties to these presents, each in consideration of the agreements on the part of the other herein contained, have mutually agreed, and hereby mutually agree, the party of the first part for itself and its successors, and the party of the second part for itself, himself, or themselves, and its, his or their executors, administrators, successors and assigns, as follows:

Contract.

I. The contract for the hereinbefore entitled work shall include the following, which are hereby agreed upon as forming part and parcel thereof: the Proposal for Bids, the Bid, the Bond,

EXHIBIT C-230 (*continued*):

this Agreement and the Specifications hereto annexed; also the Plan of the Work dated March 2nd, 1920, filed in the office of the President of the Borough, entitled: Plan, Profile and Details for the construction of a sewer in

- 10           ORMOND (27th) STREET from Crocheron Avenue to the crown about 350'0" North of Crocheron Avenue;  
NORWOOD PLACE (26th St.) from Crocheron Avenue to State Street;  
MILLARD (25th) STREET from Crocheron Avenue to State Street;  
LAWSON (24th) STREET from Crocheron Avenue to State Street;  
KENDALL (23rd) STREET from State Street to a property line 730 ft. North thereof;  
JOSLIN (22nd) STREET from Jackson Avenue to Mitchell Avenue;
- 20           INKERMAN (21st) STREET from State Street to Mitchell Avenue;  
HOOGLAND (20th) STREET from Jackson Avenue to Mitchell Avenue;  
GRENNELL (19th) STREET from Jackson Avenue to Mitchell Avenue;  
FORBES (18th) STREET from State Street to Mitchell Avenue;  
EAGLES (17th) STREET from Jackson Avenue to Mitchell Avenue;
- 30           DUNSING (16th) STREET from Mitchell Avenue to a point about 370'0" South of Mitchell Avenue,  
CLARENCE (15th) STREET from Mitchell Avenue to a point about 300'0" South of Mitchell Avenue;  
JACKSON AVENUE from Joslin (22nd) Street to Forbes (18th) Street;  
STATE STREET from Norwood (26th) Street to Dunsing (16th) Street;  
MITCHELL AVENUE from Inkerman (21st) Street to Beeckman (14th) Street, and in
- 40           CROCHERON AVENUE from Joslin (22nd) Street to Ormond (27th) Street, Third Ward;

and also Drawings of Standard Details pertinent thereto on file in the office of the Engineer.

EXHIBIT C-230 (*continued*):

Party of the first part.

II. Whenever the term "The City" or a word "President," or a pronoun in place of either, is used, it refers to and means The City of New York, the party of the first part hereto, or the President of the Borough of Queens, or his authorized representative.

10 Party of the second part.

Whenever the word "Contractor," or a pronoun in place thereof, is used, it refers to and means the party of the second part hereto.

Engineer described.

20 III. Whenever the word "Engineer," or a pronoun in place thereof, is used, it refers to and means the Engineer in Charge of Sewers, Borough of Queens, acting either directly or through assistants designated by him to act in the premises, limited to the particular duties entrusted to them. In case said Engineer may not be able to act, then such Engineer as may be designated by the President shall act in his place.

Terms defined.

30 IV. Whenever the word "plan" is used it refers to and means the plan of this work and the standard drawings pertinent thereto. Whenever it is provided that anything is "to be" or "to be done," "if" or "as," or "when" or "where approved," "required," "directed," "permitted," "ordered," "designated" or "deemed necessary" it shall be taken to mean approved, required, permitted, ordered, designated or deemed necessary as the case may be by the Engineer. Whenever the words "desirable," "suitable," "sufficient," "satisfactory" or others of a similar purport are used it is hereby agreed that the desirability, suitability, sufficiency, satisfactoriness or other denominated condition shall be as determined by the Engineer.

40 Contractor to furnish tools, proper appliances, etc.

V. The Contractor hereby agrees to furnish and provide all materials, labor, and appliances necessary and proper for the purpose, to excavate for, build, complete and connect in a good substantial manner, to the satisfaction of the President, and in conformity with the contract, the hereinbefore entitled work and all the work incidental thereto, and the Contractor hereby agrees

EXHIBIT C-230 (*continued*):

to receive and accept as and for his full compensation the following prices, which are the amounts or rates at which this contract was awarded to the Contractor at the public letting thereof:

TYPE "B"

Prices.

10	Linear Feet 5'-0" Reinforced Concrete Pipe Sewer (Precast Type "B") Per Linear Foot, Sixty-One Dollars .....	(\$61.00).
	Linear Feet 4'-3" Reinforced Concrete Pipe Sewer (Precast Type "B") Per Linear Foot, Nineteen and 50/100 Dollars ....	(\$19.50).
	Linear Feet 2'-9" Reinforced Concrete Pipe Sewer (Precast Type "B") Per Linear Foot, Nineteen Dollars .....	(\$19.00).
20	Linear Feet 2'-6" Reinforced Concrete Pipe Sewer (Precast Type "B") Per Linear Foot, Eighteen Dollars .....	(\$18.00).
	Linear Feet 2'-3" Reinforced Concrete Pipe Sewer (Precast Type "B") Per Linear Foot, Fifteen Dollars .....	(\$15.00).
	Linear Feet 24-inch Reinforced Concrete Pipe Sewer (Precast Type "B") Per Linear Foot, Eleven Dollars .....	(\$11.00).
30	Linear Feet 24-inch Reinforced Concrete Pipe Sewer including concrete cradle, (Precast Type "B") Per Linear Foot, Twenty Dollars .....	(\$20.00).
	Linear Feet 22-inch Vitrified Pipe Sewer, Per Linear Foot, Nine and 50/100 Dollars .....	(\$9.50).
	Linear Feet 20-inch Vitrified Pipe Sewer, Per Linear Foot, Nine Dollars .....	(\$9.00).
	Linear Feet 18-inch Vitrified Pipe Sewer, Per Linear Foot, Seven Dollars .....	(\$7.00).
	Linear Feet 15-inch Vitrified Pipe Sewer, Per Linear Foot, Six Dollars .....	(\$6.00).
40	Linear Feet 12-inch Vitrified Pipe Sewer, Per Linear Foot, Five and 25/100 Dollars .....	(\$5.25).
	Linear Feet 12-inch Vitrified Pipe Sewer (including concrete cradle) Per Linear Foot, Nine Dollars ...	(\$9.00).
	Manholes, Complete, Each, One hundred and seventy-five Dollars.....	(\$175.00).
	Basin Manholes, Complete, Each, Two hundred and fifty Dollars .....	(\$250.00).

EXHIBIT C-230 (continued):

	Inlets, Complete,	
	Each, Seventy Dollars .....	(\$70.00).
	Linear Feet 12-inch Vitrified Pipe, Basin Connection,	
	Per Linear Foot, One and 70/100 Dollars .....	(\$1.70).
	Linear Feet, 10-inch Vitrified Pipe, Basin Connection,	
	Per Linear Foot, One Dollar .....	(\$1.00).
10	Six-inch Spurs, 24-inches long on Concrete pipe Sewers,	
	Each, One Dollar .....	(\$1.00).
	Six-inch Spurs on 22-inch Vitrified Pipe Sewer,	
	Each, Eight Dollars .....	(\$8.00).
	Six-inch Spurs on 20-inch Vitrified Pipe Sewer,	
	Each, Six Dollars .....	(\$6.00).
	Six-inch Spurs on 19-inch Vitrified Pipe Sewer,	
	Each, Five Dollars .....	(\$5.00).
	Six-inch Spurs on 15-inch Vitrified Pipe Sewer,	
20	Each, Three and 50/100 Dollars .....	(\$3.50).
	Six-inch Spurs on 12-inch Vitrified Pipe Sewer,	
	Each, Two and 25/100 Dollars .....	(\$2.25).
	Linear Feet 6-inch Vitrified Pipe House Connection	
	Drains, Per Linear Foot, Two Dollars .....	(\$2.00).
	Vertical Feet Risers for House Connections,	
	Per Vertical Foot, Two and 50/100 Dollars .....	(\$2.50).
	Junction Chamber at State St. and Joslin St.,	
	Complete, One thousand Dollars .....	(\$1000.00).
30	Junction Chamber at State St. and Lawson St.,	
	Complete, Nine hundred Dollars .....	(\$900.00).
	Cubic Yards Extra Class "A" Concrete,	
	Per Cubic Yard, Twenty-two Dollars .....	(\$22.00).
	Lbs. Reinforced Steel, exclusive of steel shown on plan,	
	Per Lb., Fifteen cents .....	(\$0.15).
	Cubic Yards, Rock Excavation,	
	Per Cubic Yard, Fifteen and 50/100 Dollars .....	(\$15.50).
	Feet B. M. Timber for sheeting and bracing,	
40	Per 1,000 Feet B. M. One hundred Dollars .....	(\$100.00).

The quantities for Rock Excavation, Class "A" Concrete, Reinforcing Steel and Timber are for the purpose of securing prices, in the event that Rock is encountered and that Reinforcing Steel, Concrete and Timber may be necessary.



EXHIBIT C-230 (*continued*):

Quantities are approximate only.

No extra compensation.

10 VI. The Contractor admits that the quantities of materials to be furnished and the amount of work to be done, as stated in the proposal for bids for the work, are approximate only. The Contractor agrees that The City is not to be held responsible that any of said quantities and amounts shall obtain in the construction of the work, as he has judged for himself as to such quantities and amounts and each of them, and as to the other circumstances affecting the cost of the performance of this contract; and that he will not at any time dispute or complain of such statement nor assert that there was any misunderstanding in regard to the character, size or depth of the excavations to be made or the kind or amount of the materials to be furnished or work to be done. The Contractor hereby agrees that he will 20 not ask, demand, sue for, nor seek to recover for the entire work any extra compensation beyond the amount payable for the several classes of work and kinds of materials in this contract enumerated, which shall be actually performed and furnished, at the prices therefor herein agreed upon and fixed.

Sewers, etc., to be built as shown on the plan.

30 VII. The sewer and appurtenances will be built on the lines, at the depths and at the grades and in the manner shown on the plan of the work as the same will be designated on the ground by the Engineer.

Line may be changed.

40 The President may change the line of the sewer or the location of the receiving basins, or other sewer appurtenances provided such changes do not materially affect either the character or the amount of the work to be done, or the conditions under which it is to be performed, and the Contractor hereby agrees to make no claim for damages or extra compensation on account thereof.

Preservation of points, stakes, etc.

The Contractor will safeguard all points, stakes, grade marks, monuments and bench marks made or established on or near the line of work, and he agrees to accept responsibility for and to remedy at his cost any mistakes that may be caused by

EXHIBIT C-230 (*continued*):

the unauthorized disturbance or removal of such points, stakes, grade marks, monuments and bench marks.

Written order for extra work.

10 VIII. No claim for additional work or materials shall be made by or allowed to the Contractor, unless before the performance of such additional work the President shall have first authorized the same, in writing, and the same shall have been done or furnished under a written order from the President, given before the performance of such additional work or the furnishing of such additional materials. The aggregate price to be paid for additional work or materials so authorized or ordered shall not exceed five per cent. (5%) of the contract price or the total cost of the work and materials.

Contract may be modified.

20 This contract may be modified and changed from time to time as may previously be agreed to, in writing, between the parties hereto, in a manner not materially affecting the substance thereof or increasing the contract price thereunder, in order to carry out and complete more fully and perfectly the work herein agreed to be done and performed.

Limit to extras.

30 All claims for additional work or materials in any month shall be made to the Engineer, in writing, before the 15th day of the following month, and failing to make such claim within the time required, the rights of the Contractor to additional pay for such additional work or materials shall be deemed to have been waived and forfeited.

Inspection.

Work or materials may be condemned at any time.

40 IX. The Engineer shall inspect the materials furnished and the work done and see that the same correspond with the specifications. The Engineer is hereby authorized and empowered to reject and refuse all labor and material or method of application, or any part thereof, offered under or in fulfillment of this contract, that do not comply in kind, quality or quantity with the terms thereof. Any material delivered or offered to be delivered under this contract, which shall be rejected by the Engineer as not conforming to the terms thereof, will be forthwith removed